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# RELATED PARTY TRANSACTIONS AND CORPORATE GOVERNANCE

Elizabeth A. Gordon, Elaine Henry and Darius Palia

## ABSTRACT

*Transactions between a firm and its own managers, directors, principal owners or affiliates are known as related party transactions. Such transactions, which are diverse and often complex, represent a corporate governance challenge. This paper initiates research in finance on related party transactions, which have implications for agency literature. We first explore two alternative perspectives of related party transactions: the view that such transactions are* conflicts of interest *which compromise management's agency responsibility to shareholders as well as directors' monitoring functions; and the view that such transactions are* efficient transactions *that fulfill rational economic demands of a firm such as the need for service providers with in-depth firm-specific knowledge. We describe related party transactions for a sample of 112 publicly-traded companies, including the types of transactions and parties involved. This paper provides a starting point in related party transactions research.*

## 1. INTRODUCTION

Recent corporate scandals have heightened concern about U.S. corporate governance. One of the recurring areas of concern among these corporate scandals is related party transactions. These transactions are diverse, often complex business transactions between a firm and its own managers, directors, principal owners

**Corporate Governance**
**Advances in Financial Economics, Volume 9, 1–27**

**ISSN: 1569-3732/doi:10.1016/S1569-3732(04)09001-2**

or affiliates.[1] As commonly viewed by regulators, market participants, and other corporate stakeholders, related party transactions represent potential conflicts of interest that can compromise management's agency responsibility to shareholders or a board of director's monitoring function. The recent Sarbanes-Oxley Law limits the types of related party transactions in which companies can engage.[2] Regulators, overseers, and standard setters are also considering even more rigorous standards or rules limiting and prohibiting related party transactions:

> . . . it is important to have specific standards or rules (in effect, internal regulation) to prohibit behavior that creates the most serious risk to shareholders, such as *related party transactions* [emphasis added]. Certain basic principles, such as the need to prevent conflicts of interest, need to be embodied in internal rules that then must control the relationship of officers and directors to their company at all times. These fundamental limits should not be waivable. In other cases more general standards or guidelines will need to be used to provide more flexibility and to allow for case by case decisions.
>
> "RESTORING TRUST" Report to The Hon. Jed S. Rakoff, The United States District Court for the Southern District of New York, On Corporate Governance for the Future of MCI, Corporate Monitor, August 2003, Richard C. Breeden, From the SEC website (www.sec.gov).

Investors and market observers are concerned that transactions with related parties are harmful to company shareholders:

> These are the kinds of relationships that companies should avoid, in the view of some corporate-governance experts and investors. Such related-party transactions raise questions about whether corporate insiders are fully focused on the interests of shareholders, experts say. The deals, no matter how small, can create the impression that an insider is using company assets for personal benefit, and that the company is getting the short end of the stick.
>
> "Even Good Insider Deals Raise Doubts."
> *Wall Street Journal*, May 7, 2003. p. B6.

In addition to investors and market participants, other stakeholders such as employees and labor unions are calling into question the propriety of such transactions:

> A union representing janitors is taking a broom to a corner of the corporate-disclosure world known as related-party transactions. The Service Employees International Union is asking stockholders of Equity Office Properties Trust, a big Chicago-based real estate investment trust, to approve a measure at the coming May 20 annual meeting that would require greater disclosure of such transactions, which involve business dealings between a company and its own officers and directors or their families . . . Union officials, for example, point to Equity Office's report of a transaction last year in which an entity connected to its chairman, Samuel Zell, redeemed certain securities for about $29 million. The union argues that the company's disclosure doesn't provide enough information to determine whether the transaction was in Equity Office's best interest.
>
> "Equity Office Faces Move on Related-Party Deals"
> *Wall Street Journal*, May 14, 2003. p. C13.

Despite this interest in related party transactions, there is limited academic research to understand the nature of related party transactions and their economic consequences. In this paper, we offer two main contributions to enhance our understanding of these types of transactions. We first explore the role of related party transactions in the context of the firm's corporate governance environment. Second, we comprehensively describe related party transactions for a large sample of companies. One view, consistent with portrayals in the business press, is that related party transactions are conflicts of interest and encompass agency issues of the type considered by Berle and Means (1932) and Jensen and Meckling (1976). An alternative view is that related party transactions are efficient transactions that rationally fulfill other economic demands of a company such as securing in-depth skills and expertise between participants with private information or providing an alternative form of compensation. These contrasting views offer very different implications of the potential costs and benefits of transacting with related parties.

We also describe in detail related party transactions for a sample of 112 publicly-traded companies in fiscal years 2000 and 2001. We present evidence on the number of, the parties involved with, and the types of transactions for our sample companies. Of the several interesting characteristics we document, we find that companies disclose two related party transactions (at the median) but the number ranges from 0 to 23. We were surprised to find that only 19% of companies report none, while approximately 10% report 10 or more. Approximately 47% of all disclosed transactions are with executives and 47% with non-executive board members, highlighting the need for understanding differing economic implications of transactions with executives versus non-executives board members. Loans to related parties for reasons other than home or stock purchases are reported by the greatest number of companies, with about 25% disclosing at least one. However, real estate transactions are the largest group representing about 14% of all transactions. Loans *from* related parties are the greatest dollar amount of all transactions with a mean (median) of $38 million ($6 million).

This paper provides a starting point in comprehensively examining the role of related party transactions in corporate governance. Through describing and discussing the role of related party transactions, we identify issues and raise questions to be further explored. For instance, one question is whether corporate governance mechanisms such CEO compensation, board composition, or large shareholder ownership concentration mitigate the extent of agency problems and/or enhance monitoring in companies with related party transactions (Gordon et al., 2004). Another question is the impact of related party transactions on firm performance. Other avenues for investigation could determine whether the presence of related party transactions is associated with properties of financial reports or introduces incentives for earnings management (Bushman & Smith,

2001; Gordon & Henry, 2003; Sherman & Young, 2001). With our discussion and description of related party transactions, we hope to stimulate interest and research to be useful to company executives, boards of directors, standard setters, legislators, financial statement users and others.

The remainder of the paper proceeds as follows: We describe alternative views of related party transactions and their implications for corporate governance in Section 2. We summarize reporting requirements for related party transactions in Section 3. We describe our sample creation and data collection procedures in Section 4. In Section 5, we present an extensive discussion and descriptive analyses of the related party transactions data. We offer conclusions and extensions in Section 6.

## 2. TWO ALTERNATIVE VIEWS OF RELATED PARTY TRANSACTIONS AND THEIR IMPLICATIONS FOR CORPORATE GOVERNANCE

Although commonly viewed as conflicts of interest between firm managers/board members and their shareholders, there are two alternative views of related party transactions that are consistent with economic theory. Under the *conflict of interest view*, related party transactions compromise management's agency responsibility to shareholders or a board of director's monitoring function. An alternative perspective, which we refer to as the *efficient transactions view*, is related party transactions fulfill underlying economic needs of the company between parties who have built up trust and shared private information. The conflict of interest view portrays related party transactions as potentially harmful to the interests of the shareholders. On the other hand, the efficient transactions view maintains that related party transactions do not harm, and perhaps even benefit, shareholders.

The potential conflict of interest and impropriety of these related party transactions is demonstrated in highly publicized corporate scandals including Enron, Adelphia, and Tyco as highlighted in excerpts from the business press below:

> Enron told the world that these [dozens of off balance sheet] partnerships allowed it to hedge against fluctuations in the value of its investments. Well, hedge, schmedge. It was the disclosure, in October, that $1.2 billion of its market value had disappeared as result of these "related party" transactions with private partnerships that signaled the beginning of the end. Two weeks later, these partnerships caused Enron to slash its reported earnings since 1997 by almost $600 million. A week later, those pesky side deals caused Enron to reveal that it was out another $700 million. Investor trust understandably collapsed, and, presto, Chapter 11.
>
> "What Was Enron?" Editorial,
> *Wall Street Journal*, December 12, 2001. p. A18.

> Warning that corporate crimes will result in "handcuffs and a jail cell," federal authorities arrested the founder of Adelphia Communications and two sons Wednesday on charges they looted the now-bankrupt cable giant and used it as their "personal piggy bank."
>
> "Government Arrests Founder of Adelphia, Two Sons." Associated Press Newswires, July 25, 2002.

> From 1997 to 2002, the SEC said Mr. Kozlowski improperly borrowed $242 million from a Tyco program intended to help executives pay taxes on restricted-stock grants. Instead of using the funds for that purpose, Mr. Kozlowski spent the money on yachts, fine art, estate jewelry and luxury apartments. Mr. Swartz similarly used $72 million in loans from the program for personal investments and business ventures, the SEC said.
>
> "Former Tyco Executives Are Charged – New York Prosecutors Say Ex-CEO, Finance Officer Ran 'Criminal Enterprise.' " *Wall Street Journal*, September 13, 2002.

There are, as well, less widely publicized incidents. For example, a shareholder lawsuit filed in September, 2003, accuses Reckson Associates Realty Corp.'s top executives of self-dealing in agreeing to sell Reckson's industrial portfolio to the founding Rechler family. The suit, which also names each of the company's outside board members, alleged that the independent directors who reviewed the plan "are so entangled with the Rechler family that their review is rendered meaningless" (Alan J. Wax, September 30, 2003; Bloomberg News).

While recent scandals perhaps highlight extreme examples of potential abuses of transactions with executives and board members, the view that related party transactions represent a conflict of interest is consistent with agency issues of the type considered by Berle and Means (1932) and Jensen and Meckling (1976). Jensen and Meckling (1976, p. 90) characterize the agency conflict between a manager and outside shareholders as the manager's tendency to appropriate the firm's resources for personal consumption, similar to perquisites. As such, they represent the potential for the appropriation of the firm's resources.

To control potential agency costs, companies can increase scrutiny of these transactions, therefore incurring additional monitoring costs relative to transactions with unrelated third parties. Companies do not consistently disclose whether or how they monitor related party transactions. Some firms have stated policies that related party transactions must be approved by independent members of the board's audit committee or corporate governance committee. For instance, in its December 31, 2001 10-K, Digital Lightwave discloses that "in accordance with the Company's policy on related party transactions, the loan was approved by the independent members of the Audit Committee of the Board of Directors." Executives and non-executive board members can also recuse themselves from decisions pertaining to a transaction in which they are considered a related party. Additional layers of approval or recussal, though clearly justified from

a governance perspective, are diversions of managerial resources from other potentially more productive uses and as such are an economic cost to the firm.

The issue of monitoring becomes even more critical when non-executive directors engage in related party transactions. Fama (1980) and Fama and Jensen (1983) assert that the optimal board composition should include both inside (executive) and outside (non-executive) board members. The inside board members bring in-depth knowledge and outside members bring independence and monitoring skills. So related party transactions with non-executive directors not only potentially represent the appropriation of the firm's resources, but they also can conflict with and diminish the outside directors monitoring function. Bushman et al. (2004) also consider the industry-specific expertise of the outside director as beneficial to the firm and its board. However, they do not explore the implications of engaging a non-executive director to perform services contractually separate from the directorship, or to provide goods to the firm.

In contrast to the view of related party transactions as conflicts of interest, an alternative view is that related party transactions are efficient transactions that rationally fulfill economic demands of a company such as securing in-depth skills and expertise or providing an alternative form of compensation. For instance, say a non-executive director possesses an in-depth knowledge of firm-specific activities as well as an expertise that the company demands such as legal expertise. Then it could be more effective and more cost efficient for the company to engage the related party to provide the service than an outsider. Because the non-executive director possesses an in-depth knowledge of the firm, information asymmetries are reduced and contracting enhanced. Not only is the company obtaining needed services, but engaging the director to provide the services can solidify the director's economic bond to the company and escalate the director's commitment. Another example of the efficiency of related party transactions is offering a home loan to a new employee as part of a relocation or employment package. Instead of spending time and efforts to apply for a loan, a new executive can begin to lead the company. Finally, there may also be situations when working with parties whom an executive knows and trusts (such as family members or family-owned enterprises) enables that executive to perform more effectively and enthusiastically, perhaps also enhancing shareholder value.

Even though the presumption by regulators and standard setters is that related party transactions are not carried out on an arm's length basis and some may not have occurred or may have occurred on different terms with an unrelated party (Statement of Financial Accounting Standards No. 57, paragraph 13), many companies disclose that their contracts with related parties have been made on terms at least as favorable as with unrelated parties. Therefore, under the efficient transactions view, a firm engaging in related party transactions would incur

no conflicts of interest and no increased agency or monitoring costs. Indeed, monitoring *benefits* could arise from greater trust in dealing with family members or longer-term relationships. If a firm undertakes related party transactions which enhance – or at least do not harm – the economic interests of the shareholders, there should be no negative impact on the firm other than the increased costs of reporting complexity.

Consistent with the view that related party transactions do not harm the interests of shareholders, arguments also have been made that the amount of the transactions is small to the related parties and not material to companies. Therefore, even if some agency conflict potentially exists, it is of little concern. Despite these arguments, related party transactions are being questioned even at companies that have not been the subject of intense investigation, as noted in a recent Wall Street Journal article:

> The dollar amounts of related-party transactions may be small, but "each of these little things is a piece of mosaic and pretty soon they form a picture," said Julie Fox Gorte, director of social research at Calvert. At Oracle, that picture is a company where the values of shareholders and executives aren't aligned, she said.
>
> Other investors aren't alarmed by the transactions because they are publicly disclosed, and the amount of money involved is relatively small, said Bhasin, the hedge fund analyst. But most would prefer to see the practice end because of the risk that bad publicity over the deals could hurt a company's stock price.
>
> "Even Good Insider Deals Raise Doubts."
> *Wall Street Journal*, May 7, 2003. p. B6.

The two alternative views have significantly different implications for corporate governance. Under the conflict of interest view, corporate governance mechanisms such as those explored by the agency literature will be less effective in reducing the extent of related party transactions. As a consequence, we would expect to find little relationship between the extent of a firm's related party transactions and governance mechanisms such as CEO compensation, large shareholder ownership, board size and composition, and firm leverage. Under the efficient transactions view, corporate governance mechanisms as mentioned above either would be positively related to these transactions (if such mechanisms contribute to efficiency), or would be unnecessary (and thus unassociated with related party transactions).

We know of no research that comprehensively describes or examines a firm's related party transactions. Research on board composition uses the presence of related party transactions to classify non-executive board members as "affiliated" or "grey" directors (Denis & Sarin, 1999; Klein 2002a, b; Vicknair et al., 1993; Weisbach, 1988). Affiliated directors typically are viewed as non-independent, outside directors. Under this definition, the existence of one related party

transaction classifies a non-executive director as non-independent. This classification does not consider the magnitude or type(s) of involvement, which could understate any potential conflicts of interest.

Additionally, limited research investigates related party transactions with executives. Shastri and Kahle (2003) focus on executive loans and find the ceteris paribus result that executive stock ownership increases following stock purchases and option exercise loans. This research, too, does not investigate other transactions with executives that could offer insights into the extent of the agency conflict between managers and owners. To summarize, current research does not address the complexity or diversity of related party transactions, important in understanding the economic implications of these transactions.

## 3. REPORTING REQUIREMENTS FOR RELATED PARTY TRANSACTIONS

Regulators and standard setters have primarily exercised oversight of related party transaction by requiring that they be disclosed, assuming that:

> information about transactions with related parties is useful to users of financial statements in attempting to compare an enterprise's results of operations and financial position with those of prior periods and with those of other enterprises. It helps them to detect and explain possible differences. Therefore, information about transactions with related parties that would make a difference in decision making should be disclosed so that users of the financial statements can evaluate their significance.
>
> Statement of Financial Accounting Standards No. 57, paragraph 18.

By requiring disclosure rather than limiting certain transactions, regulators and standard setters have not taken a position on whether related party transactions are harmful or beneficial to the firm and its shareholders. In essence, such regulations leave open the possibility that the efficient transaction view of related party transactions holds. Yet, regulators and standard setters require that the information be made available to allow financial statement users to make their own judgments regarding whether the transactions are efficient or potential conflicts of interest.

Managers, then, make the choice to engage in related party transactions knowing that these transactions will have to be disclosed. Because of the required disclosure, they may avoid engaging in certain transactions that they believe would raise questions of a conflict or impropriety, even when the firm would benefit or at least not be harmed.[3]

There are several limitations of disclosure and disclosure requirements that impact what investors observe in corporate reports. One limitation of disclosure rules is that only transactions with named executives and board members must

be disclosed. While these transactions perhaps present the greater potential for conflict of interest, related party transactions with upper management (but which are below the disclosure threshold) can also result in the potential appropriation of company resources. Another limitation is the $60,000 materiality threshold for disclosure. While we find cases of disclosures below the $60,000 threshold, there are perhaps other relations or transactions in lower amounts (either individually or cumulatively) that would be informative to financial statement users. Another shortcoming is that related parties are, perhaps by necessity, fairly narrowly defined. There are no doubt instances of other relationships, for example among board members, which do not fall strictly in the definition of related parties but are nonetheless obstacles to true board independence.[4] Family relationships are clearly definable as are interlocking board relationships which must be disclosed with respect to compensation committees; but while nepotism is unambiguous, cronyism is not. Beyond these limitations of disclosure requirements, problems can of course also arise when companies do not comply with standards to disclose related party transactions as with certain of Tyco's transactions or when they provide too limited disclosure as with certain transactions at Enron.

Recently, with the passage of the Sarbanes-Oxley Law, lawmakers have specifically prohibited certain related party transactions due to the perceived conflict of interest. Section 402 of Sarbanes-Oxley generally provides that it will be unlawful for an issuer to extend credit to any director or executive officer.[5] As we discuss further below, our sample shows that over 23% of all RPTs we identified are loans to related parties, with over 25% of companies reporting at least one. Given that loans possibly represent a form of compensation, this prohibition on executive loans may result in companies providing some alternative remuneration.

Below we discuss in more detail the definition of related parties and disclosure required by the two main sources of reporting regulations on related party transactions: FASB disclosure guidelines and SEC requirements.[6] FASB Statement No. 57, Related Party Disclosures, provides guidance for disclosure of transactions with related parties. The relevant SEC financial statement regulations are included in Regulation S-X, rules 4-08(k)(1) and (2), and the SEC non-financial statement disclosure requirements are presented in Regulation S-K (Reg. §229.404. Item 404). Each of these sources is summarized below.[7]

### *3.1. FASB Statement of Financial Accounting Standards No. 57, Related Party Disclosures*

Related parties are defined to include three basic categories of individuals: board members, executives, and principal owners (owners of more than 10% of voting

interests of the enterprise). In addition, the immediate family members of any of these categories of individuals, as well as any entities controlled by any of these categories of individuals, are also considered to be related parties. Related parties also include affiliates of the enterprise, where an affiliate is described as "a party that, directly or indirectly through one or more intermediaries, controls, is controlled by, or is under common control with an enterprise"; (para. 24) and, specifically, entities for which the enterprise uses the equity method to account for its investment. Examples include subsidiaries of the enterprise or of the enterprise's parent company, and trusts such as pension trusts managed by or under the trusteeship of the enterprise's management. Related parties are also defined by SFAS 57 to include "other parties with which the enterprise may deal if one party controls or can significantly influence the management or operating policies of the other to an extent that one of the transacting parties might be prevented from fully pursuing its own separate interests" (para. 24).

Other than compensation and similar arrangements in the ordinary course of business, transactions with related parties must be disclosed in the financial statements. The disclosure must include the nature of the relationship, as well as the nature and value of the transaction.

### *3.2. SEC Regulation S-X. 4-08(k) Related Party Transactions, which Affect the Financial Statements*

Rule (1) requires related party transactions and amounts to be identified on the financial statements. Rule (2) requires "in cases where separate financial statements are presented for the registrant, certain investees, or subsidiaries, separate disclosure shall be made in such statements of the amounts in the related consolidated financial statements which are: (a) eliminated; and (b) not eliminated. Also any intercompany profits or losses resulting from transactions with related parties and not eliminated and the effects thereof shall be disclosed."

### *3.3. SEC Regulation S-K (Reg. §229.404. Item 404) Non-Financial Statement Disclosure Requirements*

SEC Regulation S-K requires disclosure of the following relationships and related transactions:

- Nature and Amount of transactions exceeding $60,000 with directors (existing and nominees), executives, owners of more than 5% voting interest, and immediate family members of any of the foregoing persons.

- Nature and Amount of certain business relationships with an entity owned or managed by a director (or nominee), including: sales to, purchases from, borrowings from, legal or investment banking services from the related entity.
- Indebtedness of a related party to the enterprise, including amounts owed by: any director or executive officer of the registrant, or their immediate families; any corporation or organization (other than the enterprise or a majority-owned subsidiary of the enterprise) which a director or executive owns more than 10% or serves as an executive officer or partner.
- Nature and amounts involved in transactions with Promoters.

## 4. SAMPLE CREATION AND DATA COLLECTION PROCEDURES

### *4.1. Sample Creation*

Because we aim to assess related party transactions for a broad group of publicly-traded firms, we select our sample from the population of companies on COMPUSTAT. We stratify our sample by size (quintiles of market value) and industry to ensure comprehensive coverage. We define industries following Fama and French (1997). We restrict our sample to those companies with sales, income, market value and other key data in COMPUSTAT available for the 2000 fiscal year.[8] We examine two years of RPT disclosures, 2000 and 2001, selected because of increased scrutiny of company's financial reports and transactions in 2001 following the Enron debacle unfolding in 2000. We initially select 448 firms in 20 different industries, representing about 10% of the population of eligible firms. We limit this initial sample to 112 firms which have compensation data on EXECUCOMP.

### *4.2. Identification and Characterization of Related Party Transactions*

We search (using a key word search supplemented by direct reading) a company's proxy statements and 10-Ks for related party disclosures. Related party transactions (RPTs) are most commonly found in proxy statements, often being incorporated by reference in the 10-K. RPTs are described in the 10-K under Item 13, "Certain Relationships and Related Transactions" as well as in the footnote(s) to the financial statement, which are often titled "Related Party Transactions." In the proxy, RPTs are usually described under "Certain Relationships and Related Transactions" or "Certain Company Transactions with Management" or "Certain Transactions."

Family relationships are noted in the biographical descriptions of board members and named executives, which are included in the proxy.

We characterize related party transactions along four main dimensions: the primary party involved, the secondary party involved (if any), the type of transaction, and the amount of the transaction, if disclosed. Parties involved are identified first by their relationship with the firm such as executives, non-executive board members, principal owners, subsidiaries or other. Because we are interested in potential conflicts of interest on the management side and impairment of the monitoring function on the board side, we track executives and non-executives separately and further categorize these groups. Within the executive group, we separate transactions with an executive chairman, executive board members and non-board executives. We track executive chairman as a separate group, motivated by Jensen's (1993) assertion that boards are less effective when the chief executive officer is also the chairman. Similarly, having a larger percentage of inside executives on board could impair monitoring. Within the non-executive group we separately identify non-executive board members and a non-executive chairman.

If transactions involve a family member of, or a company owned by or affiliated with, any of these related individuals, we identify both parties. The party having the most direct or most senior relationship with the firm is identified as the "primary related party."[9] The family member, or company owned by or affiliated with the primary related party, is the secondary related party. We group secondary related parties by executives, executive's business, non-executives, non-executive's business, principal owners, subsidiaries and other. When a transaction is directly between the company and the primary related party (e.g. loans), the secondary related party category is not applicable. The third dimension we identify is the type of transaction. We identify seven main types of transactions: direct service between related parties or the related party and the company, purchases of goods or contract services acquired from the related party, sales to the related party, loans to related parties, loans from related parties, investment and other. Within type, we report the different kinds of transactions disclosed by companies. Examples of direct service transactions are an executive chairman of the board hiring a relative in a non-executive position, a non-executive director being directly employed by a principal owner, or a relative of an executive serving on the board. Contracted services acquired from the related party include management services, legal services, marketing, real estate, accounting, investment banking, and other. We also include with contracted services the purchases of any goods from the related party. We classify loans into those to the related party for houses and stock purchases, where specified, or other, where another purpose is given or none is identified.[10] As previously mentioned, such loans to related parties are now prohibited under the Sarbannes-Oxley Law. Another class of loans we separately

identify is loans from the related party such as arise, for example, from debt-financed purchases from the related party. The "other" category includes other types of transactions such as shareholder agreements and shared R&D. We do not include the existence of employment agreements or indemnification agreements, which some companies disclose as related party transactions, since these items are unambiguously compensation.

The final dimension we identify is the amount of related party transactions. For loans, investments and single transactions, we collect principal amounts; we code annual amounts where the transaction is ongoing or a multiple year involvement as a contracting service. We give examples of reported related party transactions disclosures and our classification in the Appendix.

### *4.3. Variable Definition – Related Party Transactions*

Because related party transactions are diverse and often complex business transactions, we investigate different measures of a firm's related party transactions and their complexity. Unlike audit committee (or board) independence, where a logical measure is the number of independent directors scaled by the size of the committee (or board), a firm-specific scalar for related party transactions is less obvious because there is no limit on the number, types or people in which a firm can engage in a related party transaction. In an examination of determinants of related party transactions, Gordon et al. (2004) scale the number of RPTs by the total number of named executives. However, for the purposes of the current paper, our objective is to offer a thorough description of the transactions including their complexity; in gauging complexity, our objective is to capture the notion of the firm's "web" of related party transactions. Therefore, we first examine simple measures of a firm's related party transactions including the total number of different related party transactions and whether or not a firm has a related party transaction with a specific group of primary related parties, a specific group of secondary related parties, or a specific type of related party transaction and the amount, if available.

We next attempt to measure the overall complexity of a firm's related party transactions. We believe that more parties and more types of transactions indicate extensive and pervasive potential conflicts of interest and monitoring problems. To do this, we count the number of unique related parties and types of transactions. For example, say a firm has three different transactions, all with a single executive: (1) a relative is also employed by the firm; (2) the executive received a loan from the firm; and (3) the firm leases real estate from a trust owned by the executive. The number of primary related parties is one. The number of secondary related parties

is two (the relative and the trust); since the loan is a direct transaction between the firm and the executive, there is no secondary related party. The number of different types of transactions is three. Each of these is a gauge of the complexity of transactions.[11]

## 5. DESCRIPTIVE ANALYSES OF RELATED PARTY TRANSACTIONS

Table 1 describes the industry composition of our sample by one-digit SIC codes, indicating substantial coverage of the various industries. Because we limit our sample to companies covered by EXECUCOMP, the mean (median) market value of sample firms is high at $11.1 billion ($1.5 billion). Table 1 also presents descriptive statistics on the number of related party transactions by industry. The variation in the median as well the maximum reported suggests industry effects in the number of related party transactions.

Table 2 presents descriptive statistics on summary related party transaction variables. The mean (median) number of related party transactions per company is 3.92 (2). To examine the complexity of transactions, we calculate the number of transactions per individual primary related party by company. The mean (median) number of transactions per individual primary related party is 3.29 (3). Another gauge of complexity is the number of different primary related party groups (i.e. executives, board members) engaged in transactions. On average (at the median),

***Table 1.*** Sample Industry Composition and Summary of Related Party Transactions by Industry[a]

| Industry | Number of Companies | Market Value (in $ Millions) | | Related Party Transactions | | | |
|---|---|---|---|---|---|---|---|
| | | Mean | Median | Mean | Median | Min | Max |
| 1. Mining and construction | 10 | 2,169 | 912 | 3.5 | 3 | 0 | 7 |
| 2–3. Manufacturing | 51 | 10,547 | 1,833 | 2.7 | 2 | 0 | 19 |
| 4. Transportation & communication[b] | 7 | 16,120 | 5,269 | 7.4 | 7 | 2 | 20 |
| 5. Wholesale and retail | 25 | 5,374 | 846 | 5.6 | 4 | 0 | 20 |
| 7–8. Hotels and services | 19 | 15,338 | 1,337 | 4.1 | 3 | 0 | 16 |
| Total[c] | 112 | 11,092 | 1,496 | | | | |

[a] We define industries using one-digit SIC codes.
[b] We exclude public utilities from our sample.
[c] We collect data on related party transactions from 112 companies for fiscal years 2000 and 2001.

***Table 2.*** Descriptive Statistics of Related Party Transaction Summary Variables.

| Related Party Transaction (RPT) Summary Variables ($N = 224$) | Mean | Std. Dev. | Median |
|---|---|---|---|
| Overall | | | |
| Number of RPTs per company | 3.920 | 4.310 | 2 |
| Primary related parties | | | |
| Number of RPTs per individual primary related party | 3.288 | 2.518 | 3 |
| Number of different types of primary related parties per company | 2.055 | 1.068 | 2 |
| Secondary related parties | | | |
| Number of RPTs per individual secondary related party | 2.686 | 2.745 | 2 |
| Number of different types of secondary related parties per company | 2.121 | 1.280 | 2 |
| Types of transactions | | | |
| Number of different types of transactions per company | 2.607 | 1.544 | 2 |

companies have related party transactions with 2.06 (2) different types of primary related parties.

We examine the complexity of dealings with secondary related parties in a similar way. The mean (median) number of transactions per unique secondary related party is 2.69 (2). On average (at the median), companies have related party transactions with 2.125 (2) different types of secondary related parties. Finally, we evaluate the complexity by type of transaction, finding that companies have a mean (median) of 2.61 (2) number of different types of transactions out of the 18 different types we identify.

Table 3 presents more detail on the number of RPTs per company and primary related party. Table 4 presents more detail on the secondary related party in transactions. Table 5 presents more detail on the types of related party transactions.

Table 3 presents the number of related party transactions per company and by primary related party. The 112 companies (224 observations over two years) in our sample report a total of 878 different related party transactions (445 in 2000 and 433 in 2001). Approximately 80% of observations report at least one RPT, with number per company ranging from 0 to 20. Of the RPTs, approximately 47% are with executives (approximately 18, 16 and 12% with executive chairmen, executives on the board and non-board executives, respectively), indicating potential situations of traditional agency conflict between owners and managers. Of note also is that approximately 47% of the RPTs are with non-executive board members (approximately 6 and 41% with non-executive chairmen and non-executive directors, respectively), potentially indicating that the board's role as independent monitor may be impaired. The remaining transactions are with principal owners, subsidiaries or other affiliates.

***Table 3.*** Summary of Related Party Transactions by Company and Primary Related Party.

| Number of Related Party Transactions per Company | Number of Obs.[a] | Percent of Obs. | Number of Related Party Transactions[a] | Percent of RPTs | Percent of Transactions With:[b] | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Executives[c] | | | Non-Executives[c] | | Principal Owner | Subsidiary[d] | Other |
| | | | | | Chairman | Board Member | Non-Board | Director | Chairman | | | |
| 0 | 43 | 19.2 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 29 | 12.9 | 29 | 3.3 | 0.5 | 0.8 | 0 | 1.5 | 0 | 0.1 | 0.2 | 0.2 |
| 2 | 42 | 18.8 | 84 | 9.6 | 0.9 | 1.9 | 0.7 | 4.7 | 0.6 | 0.7 | 0.1 | 0 |
| 3 | 22 | 9.8 | 66 | 7.5 | 1.1 | 1.6 | 0.8 | 2.5 | 0.7 | 0.5 | 0.2 | 0.1 |
| 4 | 13 | 5.8 | 52 | 5.9 | 1.0 | 1.4 | 0.9 | 2.1 | 0.6 | 0 | 0 | 0 |
| 5 | 15 | 6.7 | 75 | 8.5 | 1.5 | 1.7 | 1.3 | 2.4 | 0.6 | 0 | 0.9 | 0.2 |
| 6 | 11 | 4.9 | 66 | 7.5 | 0.1 | 1.3 | 0.5 | 4.0 | 0.2 | 0.8 | 0 | 0.7 |
| 7 | 9 | 8.5 | 63 | 7.2 | 2.5 | 3.2 | 2.6 | 3.7 | 2.2 | 0.3 | 0.3 | 0.1 |
| 8 | 6 | 2.7 | 48 | 5.5 | 1.5 | 0.3 | 0.6 | 2.6 | 0.3 | 0.1 | 0 | 0 |
| 9 | 1 | 0.5 | 9 | 1.0 | 0 | 0.7 | 0.2 | 0.1 | 0 | 0 | 0 | 0 |
| 10 | 9 | 4.0 | 90 | 10.3 | 3.5 | 0.3 | 1.4 | 4.0 | 0.6 | 0 | 0.5 | 0.3 |
| 11 | 2 | 0.9 | 22 | 2.5 | 1.1 | 2.6 | 0 | 0.7 | 0.5 | 0 | 0 | 0 |
| 12–20 | 12 | 5.4 | 274 | 31.2 | 4.5 | 0.4 | 3.2 | 12.2 | 0 | 0 | 0.4 | 0 |
| | 224 | 100.0 | 878 | 100.0 | 18.2 | 16.2 | 12.2 | 40.5 | 6.2 | 2.5 | 2.6 | 1.4 |
| Percent of Companies with Transaction | | | | | 28.1 | 29.9 | 21.8 | 57.1 | 12.9 | 6.7 | 5.8 | 3.6 |

[a] Related party transactions data is presented for 112 companies for two years (fiscal years 2000 and 2001). Of the number of related party transactions, 444 are reported in 2000 and 433 in 2001.

[b] The "Percent of Transactions with": columns report the percent out of 100% by primary party and number of transactions.

[c] Includes both current and former executives and non-executives. Approximately 2% (1%) of transactions with executives are with former executives (non-executives).

[d] Also includes transactions with joint venture partners.

***Table 4.*** Summary of Related Party Transactions by Secondary and Primary Party.

| Secondary Party | Percent of Companies with Transaction ($N = 224$ Obs.)[a] | Percent of Related Party Transactions ($N = 878$ Trans.)[a] | Primary Party Percent of Transactions With:[b] | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Executives[c] | | | Non-Executives[c] | | Principal Owner | Subsidiary[d] | Other |
| | | | Chairman | Board Member | Non-Board | Director | Chairman (Not CEO) | | | |
| Executives | | | | | | | | | | |
| Chairman | 8.0 | 3.2 | 3.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Board member | 3.6 | 1.0 | 0.0 | 1.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Non-board | 8.9 | 3.7 | 0.0 | 0.0 | 1.4 | 1.4 | 0.9 | 0.0 | 0.0 | 0.0 |
| Executive's business | | | | | | | | | | |
| Chairman | 12.5 | 7.7 | 7.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Board member | 6.3 | 2.4 | 0.0 | 2.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Non-board | 7.1 | 3.2 | 0.0 | 0.1 | 2.3 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 |
| Non-executives | | | | | | | | | | |
| Director | 12.9 | 4.8 | 3.4 | 0.0 | 0.0 | 0.5 | 0.9 | 0.0 | 0.0 | 0.0 |
| Chairman | 6.3 | 3.3 | 0.2 | 0.0 | 0.0 | 0.0 | 3.1 | 0.0 | 0.0 | 0.0 |
| Non-executive's business | 34.8 | 24.8 | 0.0 | 0.0 | 0.2 | 24.6 | 0.0 | 0.0 | 0.0 | 0.0 |
| Principal owner | 4.0 | 2.1 | 0.0 | 0.0 | 0.0 | 1.8 | 0.0 | 0.0 | 0.2 | 0.0 |
| Subsidiary | 1.8 | 1.1 | 0.2 | 0.2 | 0.1 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 |
| Other | 1.8 | 1.8 | 0.0 | 0.0 | 0.8 | 0.8 | 0.2 | 0.0 | 0.0 | 0.0 |
| Not applicable (transaction directly with company) | 63.4 | 40.9 | 3.4 | 12.6 | 7.4 | 9.9 | 1.0 | 2.5 | 2.6 | 1.4 |
| Total | | 100.0 | 18.2 | 16.2 | 12.2 | 40.5 | 6.2 | 2.5 | 2.6 | 1.4 |

[a] Related party transactions data is presented for 112 companies for two years (fiscal years 2000 and 2001). Of the number of related party transactions, 445 are reported in 2000 and 433 in 2001.

[b] The "Percent of Transactions with": columns report the percent out of 100% by primary party and number of transactions.

[c] Includes both current and former executives and non-executives. Approximately 2% (1%) of transactions with executives are with former executives (non-executives).

[d] Also includes transactions with joint venture partners.

***Table 5.*** Summary of Related Party Transactions by Type and Primary Related Party.

| Type of Relation | Percent of Companies With Transaction ($N = 224$ Obs.)[a] | Percent of Related Party Transactions ($N = 878$ Trans.)[a] | Primary Party Percent of Transactions With:[b] | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Executives[c] | | | Non-Executives[c] | | Principal Owner | Subsidiary[d] | Other |
| | | | Chairman | Board Member | Non-Board | Director | Chairman | | | |
| Employment/Direct services | | | | | | | | | | |
| Direct service | 4.0 | 2.3 | 0 | 0.5 | 0.9 | 0.2 | 0 | 0 | 0 | 0 |
| Direct service-exec | 20.5 | 9.6 | 3.9 | 0.2 | 0 | 4.4 | 1.0 | 0 | 0 | 0 |
| Direct service-non-exec | 11.2 | 4.7 | 3.7 | 0 | 0 | 0.4 | 0.7 | 0 | 0 | 0 |
| Goods or services provided | | | | | | | | | | |
| Management services | 10.3 | 4.0 | 0.5 | 1.3 | 0 | 1.6 | 0.5 | 0.2 | 0 | 0 |
| Legal services | 20.5 | 6.6 | 0 | 0 | 1.0 | 5.5 | 0 | 0 | 0 | 0 |
| Marketing | 0.4 | 0.1 | 0 | 0 | 0 | 0.1 | 0 | 0 | 0 | 0 |
| Real estate | 21.0 | 14.4 | 2.9 | 2.0 | 2.0 | 6.8 | 0.8 | 0 | 0 | 0.1 |
| Accounting | 0.4 | 0.1 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0.1 |
| Investment banking | 5.8 | 1.7 | 0 | 0 | 0 | 1.3 | 0 | 0.5 | 0 | 0 |
| Other | 7.6 | 2.8 | 0.4 | 0 | 0.1 | 2.1 | 0.2 | 0 | 0 | 0 |
| Purchases from | 21.0 | 7.0 | 1.3 | 0.4 | 0.5 | 2.9 | 0.6 | 0.5 | 0.7 | 0.4 |
| Sales to related party | 17.0 | 8.9 | 1.4 | 0.8 | 0.4 | 4.2 | 0.6 | 0.6 | 1.0 | 0 |
| Loans | | | | | | | | | | |
| Loans to – home | 15.2 | 11.3 | 1.0 | 5.9 | 3.6 | 0.7 | 0.1 | 0 | 0 | 0 |
| Loans to – stock | 2.7 | 1.0 | 0.2 | 0.5 | 0.4 | 0 | 0 | 0 | 0 | 0 |
| Loans to – other | 20.1 | 10.5 | 1.6 | 3.5 | 1.7 | 2.9 | 0.4 | 0 | 0.5 | 0 |
| Loans from | 8.5 | 2.7 | 0.7 | 0.3 | 0.3 | 0.7 | 0.4 | 0.4 | 0.2 | 0 |
| Investment | 7.6 | 5.9 | 0.2 | 0.9 | 0.6 | 3.6 | 0.4 | 0 | 0.2 | 0 |
| Other | 17.0 | 6.3 | 0.4 | 0.4 | 0.8 | 3.0 | 0.2 | 0.5 | 0.2 | 0.9 |
| Total | | 100.0 | 18.2 | 16.2 | 12.2 | 40.5 | 6.2 | 2.5 | 2.6 | 1.4 |

[a] Related party transactions data is presented for 112 companies for two years (fiscal years 2000 and 2001). Of the number of related party transactions, 445 are reported in 2000 and 433 in 2001.

[b] The "Percent of Transactions with:" columns report the % out of 100% by primary party and number of transactions.

[c] Includes both current and former executives and non-executives. Approximately 2% (1%) of transactions with executives are with former executives (non-executives).

[d] Also includes transactions with joint venture partners.

Table 4 describes the number of transactions by primary and secondary party. The first column gives the percent of companies reporting a transaction with the given secondary related party. About 63% of companies have at least one transaction where the transaction is directly between the company and a single related party such that there is no secondary related party. Examples of these transactions would include an executive loan or engaging a director to provide management services. Overall, transactions directly between the company and a single related party represent approximately 41% of all transactions. Transactions involving a director's business are the next highest group by secondary related party, representing nearly 25% of all transactions, with 35% of companies reporting at least one. Transactions with executive chairmen's businesses make up nearly 8% of all transactions. The large proportion of transactions with related party's businesses contribute to the ambiguity in the role of RPTs. For example, disclosures that a director owns or is affiliated with a company providing goods or services to the firm does not necessarily clearly signal either an efficient transaction or a conflict of interest. Without details on the price and terms of the transaction compared to the company's alternative suppliers – which in many cases would be impractical to identify much less to disclose – an unambiguous determination between conflict and efficiency cannot be made.

Table 5 shows the types of transactions by primary related party. The table indicates a broad range of types of related party transactions. It also shows that several types of transactions are prevalent, reported by about 20% of sample companies: direct service where the executive is one party involved, legal services purchased from a related party, real estate transactions – either renting or sales, sales to a related party, and loans for purposes other than home or stock purchases. The most common type of transaction disclosed is real estate transactions, representing 14.4% of all RPTs. Loans to related parties for homes and other reasons are also common, each representing about 11% of all transactions.

## 6. CONCLUSIONS AND EXTENSIONS

Our discussion of related party transactions emphasizes that the underlying nature of these transactions is unclear. While one view is that they are conflicts of interest, a contrasting view is they are efficient transactions. These two views have dramatically different implications for shareholders. What is clearer from our comprehensive description of related party transaction in our sample companies is that related party transactions are common, varied and can be large. We find about 80% of companies disclose at least one, with a mean of 3.9. Transactions with executives and non-executives board members are equally as common, each resenting

about 47% of all transactions, which highlights the importance of understanding the differing economic implications of transactions with executives versus non-executives board members. The types of transactions that companies engage in are varied, but about 20% of companies report at least one of the following types: direct service where the executive is one party involved, legal services purchased from a related party, real estate transactions – either rental or purchase, purchases of goods from a related party, and loans for purposes other than home or stock purchases.

This paper presents initial evidence on the nature of related party transactions in which companies engage. We also identify issues and raise questions to be further explored. For instance, do corporate governance mechanisms such as CEO compensation, board composition, or large shareholder ownership concentration mitigate the extent of agency problems and/or enhance monitoring in companies with related party transactions? Do shareholders benefit from or are they harmed by these transactions? Is the presence of related party transactions associated with properties of financial reports such as earnings management? Further exploration of related party transactions and questions such as these should be useful to company executives, boards of directors, standard setters, legislators, and others.

## NOTES

1. A related party can be an executive, a non-executive director, a principal owner or investor, a subsidiary, or a joint venture partner. Alternatively, the party may be a family member of, or a company owned by or affiliated with, any of these related individuals. Types of related party transactions include: the firm's purchases of goods or services from the related party, the firm's sale of goods or services to the related party; the firm's loans to or investments in the related party; the related party's loans to and investments in the firm; shareholder agreements on board representation; shared R&D. FASB Statement No. 57, Related Party Disclosures, as well as SEC reporting requirements are summarized in Section 3.

2. Specifically, Section 402 Enhanced Conflict of Interest Provisions (a) Prohibition on Personal Loans to Executives amends the Securities Exchange Act of 1934 to add prohibition on personal loans to executives.

3. The decision by Carly Fiorina, chief executive of Hewlett-Packard, to resign from the board of Cisco Systems, was interpreted as possibly motivated by a "desire to avoid potential conflicts of interest should the two companies develop co-operative projects" *Sunday Times* (London) September 19, 2003.

4. For example, a shareholder suit filed against Reckson Associates Realty by a Michigan police and fire pension fund alleges both that: (a) a sale of assets to the founding family is a "'self-dealing . . . giveaway' after years of double-dipping by co-presidents and co-CEOs who were Rechler family members"; and (b) certain independent directors are tied to the founding family members "through New York and Long Island social, business and charitable circles – and dogs. The suit alleges, for instance, that three of the [founding family members] breed champion Afghan hounds and are tied to . . . [an independent director] through their involvement in the American Kennel Club, which [the director] heads" *Wall Street Journal*. October 15, 2003. Page C1, C4.

5. Financial institutions may extend credit for home improvement, charge cards or securities trading so long as these extensions of credit are made in the ordinary course of business, of a type generally made available by the institution to the public, and on the same general terms and conditions available to the general public. The Act also requires directors, executives and principal owners (of 10%) to report ownership within 10 days of becoming a director, executive or principal owner; and to report changes of ownership within two business days of the transaction.

6. In addition, auditing for Related Party Transactions is covered in various Statements on Auditing Standards (SAS) and related interpretations. In audit planning, for example, the existence of related parties and related party transactions is highlighted as a "condition that may require extension or modification of audit tests." SAS No. 22, Planning and Supervision, (AICPA, Professional Standards, vol. 1 AU sec 311.03) as referenced in AICPA (2001). Since the focus of this paper is on disclosure for Related Party Transactions, auditing guidelines are not included.

7. In addition to the accounting requirements for Related Parties described in the body of the paper, the FASB, SEC and Sarbannes-Oxley Act of 2002 each include aspects of accounting for investments in other entities.

8. We limit our sample to companies with fiscal year-ends in December or January, to non- financial companies due to the nature of regulation, and to industries with more than 50 observations.

9. We also collect additional detail on the parties such as their titles and names. Family relationship to or ownership interest in the secondary related party are specified.

10. Specific characteristics of the loans are coded as disclosed including: whether the loans have a conversion feature or associated warrants, whether loans were made to the related party for purposes of stock purchase, and whether the loan was made at a 0% interest.

11. As mentioned, in gauging complexity, our objective is to capture the notion of the firm's "web" of related party transactions. As another measure of complexity, we multiply the number of primary related parties time the number of secondary related parties times the number of different types of transactions. However, we find this measure is highly and significantly correlated with the number of related party transactions so do not present tests using it.

## ACKNOWLEDGMENTS

We thank an anonymous referee and Anil Makhija (Editor) for helpful comments. The authors gratefully acknowledge the Rutgers Business School Research Resources Fund for providing support for this project.

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# APPENDIX

*Examples of Related Party Transaction Disclosures*

## EXAMPLE I OF DISCLOSURE AND DATA CODING

The sections below are from the Proxy, form 14A, of Looksmart Ltd. filed as of April 26, 2002 and obtained from the SEC website (www.sec.gov). All items, other than the numbered and italicized remarks, have been cut and pasted from the SEC website and so are direct quotes. The numbered, italicized remarks are comments added to indicate how the relevant related party transaction information was coded for this study. There are three related party transactions in this example.

DEF 14A

| | |
|---|---|
| PUBLIC DOCUMENT COUNT: | 3 |
| CONFORMED PERIOD OF REPORT: | 20020605 |
| FILED AS OF DATE: | 20020426 |

FILER:

COMPANY DATA:

COMPANY CONFORMED NAME:

LOOKSMART LTD

**PROPOSAL ONE – ELECTION OF DIRECTORS**

Our board of directors consists of seven directors, three of whom are standing for election: Evan Thornley, Tracey Ellery and Edward West. In addition to the three directors standing for election, we have two incumbent directors with terms expiring in 2003 and two incumbent directors with terms expiring in 2004. Our bylaws provide that the board of directors be divided into three classes, with each class to be as nearly equal in number as possible. There is no difference in the voting rights of the members of each class of directors. Each class of directors serves a term of office of three years, with the term of one class expiring at the annual meeting of stockholders in each successive year. There are no family relationships among any directors or executive officers of the Company, except that Evan Thornley, Chairman and Chief Executive Officer, is married to Tracey Ellery, a member of the board of directors.

**Nominees for Election to the Board of Directors**

The nominees for election to the board of directors are Evan Thornley, Tracey Ellery and Edward West. The board of directors unanimously recommends that you vote FOR election of all nominees as directors.

**Evan Thornley** co-founded LookSmart and has served as its Chairman and Chief Executive Officer since July 1996. From July 1996 to June 1999, Mr. Thornley also served as President. From 1991 to 1996, Mr. Thornley was a consultant at McKinsey & Company, a global consulting company, in their New York, Kuala Lumpur and Melbourne offices. Mr. Thornley holds a Bachelor of Commerce and a Bachelor of Laws from the University of Melbourne, Australia. Mr. Thornley is married to Ms. Ellery.

**Tracey Ellery** co-founded LookSmart and has served as a director since September 1997. Ms. Ellery served as President of LookSmart from June 1999 through

March 2001 and Senior Vice President of Product from July 1996 to June 1999. From 1991 to 1994, Ms. Ellery was Chief Executive Officer of Student Services Australia, an Australian college publishing and retail company. Ms. Ellery studied drama and legal studies at Deakin University, Australia. Ms. Ellery is married to Mr. Thornley.

*1. This relationship between Thornley and Ellery was coded as a single transaction. The primary related party is Thornley, Chairman and CEO. The relationship is "husband." The secondary related party is Ellery. The transaction type 12 means that the transaction type is a "direct service" relationship, in this case the related party serving as a non-executive director.*

**Certain Relationships and Related Transactions**

In October 2001, the Company entered into a license agreement with Viator Ventures, Inc., a technology company wholly owned by Peter Adams, the Company's Senior Vice President, Product and Chief Technical Officer. The license agreement provides for an exclusive license to Viator Ventures' technology in exchange for payment to Viator Ventures of $400,000 and 300,000 shares of Company common stock.

*2. The primary related party is an executive [10] Adams whose title is VP but not on the board [111]. The secondary related party is a company owned by an executive [11] with the ownership percentage 1, i.e. 100%. The transaction type is a purchase from the RP [35], with an amount shown in the principal amount of $400,000 and a code '1' to indicate the payment had an equity component.*

In April 2002, the Company loaned $250,000 to Dianne Dubois, its Chief Financial Officer, in connection with the purchase of a personal residence. The loan bears no interest and is due and payable upon the earliest to occur of: (a) 120 days after Ms. Dubois's resignation from the Company; (b) 180 days after termination of Ms. Dubois's employment, provided that if at that time, the realizable post-tax gain from the stock options held by Ms. Dubois is less than the amount required to repay the loan in full, then the amount of loan due and payable at that time shall equal the amount of the realizable post-tax gain, and the remainder of the loan shall remain outstanding and shall mature upon the next anniversary of the date the loan was made; or (c) 30 days after the sale of the residence. The loan may be forgiven by the Company over a four-year period if Ms. Dubois reaches certain performance milestones or if Ms. Dubois is terminated without cause following a change of control of the Company.

*3. The primary related party is an executive [10] Dubois whose title [19] indicates an executive but not a director. There is no secondary related party since the*

*transaction is directly between the company and the primary related party. The transaction type [427] indicates that the loan is for purchase of a residence and that it is below market (since it is intended to be forgiven).*

EXAMPLE II OF DISCLOSURE AND DATA CODING

The sections below are from the Proxy, form 14A, of Applied Molecular Evolution Inc. filed as of April 29, 2002 and obtained from the SEC website (www.sec.gov). All items, other than the numbered and italicized remarks, have been cut and pasted from the SEC website and so are direct quotes. The numbered, italicized remarks are comments added to indicate how the relevant related party transaction information was coded for this study. There are six related party transactions in this example.

DEF 14A

| | |
|---|---|
| PUBLIC DOCUMENT COUNT: | 7 |
| CONFORMED PERIOD OF REPORT: | 20020529 |
| FILED AS OF DATE: | 20020429 |

FILER:

COMPANY DATA:

| | |
|---|---|
| COMPANY CONFORMED NAME: | APPLIED |

MOLECULAR EVOLUTION INC

| | |
|---|---|
| CENTRAL INDEX KEY: | 0001111312 |
| STANDARD INDUSTRIAL CLASSIFICATION: | SERVICES-COMMERCIA |

**CERTAIN TRANSACTIONS**

On June 15, 2000 and June 16, 2000, certain options were exercised in exchange for cash and promissory notes, including: 280,000 shares purchased by William D. Huse, one of our directors and our Chief Executive Officer and President, for $280 cash and a promissory note for $209,720; 240,000 shares purchased by Jeffry D. Watkins, our Chief Scientific Officer, for $240 cash and a promissory note for $179,760; 200,000 shares purchased by Lawrence E. Bloch, our Chief Financial Officer and Secretary, for $200 cash and a promissory note for $149,800 and 140,000 shares purchased by Keith S. Manchester, our Vice President of Business

Development, for $140 in cash and promissory notes for $154,860. As of April 22, 2002, $235,167, $201,637, $168,031 and $173,684 were still outstanding for the promissory notes of Dr. Huse, Dr. Watkins, Dr. Bloch and Dr. Manchester, respectively. Interest, at the rate of 6.62%, cumulates and is payable with principal at maturity. The maturity date for all of these promissory notes is June 2005. All of these promissory notes are full recourse.

*1. In each of the above 4 related party transactions, the primary related party is an executive [10.] In the case of Huse, the title is President and CEO [10], and for the other three, the title is a non-director VP. The amounts of the notes are shown as principal.*

In March 2002, we provided James B. Breitmeyer, our Chief Medical Officer, with a $400,000 loan to purchase a home. This loan is secured by a second deed of trust on the home that Dr. Breitmeyer purchased and carries an annual interest rate of 6%. Interest on the loan will cumulate and is payable four years from the date of the loan. We agreed to fully forgive the loan in the event that Dr. Breitmeyer is fully employed by us four years from the date of the loan.

*2. The primary related party is an executive [10] whose title is non-director executive [19.] The type of transaction is a 427 because its purpose is to purchase a house, and its terms are below market, i.e. it will be forgiven.*

In connection with Dr. Breitmeyer's relocation to the San Diego area, we paid to move his household goods and automobiles and gave him $20,000 in gross pretax dollars for miscellaneous moving expenses.

*Moving expenses not coded.*

The Company believes that the foregoing transactions were in its best interests. It is the Company's current policy that all transactions by the Company with officers, directors, 5% stockholders or their affiliates will be entered into only if such transactions are approved by a majority of the disinterested directors, and are on terms no less favorable to the Company than could be obtained from unaffiliated parties.

See also "Report of the Compensation Committee of the Board of Directors on Executive Compensation" and "Compensation Committee Interlocks and Insider Participation."

*The following cross-referenced sections are found on other pages of the proxy.*

**Compensation Committee Interlocks and Insider Participation**

None of our executive officers serves as a member of the Board of Directors or Compensation Committee of any other entity that has one or more

executive officers serving as a member of our Board of Directors or Compensation Committee.

Biosynexus, Inc. ("Biosynexus"), paid the Company $250,000 in March 2001 and $250,000 in October 2001 for services provided pursuant to a collaboration with the Company. Dr. Hilal is a director of Biosynexus.

*3. The primary related party Hilal is a non-executive director [20.] The secondary related party Biosynexus is a company with which the non-executive director is affiliated [211] and his ownership position, if any is undisclosed [–0.0001] The type of transaction is [30] indicating the firm sells to the RP.*

**Miscellaneous**

Section 162(m) of the Internal Revenue Code disallows the deductibility by the Company of any compensation over $1 million per year paid to each of the chief executive officer and the four other most highly compensated executive officers, unless certain criteria for an exemption under Section 162(m) are satisfied. The 2000 Stock Incentive Plan and 2001 Stock Incentive Plan have been drafted to qualify for an exemption from the $1 million limit on deductions under Section 162(m) with respect to nonstatutory stock option grants under the plans.

# CORPORATE GOVERNANCE CHARACTERISTICS OF FIRMS THAT ISSUE PREFERRED STOCK

John S. Howe and Hongbok Lee

## ABSTRACT

*We examine three corporate governance characteristics of preferred stock issuers relative to non-issuers: managerial equity ownership, board size, and block shareholder ownership. We find that the preferred issuers have significantly lower managerial equity ownership than their controls. The finding is consistent with our expectation that the use of preferred stock and managerial equity ownership both serve to reduce agency costs and thus, preferred issuers tend to have little incentive to resort to higher managerial ownership to lessen agency costs. Significantly larger board size for preferred issuers is evident, but we find no difference in block shareholder ownership.*

## 1. INTRODUCTION

About 20% of publicly traded firms have preferred stock in their capital structure.[1] While there are several studies that examine the motivation for preferred stock issuance and firm characteristics of preferred stock issuers, there are no studies of preferred stock issuers' characteristics from the perspective of corporate governance. In this study we examine the corporate governance characteristics of the firms that issue preferred stock. Specifically, we compare preferred stock

**Corporate Governance**
**Advances in Financial Economics, Volume 9, 29–53**

**ISSN: 1569-3732/doi:10.1016/S1569-3732(04)09002-4**

issuers with non-issuers in three important dimensions of corporate governance: Managerial ownership, board size, and block shareholder ownership.

Why do firms use both debt and preferred stock in the circumstances where preferred stock has no tax benefit for the dividends paid? Jensen and Meckling (1976) state that preferred stock has lower agency costs:

> If preferred stock has all the characteristics of debt except for the fact that its holders cannot put the firm into bankruptcy in the event of nonpayment of the preferred dividends, then the agency costs associated with the issuance of preferred stock will be lower than those associated with debt by the present value of the bankruptcy costs (p. 342).

Another motivation for preferred stock issuance focuses on the tax incentive for the preferred dividend received by corporate investors. Fooladi and Roberts (1986) present a theoretical framework in which preferred stock is supplied and demanded based on the tax incentive for preferred stock.[2] The corporate dividend exclusion for corporate investors motivates firms with low tax rates to issue preferred stock to corporate investors with high tax rates who benefit from a higher after-tax yield. Houston and Houston (1990) investigate changes in the behavior on the supply side of preferred stock during 1980s and empirically test the tax hypothesis for preferred stock finding strong support for the tax hypothesis suggested in Fooladi and Roberts (1986). Recent work that studies the use of preferred stock as a financing tool in relation to tax rates and profitability of the preferred issuer is Ravid et al. (2001).

Lee and Figlewicz (1999) examine the characteristics of firms that issue convertible preferred stock versus firms that issue convertible debt. They find that convertible preferred stock is issued by firms that are weak in their ability to cover interest payments and too weak in profitability to take advantage of the direct tax benefits arising from additional debt financing. Further, firms that issue convertible preferred stock have higher debt ratios, and higher bankruptcy and operating risks than convertible debt issuing firms. In terms of tax rates, convertible preferred stock issuing firms have lower average and marginal tax rates. Convertible debt tends to be issued by firms with larger free cash flow and greater growth potential.

In contrast with the extant literature, we investigate the characteristics of preferred stock issuing firms from the perspective of corporate governance. A positive relation between managerial ownership and corporate value (McConnell & Servaes, 1990; Morck et al., 1988) and lower agency costs associated with the preferred stock issuance (Jensen & Meckling, 1976) lead us to predict lower managerial ownership by preferred stock issuing firms than by non-issuing firms. As far as the board size is concerned we expect a bigger board size for the preferred issuers than for non-issuers based on the inverse relationship between board size and performance of a firm (Jensen, 1993; Yermack, 1996) and the weak profitability of preferred stock issuers documented by Lee and

Figlewicz (1999) and Ravid et al. (2001). When we note common nature between preferred stock and debt (fixed cash flow streams for the holder) and a positive relationship between leverage ratio and block shareholder ownership (Friend & Lang, 1988; Mehran, 1992), we conjecture a higher fraction of equity held by block shareholders for preferred issuers compared with non-issuers.

We use three matching schemes to compare the corporate governance variables for the preferred issuers with those for control firms. Matching scheme (i) uses the criteria of industry and size. Matching design (ii) employs the criteria of industry, size, and book-to-market ratio. Matching method (iii) utilizes the criteria of industry, size, and leverage ratio.

We find a consistently significant difference in the managerial ownership between preferred issuers and their matching firms. In all three matching designs the preferred issuers have significantly lower equity ownership by management than their peers. The finding is consistent with our expectation that the use of preferred stock and managerial equity ownership both serve to reduce agency costs and thus that corporations that use preferred stock tend to have little incentive to resort to higher managerial ownership to lessen agency costs. Therefore the use of preferreds tends to lead to lower managerial ownership.

Board size also shows a consistently significant difference between the preferred issuers and their control firms regardless of the matching scheme. As we conjecture, preferred issuers have larger boards than their peers. Since the difference in board size between the preferred issuers and control firms is small (one or two depending on the matching design) we are reluctant to argue that the difference is economically significant.

Equity ownership by block shareholders shows a significant difference between the issuers and controls for two matching schemes, (ii) and (iii), but it fails to show a significant difference in the matching design (i) by industry and size. In our analysis of the block shareholder ownership by industry, financial firms and utility firms exhibit consistently significant differences for the three matching schemes.

The rest of the paper proceeds as follows. Section 2 develops hypotheses. Data and research methodology are presented in Section 3. Section 4 presents empirical findings about distinctive corporate governance characteristics of the preferred stock issuers. Section 5 summarizes and concludes.

## 2. HYPOTHESIS DEVELOPMENT

We test the following hypotheses.

**Hypothesis 1** (*Managerial ownership and issuance of preferred stock*). In Jensen and Meckling (1976), as soon as the owner-manager gives up some fraction of equity claims to outside shareholders, agency costs are engendered.

> If the owner-manager sells equity claims on the corporation which are identical to his (i.e. share proportionately in the profits of the firm and have limited liability) agency costs will be generated by the divergence between his interest and those of the outside shareholders, since he will then bear only a fraction of the costs of any non-pecuniary benefits he takes out in maximizing his own utility (p. 312).

Their agency cost theory indicates that the costs of deviation from value-maximization decrease as managerial equity ownership increases.

A significant relationship between managerial ownership and corporate value is well recognized in the extant research. Morck et al. (1988) report a significant nonmonotonic relationship between management ownership and Tobin's Q, where Tobin's Q first rises, then declines, and finally rises as ownership by the board of directors rises. McConnell and Servaes (1990) document a significant curvilinear relation between Tobin's Q and managerial ownership. Jensen and Murphy (1990) argue that "the most powerful link between shareholder wealth and executive wealth is direct ownership of shares by the CEO" (p. 141).

According to Jensen and Meckling (1976) the issuance of preferred stock entails lower agency costs compared to the use of debt. The literature indicates that equity ownership by management and the use of preferred stock both serve to reduce agency costs. Preferred stock issuance may be utilized to allow lower managerial equity ownership for the firms that attempt to reduce agency costs. *Our first hypothesis is: firms that use preferred stock will have lower managerial ownership*.

**Hypothesis 2** (*Board size and use of preferred stock*). Yermack (1996) documents an inverse relationship between the size of the board of directors and operating performance of a firm (measured as ROA, return on sales, and sales to assets ratio).[3] In terms of the effectiveness of the functioning of a board, Jensen (1993) argues that the board performance can be improved with a small board. Lipton and Lorsch (1992) also favor a small board.[4] According to previous studies on the characteristics of preferred issuers, preferred stock issuing firms tend to be weak in profitability (Lee & Figlewicz, 1999; Ravid et al., 2001).

Those studies suggest that preferred stock issuance is related to the low profitability of an issuer, and the low profitability is in turn associated with a bigger board size. Thus, we expect that there exists a difference in the size of board of directors between preferred stock issuers and non-issuers. *Our second hypothesis is: preferred stock issuers have bigger board sizes than non-issuers.*

**Hypothesis 3** (*Block shareholders and use of preferred stock*). Mehran (1992) reports a positive relationship between a firm's leverage ratio (measured by short-term debt plus long-term debt divided by the book value of assets) and the percentage of ownership by the largest individual shareholder. Friend and Lang (1988) also document that corporations with nonmanagerial principal

stockholders have higher average debt-to-asset ratios than those without non-managerial principal stockholders. Since preferred stock shares with debt the features of fixed cash flow stream and seniority to common stock, preferred stock issuance may be viewed as contributing to an increase in leverage. Therefore, we would expect a difference in the percentage of shares held by block shareholders between preferred issuers and non-issuers given issuers and non-issuers have the same debt ratios. *Our third hypothesis is: preferred issuers will have a higher fraction of equity held by block shareholders compared with non-issuers*.

## 3. DATA AND METHODS

### *3.1. Data*

We use the Compact Disclosure New Issues database (1996) to identify firms that issue preferred stock over the period 1991–2000.[5] We initially find 1376 preferred stock issues with the date of the final prospectus in the Compact Disclosure New Issues database. With 1376 issues we search the Compact Disclosure SEC database using the "Disclosure company number" to find a CUSIP number for each preferred issuer.[6] Eight hundred fifty nine issues have CUSIP numbers on the Compact Disclosure SEC database.

We use the CUSIP numbers from the Compact Disclosure SEC database to screen for issuing firms that appear on the Standard and Poor's COMPUSTAT database and the University of Chicago Center for Research in Security Prices (CRSP) database. We eliminate 273 issues for which data on COMPUSTAT and CRSP are not available. The remaining 586 issues constitute the final sample. Dividend rates are an important factor for segmenting the sample into distinct subsamples. For preferred issues in the Compact Disclosure New Issues database with missing or obscure descriptions of dividend rates, we use Moody's manuals (Bank & Finance, Public Utility, and Industrial, 1991) to identify the dividend rates.

Table 1 reports the annual distribution of preferred stock issues over the period 1991–2000. Panel A shows preferred stock issues by types of preferreds for each year over the sample period. Following Linn and Pinegar (1988), we categorize preferred stock types into three types: straight with fixed dividends, convertible with fixed dividends, and adjustable-rate (variable) dividends.[7] Straight preferreds with fixed dividends constitute 55% of the sample, and convertible preferreds with fixed dividends and adjustable-rate preferreds account for 40 and 5%, respectively. Linn and Pinegar (1988) report similar proportion

***Table 1.*** Annual Distribution of Preferred Stock Issues over the Period 1991–2000.

Panel A: Annual Distribution of Preferred Stock Issues by Type of Preferreds

| | Type of Preferred Stock Issued | | | |
|---|---|---|---|---|
| Year | Straight with Fixed Dividends | Convertible with Fixed Dividends | Adjustable-Rate (Variable) Dividends | Number of Issues |
| 1991 | 33 | 28 | 3 | 64 |
| 1992 | 67 | 39 | 1 | 107 |
| 1993 | 72 | 48 | 3 | 123 |
| 1994 | 19 | 24 | 4 | 47 |
| 1995 | 12 | 12 | 1 | 25 |
| 1996 | 16 | 19 | 7 | 42 |
| 1997 | 20 | 15 | 2 | 37 |
| 1998 | 39 | 20 | 5 | 64 |
| 1999 | 28 | 18 | 0 | 46 |
| 2000 | 16 | 14 | 1 | 31 |
| Total (%) | 322 (55) | 237 (40) | 27 (5) | 586 (100) |

Panel B: Preferred Stock Issues by Industry and Type of Preferreds

| | Type of Preferred Stock Issued | | | |
|---|---|---|---|---|
| Industry | Straight with Fixed Dividends | Convertible with Fixed Dividends | Adjustable-Rate (Variable) Dividends | Total (%) |
| Financials | 144 | 64 | 24 | 232 (40%) |
| Industrials | 48 | 167 | 0 | 215 (37%) |
| Utilities | 130 | 6 | 3 | 139 (24%) |
| Total (%) | 322 (55) | 237 (40) | 27 (5) | 586 (100) |

*Note:* Panel A reports annual preferred stock issues during the period 1991–2000 by type of preferreds. Preferred shares are categorized into three types following Linn and Pinegar (1988): straight with fixed dividends, convertible with fixed dividends, and adjustable-rate (variable) dividends. Convertible preferred issues with fixed dividends include 34 convertible exchangeable preferred stocks and 35 mandatory convertible preferred issues. Adjustable-rate dividend preferred issues are variable/floating, adjustable/reset, auction, and fixed/adjustable dividend preferred issues.
Panel B shows preferred stock issues by industry and type of preferreds. Preferred issuers are categorized into three industries following Houston and Houston (1990): financials, industrials, and utilities. Financials are issuers with SIC codes 6000–6499 and 6700–6799. Utilities are issuers with SIC codes between 4900–4999. This group includes electric, gas, and sanitary services. All other issuers including transportation services (SIC codes 4700–4799), communications (SIC codes 4800–4899), and real estates (SIC codes 6500–6599), are classified as industrials.

in their total sample for different types of preferred issues during the period 1963–1984.[8] In our sample, preferred stock issuance was most active in 1993 with 123 issues followed by 1992 with 107 issues. 1995 shows the most languid period of preferred stock issuance, with only 25 issues.

Panel B categorizes the total sample by industry and type of issue. Following Houston and Houston (1990) we categorize preferred stock issuers into three industry groups: financials, industrials, and utilities. Financials are issuers with Standard Industry Classification (SIC) codes 6000–6499 and 6700–6799. Utilities are issuers with SIC codes 4900–4999. This group includes electric, gas, and sanitary services. All other issuers including transportation services (SIC codes 4700–4799), communications (SIC codes 4800–4899), and real estates (SIC codes 6500–6599) are classified as industrials.

In our sample financials are the most frequent issuers (40% of the sample), followed by industrials (37%) and utilities (24%). Eighty-nine percent (24 of 27) of adjustable-rate preferreds were issued by financials. Seventy percent (167 of 237) of the convertible fixed-rate preferreds were issued by industrials, and these constituted 78% (167 of 215) of the preferred shares issued by industrials. Financials and utilities issued 45% (144 of 322) and 40% (130 of 322) of the straight fixed-rate preferreds, respectively, and these constituted 62% (144 of 232) of all financial firm issues and 94% (130 of 139) of all utility issues.

Table 2 reports descriptive statistics for selected characteristics of the preferred stock issues, categorized by the type of preferred stock and by the industry of issuers. The mean issue size for the total sample is $170 million, with a low of $146 million for the adjustable-rate preferreds and a high of $188 million for the convertible fixed-rate preferreds. When measured as the ratio of the issue size to the market value of equity, the mean relative issue sizes of 0.09, 0.32, 0.09, and 0.18 for the straight fixed-rate, convertible fixed-rate, adjustable-rate preferreds, and the total sample, respectively, are comparable to 0.12, 0.29, 0.15, and 0.16 from Linn and Pinegar (1988). The mean firm size ($2.2 billion) of the issuers of convertible fix-rate preferreds is less than half the size of straight fixed-rate preferred issuers ($5.8 billion) and the size of adjustable-rate preferred issuers ($6.8 billion). Also convertible fix-rate preferred issuers show much smaller total assets and sales than straight fixed-rate preferred issuers and adjustable-rate preferred issuers.

Profitability measured as net income differs substantially between the issuers of different types of preferreds. Convertible fixed-rate preferred issuers exhibit a negative average net income (−$28 million) though the median is positive ($1 million). The issuers of straight fixed-rate and adjustable-rate preferreds show substantially high mean (median) net income with $332 million ($208 million) and $548 million ($474 million), respectively. The negative mean net income for

***Table 2.*** Descriptive Statistics for Preferred Issuers over the Period 1991–2000.

| Item | Type of Preferreds | | | |
|---|---|---|---|---|
| | Straight with Fixed Dividends | Convertible with Fixed Dividends | Adjustable-Rate (Variable) Dividends | Total |
| Panel A: Total sample | | | | |
| (i) Sample size | 322 | 237 | 27 | 586 |
| (ii) Issue size ($ millions) | 159 | 188 | 146 | 170 |
| (iii) Market value of equity ($ millions) | 5,794 | 2,193 | 6,797 | 4,391 |
| (iv) Relative issue size | 0.09 | 0.32 | 0.09 | 0.18 |
| (v) Total assets ($ millions) | 34,845 | 9,211 | 52,733 | 25,549 |
| (vi) Sales ($ millions) | 6,566 | 3,822 | 5,113 | 5,415 |
| (vii) Net income ($ millions), Mean | 332 | −28 | 548 | 200 |
| Net income ($ millions), Median | 208 | 1 | 474 | 67 |
| Panel B: Financials | | | | |
| (i) Sample size | 144 | 64 | 24 | 232 |
| (ii) Issue size ($ millions) | 166 | 89 | 159 | 144 |
| (iii) Market value of equity ($ millions) | 7,135 | 1,196 | 7,494 | 5,513 |
| (iv) Relative issue size | 0.12 | 0.21 | 0.09 | 0.14 |
| (v) Total assets ($ millions) | 62,188 | 16,411 | 58,990 | 50,448 |
| (vi) Sales ($ millions) | 6,705 | 1,764 | 5,660 | 5,377 |
| (vii) Net income ($ millions), Mean | 544 | 107 | 604 | 442 |
| Net income ($ millions), Median | 248 | 49 | 605 | 166 |
| Panel C: Industrials | | | | |
| (i) Sample size | 48 | 167 | 0 | 215 |
| (ii) Issue size ($ millions) | 320 | 224 | – | 246 |
| (iii) Market value of equity ($ millions) | 5,812 | 2,422 | – | 3,193 |
| (iv) Relative issue size | 0.18 | 0.37 | – | 0.33 |
| (v) Total assets ($ millions) | 23,343 | 6,827 | – | 10,531 |
| (vi) Sales ($ millions) | 14,644 | 4,544 | – | 6,809 |
| (vii) Net income ($ millions), Mean | −238 | −80 | – | −116 |
| Net income ($ millions), Median | 6 | −7 | – | −5 |
| Panel D: Utilities | | | | |
| (i) Sample size | 130 | 6 | 3 | 139 |
| (ii) Issue size ($ millions) | 92 | 281 | 42 | 99 |
| (iii) Market value of equity ($ millions) | 4,333 | 6,590 | 1,214 | 4,363 |
| (iv) Relative issue size | 0.04 | 0.09 | 0.04 | 0.04 |
| (v) Total assets ($ millions) | 9,224 | 9,191 | 2,680 | 9,081 |
| (vi) Sales ($ millions) | 3,431 | 2,366 | 913 | 3,330 |
| (vii) Net income ($ millions), Mean | 311 | 188 | 97 | 301 |
| Net income ($ millions), Median | 268 | 207 | 69 | 264 |

*Note:* The table describes (relative) issue size and financial characteristics of issuing firms prior to the offering. The statistics reported are the means for line items (i) up to (vi). Both mean and median values are provided for net income on line item (vii). Issue size is the offering value of preferred stock as shown on the Compact Disclosure New Issues Database. Market value of equity is the product of the closing price at fiscal year end (COMPUSTAT annual data item 199) prior to the issue date and common shares outstanding at fiscal year end (COMPUSTAT annual data item 25) prior to the issue date. Relative issue size is the ratio of the issue size to the market value of equity. Total assets and sales are the values of COMPUSTAT annual data item 6 and 12, respectively, at the fiscal year end prior to the issue date. Net income is the fiscal period income or loss (COMPUSTAT annual data item 172) prior to the issue date.

the convertible fixed-rate preferred issuers is mainly attributable to the industrial convertible preferred issuers that show an average net income of −$80 million. Industry comparisons show that industrial firms are the largest in terms of mean issue size and mean relative issue size while utility firms are the smallest. Financial firms are the biggest as measured by mean total assets and mean net income while industrial firms show the smallest net income and utility firms show the smallest total assets.

We collect corporate governance data from the Compact Disclosure SEC database. From this database we collect data for the number of common shares owned by officers and directors, the number of common stocks outstanding, the directors on the board, and the percentage of ownership by shareholders who own 5% or more of common stock.[9] With these data we compute managerial ownership as the number of common shares owned by officers and directors divided by the number of common shares outstanding. Board size is measured by counting the number of directors on the board. Block shareholder ownership is the percentage of ownership by shareholders who own 5% or more of common stock. We use Moody's manuals (1991) to supplement the corporate governance data. Tables 4–6 present statistical analyses of corporate governance characteristics of preferred issuers and matching firms by industry and type of preferreds for various matching methodologies. To avoid the influence of extreme observations on the analyses of corporate governance variables, we report median values.

### *3.2. Matching Firms*

To assess whether preferred issuers have unusual corporate governance characteristics we need to specify a benchmark, or the corporate governance characteristics we expect in the absence of the use of preferred stock. We compare corporate governance characteristics of preferred issuers with those of control firms selected by various matching schemes. The criteria of three matching designs that are detailed below are: (i) industry and size; (ii) industry, size, and book-to-market ratio; and (iii) industry, size, and leverage ratio.

Following Loughran and Ritter (1995) we use market capitalization as the main criterion for selecting control firms. The rationale for the use of firm size, or market capitalization, is that corporate governance structure, especially board size, can be affected by the firm size. Yermack (1996), in his study of the relationship between board size and firm value, controls for firm size and industry. Before applying the market capitalization criterion we first segment sample firms into three industry categories, financials (SIC codes 6000–6499 and 6700–6799),

utilities (SIC codes between 4900–4999), and industrials (all others), following Houston and Houston (1990).

For each issuing firm a non-issuer of preferred stock from the same industry is matched.[10] From the universe of firms that have not shown preferred stock (COMPUSTAT annual data item 130) in their capital structure for five fiscal years prior to the issue date of preferred issuers, the firm with the market capitalization that is closest to that of the issuing firm is selected as a matching firm. We use end-of-month market capitalization data from CRSP in the process of matching. Table 4 report corporate governance characteristics of preferred issuers and their control firms that were selected from the criteria of industry and size (matching scheme (i)).

To check the influence of different matching designs on the significance of difference in the corporate governance characteristics between issuers and non-issuers we employ another matching methodology that follows Spiess and Affleck-Graves (1995, 1999). They use the criteria of trading system (NYSE/Amex or Nasdaq), size, and book-to-market ratio. Our matching firms are chosen on the basis of industry category, size, and book-to-market ratio. As in Spiess and Affleck-Graves (1995, 1999), size is measured by market capitalization and book-to-market ratio is computed as book value of equity (COMPUSTAT annual data item 60) divided by market value of equity (= fiscal year end common shares outstanding (COMPUSTAT annual data item 25) × fiscal year end closing common stock price (COMPUSTAT annual data item 199)).

Candidates for matching firms are those that have not shown preferred stock (COMPUSTAT annual data item 130) in their capital structure for five fiscal years preceding the issue date of preferred issuers. For each preferred stock issuer, a matching firm is selected such that the sum of absolute percentage difference in the sizes and book-to-market ratios between the preferred issuer and the matching firm is minimized. Table 5 analyzes corporate governance variables for preferred issuers and non-issuers using industry, size, and book-to-market criteria (matching scheme (ii)).

To further check the robustness of the results of the analysis, we employ another peer matching scheme using leverage ratios. In Masulis (1983), preferred stock is viewed as a partial substitute for debt in the sense that repurchasing equity and increasing the proportion of preferred shares in the capital structure has less impact on the stock price than retiring equity in order to increase debt. In Ravid et al. (2001), the percentage of preferred stock in the capital structure decreases as the tax rates increases. This finding suggests that debt and preferred stocks are substitutes. Therefore, to examine the corporate governance characteristics of preferred stock issuing firms by comparing those of non-issuing firms, it may be necessary to control for debt levels.

From the pool of firms without preferred stock in their capital structure for five fiscal years prior to the issue date of preferred issuers, firms in the same industry with the market capitalization between 50 and 200% of the issuer are ranked by their leverage ratios. Leverage ratio is measured by the sum of the long-term debt (COMPUSTAT annual data item 9) and current debt (item 34) divided by the market value of equity (item 25 × item 199). The firm with the closest leverage ratio to that of the preferred stock issuer is selected as the matching firm. Table 6 uses the criteria of industry, size, and leverage ratio to compare corporate governance characteristics between preferred issuers and non-issuers (matching scheme (iii)).

### *3.3. Tests of Difference in Corporate Governance Characteristics*

Nonparametric Wilcoxon rank sum tests are conducted to test the hypothesis that the probability distributions of corporate governance variables associated with the preferred issuers and non-issuers are equivalent. The *Z*-statistics are computed as follows:[11]

$$Z = \frac{W_+ - E(W_+)}{\sqrt{\text{Var}(W_+)}}$$

$$E(W_+) = \frac{n_1(n_1 + n_2 + 1)}{2}$$

$$\text{Var}(W_+) = \frac{n_1 n_2(n_1 + n_2 + 1)}{12}$$

where $n_1$: the sample size of preferred issuers, $n_2$: the sample size of matching firms, $W_+$: the rank sum for preferred issuers.

## 4. RESULTS AND INTERPRETATION

Table 3 provides summaries of the analysis results contained in the subsequent Tables 4–6. Median values of corporate governance variables are reported in all tables. In Table 3 we find a consistently significant difference in the managerial ownership and board size between the total sample of preferred issuers and their control firms for all three matching designs. Equity ownership by management of the preferred issuers is significantly lower than that of their peers. Preferred issuers show a significantly larger board size relative to their controls. The difference in block shareholder ownership between the total sample of preferred issuers and their matching firms does not survive the robustness checks of alternative matching schemes.

***Table 3.*** Summary of Analyses of Corporate Governance Characteristics by Industry and Type of Preferreds (Summary of Tables 4–6).

| Matching Scheme | Managerial Ownership (Issuer and Control (%)) | Board Size (Issuer and Control) | Block Shareholder Ownership (Issuer and Control (%)) |
|---|---|---|---|
| Panel A: Total sample | | | |
| (i) | 2.37 < 3.22*** | 12.00 > 11.00*** | |
| (ii) | 2.46 < 2.81* | 12.00 > 11.00*** | 17.85 > 12.17** |
| (iii) | 2.43 < 3.57*** | 12.00 > 10.00*** | 17.49 > 14.84* |
| Panel B: Financials | | | |
| Financials total | | | |
| (i) | | 13.00 > 12.00*** | 18.88 > 10.58** |
| (ii) | | | 19.71 > 10.27*** |
| (iii) | | 13.00 > 11.00*** | 19.52 > 12.63* |
| Straight with fixed dividends | | | |
| (i) | | 14.00 > 12.00*** | 20.50 > 10.75*** |
| (ii) | | 14.00 > 12.00** | 20.52 > 11.69*** |
| (iii) | 2.50 < 4.55** | 14.00 > 10.50*** | 20.52 > 14.84* |
| Adjustable-rate dividends | | | |
| (i) | | | 22.06 > 7.00** |
| (ii) | | | 23.38 > 7.07** |
| (iii) | | | 23.38 > 7.07** |
| Panel C: Industrials (Insignificant for any types of preferreds by any matching designs) | | | |
| Panel D: Utilities | | | |
| Utilities total | | | |
| (i) | 0.18 < 1.92*** | 12.00 > 11.00* | 6.34 > 0.00* |
| (ii) | 0.19 < 0.56*** | 12.00 > 10.00*** | 5.59 > 0.00*** |
| (iii) | 0.19 < 1.92*** | 12.00 > 11.00*** | 5.24 > 0.00*** |
| Straight with fixed dividends | | | |
| (i) | 0.17 < 1.89*** | 13.00 > 11.00* | |
| (ii) | 0.17 < 0.47*** | 13.00 > 10.00*** | 5.87 > 0.00*** |
| (iii) | 0.19 < 1.78*** | 12.00 > 11.00*** | 5.28 > 0.00*** |

*Note:* The table provides a summary of the following Tables 4–6 for the analyses of corporate governance characteristics of preferred issuer and their matching firm by industry and type of preferreds with various matching schemes. Matching scheme (i) uses the criteria of industry and size, in which the size of the control firm is closest to that of the preferred issuer. In matching scheme (ii) a preferred issuer is matched to a control firm by industry, size and book-to-market ratio. Matching scheme (iii) represents the matching design by industry, size, and leverage ratio. The values on the left-hand side of the inequality are the medians for the preferred issuers of a particular corporate governance variable and the right-hand side values are the medians for the control firms. The asterisks *, **, and *** in the parentheses indicate significance of difference in the probability distributions between preferred issuers and matching firms at the 10, 5, and 1% level, respectively, using a two-tailed Wilcoxon rank sum test. Insignificant items are left as blank and insignificant types of preferreds for any matching designs are not illustrated.

***Table 4.*** Analysis of Corporate Governance Characteristics of Preferred Issuers and their Matching Firms by Industry and Type of Preferreds (Matching Criteria (i): Industry and Size).

| | Managerial Ownership (%) | Board Size | Block Shareholder Ownership (%) |
|---|---|---|---|
| Panel A: Total sample | | | |
| Preferred issuers | 2.37 ($N = 412$) | 12.00 ($N = 495$) | 16.99 ($N = 426$) |
| Matching firms | 3.22 ($N = 457$) | 11.00 ($N = 505$) | 13.50 ($N = 432$) |
| *Z*-Statistic | $-3.34^{***}$ | $3.20^{***}$ | 1.12 |
| *p*-Value | 0.0008 | 0.0014 | 0.2632 |
| Panel B: Financials | | | |
| Financials total | | | |
| Preferred issuers | 3.26 ($N = 170$) | 13.00 ($N = 199$) | 18.88 ($N = 184$) |
| Matching firms | 4.88 ($N = 184$) | 12.00 ($N = 204$) | 10.58 ($N = 176$) |
| *Z*-Statistic | $-0.91$ | $2.92^{***}$ | $-2.42^{**}$ |
| *p*-Value | 0.3622 | 0.0035 | 0.0155 |
| Straight with fixed dividends | | | |
| Preferred issuers | 2.63 ($N = 103$) | 14.00 ($N = 125$) | 20.50 ($N = 119$) |
| Matching firms | 3.91 ($N = 118$) | 12.00 ($N = 131$) | 10.75 ($N = 116$) |
| *Z*-Statistic | $-0.48$ | $3.33^{***}$ | $-3.04^{***}$ |
| *p*-Value | 0.6344 | 0.0009 | 0.0024 |
| Convertible with fixed dividends | | | |
| Preferred issuers | 9.50 ($N = 45$) | 12.00 ($N = 50$) | 11.72 ($N = 44$) |
| Matching firms | 16.14 ($N = 46$) | 11.00 ($N = 49$) | 15.26 ($N = 42$) |
| *Z*-Statistic | $-1.64$ | 0.15 | 1.35 |
| *p*-Value | 0.1012 | 0.8773 | 0.1759 |
| Adjustable-rate dividends | | | |
| Preferred issuers | 2.60 ($N = 22$) | 13.50 ($N = 24$) | 22.06 ($N = 21$) |
| Matching firms | 2.52 ($N = 20$) | 14.00 ($N = 24$) | 7.00 ($N = 18$) |
| *Z*-Statistic | $-0.21$ | 1.27 | $-2.25^{**}$ |
| *p*-Value | 0.8305 | 0.2037 | 0.0248 |
| Panel C: Industrials | | | |
| Industrials total | | | |
| Preferred issuers | 6.20 ($N = 137$) | 9.00 ($N = 168$) | 30.29 ($N = 143$) |
| Matching firms | 8.31 ($N = 157$) | 8.00 ($N = 179$) | 29.75 ($N = 158$) |
| *Z*-Statistic | $-0.63$ | 1.19 | 0.12 |
| *p*-Value | 0.5306 | 0.2359 | 0.9054 |
| Straight with fixed dividends | | | |
| Preferred issuers | 3.10 ($N = 33$) | 12.00 ($N = 42$) | 19.67 ($N = 36$) |
| Matching firms | 3.86 ($N = 38$) | 11.00 ($N = 43$) | 26.58 ($N = 37$) |
| *Z*-Statistic | 0.42 | 1.43 | $-0.58$ |
| *p*-Value | 0.6739 | 0.1532 | 0.5653 |
| Convertible with fixed dividends | | | |
| Preferred issuers | 7.55 ($N = 104$) | 8.00 ($N = 126$) | 37.13 ($N = 107$) |
| Matching firms | 10.43 ($N = 119$) | 8.00 ($N = 136$) | 33.47 ($N = 121$) |
| *Z*-Statistic | $-1.02$ | 0.59 | 0.34 |
| *p*-Value | 0.3085 | 0.5547 | 0.7335 |

***Table 4.*** (*Continued*)

| | Managerial Ownership (%) | Board Size | Block Shareholder Ownership (%) |
|---|---|---|---|
| Panel D: Utilities | | | |
| Utilities total | | | |
| Preferred issuers | 0.18 ($N = 105$) | 12.00 ($N = 128$) | 6.34 ($N = 99$) |
| Matching firms | 1.92 ($N = 116$) | 11.00 ($N = 122$) | 0.00 ($N = 98$) |
| *Z*-Statistic | $-8.18^{***}$ | $-1.66^{*}$ | $-1.68^{*}$ |
| *p*-Value | $<0.0001$ | 0.0965 | 0.0927 |
| Straight with fixed dividends | | | |
| Preferred issuers | 0.17 ($N = 97$) | 13.00 ($N = 119$) | 6.51 ($N = 92$) |
| Matching firms | 1.89 ($N = 107$) | 11.00 ($N = 113$) | 0.00 ($N = 91$) |
| *Z*-Statistic | $-8.57^{***}$ | $-1.82^{*}$ | $-1.52$ |
| *p*-Value | $<0.0001$ | 0.0685 | 0.1279 |
| Convertible with fixed dividends | | | |
| Preferred issuers | 11.87 ($N = 6$) | 9.50 ($N = 6$) | 26.75 ($N = 5$) |
| Matching firms | 2.14 ($N = 6$) | 9.00 ($N = 6$) | 0.00 ($N = 6$) |
| *Z*-Statistic | 1.20 | $-0.26$ | 1.29 |
| *p*-Value | 0.2298 | 0.7976 | 0.1956 |
| Adjustable-rate dividends | | | |
| Preferred issuers | 0.26 ($N = 2$) | 11.00 ($N = 3$) | 0.00 ($N = 2$) |
| Matching firms | 2.19 ($N = 3$) | 11.00 ($N = 3$) | 0.00 ($N = 1$) |
| *Z*-Statistic | $-1.44$ | 1.03 | 0.00 |
| *p*-Value | 0.1489 | 0.3017 | 1.0000 |

*Note:* The table reports median values for three corporate governance variables: managerial ownership, board size, and block shareholder ownership. Matching firms are chosen on the basis of industry category and size of the firm. Among those firms that have not shown preferred stock (COMPUSTAT annual data item 130) in their capital structure for 5 fiscal years prior to the issue date of preferred issuers, the firm with the market capitalization that is closest to that of the issuing firm is selected as a matching firm. Managerial ownership is defined as the number of common stock owned by officers and directors divided by the number of common stock outstanding. Board size is measured as the number of directors on the board of directors. Block shareholder ownership is defined as the percentage of ownership by shareholders who own 5% or more of common stock. Preferred issuers are categorized into three industries following Houston and Houston (1990): financials, industrials, and utilities. Financials are issuers with SIC codes 6000–6499 and 6700–6799. Utilities are issuers with SIC codes between 4900–4999. This group includes electric, gas, and sanitary services. All other issuers including transportation services (SIC codes 4700–4799), communications (SIC codes 4800–4899), and real estates (SIC codes 6500–6599), are classified as industrials. The *Z*-statistics test the hypothesis that the probability distributions associated with the preferred issuers and matching firms are equivalent using the Wilcoxon rank sum test. The asterisks *, **, and *** indicate significance of difference in the probability distributions between preferred issuers and matching firms at the 10, 5, and 1% level, respectively, using a two-tailed test.

Analysis by industry in Table 3 reveals that a significant difference in the corporate governance variables between preferred issuers and their controls is mainly driven by the financial and utility issuers. Financial and utility issuers of straight fixed-rate preferreds cause the difference in the corporate governance

***Table 5.*** Analysis of Corporate Governance Characteristics of Preferred Issuers and their Matching Firms by Industry and Type of Preferreds (Matching Criteria (ii): Industry, Size, and Book-to-Market Ratio).

| | Managerial Ownership (%) | Board Size | Block Shareholder Ownership (%) |
|---|---|---|---|
| Panel A: Total sample | | | |
| Preferred issuers | 2.46 ($N = 413$) | 12.00 ($N = 489$) | 17.85 ($N = 429$) |
| Matching firms | 2.81 ($N = 437$) | 11.00 ($N = 487$) | 12.17 ($N = 438$) |
| *Z*-Statistic | $-1.82^{*}$ | $-2.91^{***}$ | $2.52^{**}$ |
| *p*-Value | 0.0692 | 0.0036 | 0.0116 |
| Panel B: Financials | | | |
| Financials total | | | |
| Preferred issuers | 3.33 ($N = 165$) | 13.00 ($N = 191$) | 19.71 ($N = 178$) |
| Matching firms | 5.13 ($N = 172$) | 13.00 ($N = 194$) | 10.27 ($N = 172$) |
| *Z*-Statistic | 0.04 | 1.37 | $-3.47^{***}$ |
| *p*-Value | 0.9692 | 0.1712 | 0.0005 |
| Straight with fixed dividends | | | |
| Preferred issuers | 2.66 ($N = 102$) | 14.00 ($N = 122$) | 20.52 ($N = 115$) |
| Matching firms | 4.91 ($N = 109$) | 12.00 ($N = 126$) | 11.69 ($N = 114$) |
| *Z*-Statistic | $-0.35$ | $2.02^{**}$ | $-3.35^{***}$ |
| *p*-Value | 0.7274 | 0.0433 | 0.0008 |
| Convertible with fixed dividends | | | |
| Preferred issuers | 7.41 ($N = 42$) | 12.00 ($N = 46$) | 13.19 ($N = 43$) |
| Matching firms | 6.93 ($N = 47$) | 12.00 ($N = 48$) | 10.05 ($N = 41$) |
| *Z*-Statistic | 0.59 | $-0.66$ | $-0.23$ |
| *p*-Value | 0.5568 | 0.5118 | 0.8183 |
| Adjustable-rate dividends | | | |
| Preferred issuers | 2.43 ($N = 21$) | 13.00 ($N = 23$) | 23.38 ($N = 20$) |
| Matching firms | 2.22 ($N = 16$) | 14.50 ($N = 20$) | 7.07 ($N = 17$) |
| *Z*-Statistic | $-0.84$ | $-0.17$ | $-2.07^{**}$ |
| *p*-Value | 0.3990 | 0.8642 | 0.0382 |
| Panel C: Industrials | | | |
| Industrials total | | | |
| Preferred issuers | 6.14 ($N = 143$) | 9.00 ($N = 174$) | 36.38 ($N = 153$) |
| Matching firms | 7.86 ($N = 155$) | 9.00 ($N = 179$) | 32.68 ($N = 167$) |
| *Z*-Statistic | $-0.65$ | 0.67 | 0.11 |
| *p*-Value | 0.5166 | 0.5014 | 0.9122 |
| Straight with fixed dividends | | | |
| Preferred issuers | 3.08 ($N = 32$) | 12.00 ($N = 41$) | 18.61 ($N = 35$) |
| Matching firms | 5.71 ($N = 39$) | 11.00 ($N = 40$) | 21.47 ($N = 35$) |
| *Z*-Statistic | $-0.27$ | $-1.15$ | $-1.20$ |
| *p*-Value | 0.7859 | 0.2511 | 0.2302 |
| Convertible with fixed dividends | | | |
| Preferred issuers | 7.35 ($N = 111$) | 8.00 ($N = 133$) | 39.06 ($N = 118$) |
| Matching firms | 9.14 ($N = 116$) | 9.00 ($N = 139$) | 33.77 ($N = 132$) |
| *Z*-Statistic | $-0.64$ | 0.52 | 0.74 |
| *p*-Value | 0.5209 | 0.6054 | 0.4604 |

***Table 5.*** (*Continued*)

| | Managerial Ownership (%) | Board Size | Block Shareholder Ownership (%) |
|---|---|---|---|
| Panel D: Utilities | | | |
| Utilities total | | | |
| Preferred issuers | 0.19 ($N = 105$) | 12.00 ($N = 124$) | 5.59 ($N = 98$) |
| Matching firms | 0.56 ($N = 110$) | 10.00 ($N = 114$) | 0.00 ($N = 99$) |
| *Z*-Statistic | $-5.85^{***}$ | $-4.13^{***}$ | $3.81^{***}$ |
| *p*-Value | <0.0001 | <0.0001 | 0.0001 |
| Straight with fixed dividends | | | |
| Preferred issuers | 0.17 ($N = 97$) | 13.00 ($N = 115$) | 5.87 ($N = 91$) |
| Matching firms | 0.47 ($N = 101$) | 10.00 ($N = 105$) | 0.00 ($N = 92$) |
| *Z*-Statistic | $-6.13^{***}$ | $-4.28^{***}$ | $4.16^{***}$ |
| *p*-Value | <0.0001 | <0.0001 | <0.0001 |
| Convertible with fixed dividends | | | |
| Preferred issuers | 11.87 ($N = 6$) | 9.50 ($N = 6$) | 26.75 ($N = 5$) |
| Matching firms | 2.62 ($N = 6$) | 10.00 ($N = 6$) | 15.36 ($N = 6$) |
| *Z*-Statistic | 0.88 | −0.33 | 0.28 |
| *p*-Value | 0.3785 | 0.7440 | 0.7792 |
| Adjustable-rate dividends | | | |
| Preferred issuers | 0.26 ($N = 2$) | 11.00 ($N = 3$) | 0.00 ($N = 2$) |
| Matching firms | 1.92 ($N = 3$) | 9.00 ($N = 3$) | 0.00 ($N = 1$) |
| *Z*-Statistic | −1.44 | 1.39 | 0.00 |
| *p*-Value | 0.1489 | 0.1642 | 1.0000 |

*Note:* The table reports median values for three corporate governance variables: managerial ownership, board size, and block shareholder ownership. Matching firms are chosen by the criteria of industry category, size, and book-to-market ratio. Candidates for matching firms are those that have not shown preferred stock (COMPUSTAT annual data item 130) in their capital structure for five fiscal years prior to the issue date of preferred issuers. For each preferred stock issuer, a matching firm is selected such that the sum of absolute percentage difference in the sizes and book-to-market ratios between the preferred issuing firm and the matching firm is minimized. Managerial ownership is defined as the number of common stock owned by officers and directors divided by the number of common stock outstanding. Board size is measured as the number of directors on the board of directors. Block shareholder ownership is defined as the percentage of ownership by shareholders who own 5% or more of common stock. Preferred issuers are categorized into three industries following Houston and Houston (1990): financials, industrials, and utilities. Financials are issuers with SIC codes 6000–6499 and 6700–6799. Utilities are issuers with SIC codes between 4900–4999. This group includes electric, gas, and sanitary services. All other issuers including transportation services (SIC codes 4700–4799), communications (SIC codes 4800–4899), and real estates (SIC codes 6500–6599), are classified as industrials. The *Z*-statistics test the hypothesis that the probability distributions associated with the preferred issuers and matching firms are equivalent using the Wilcoxon rank sum test. The asterisks $^{*}$, $^{**}$, and $^{***}$ indicate the significance of difference in the probability distributions between preferred issuers and matching firms at the 10, 5, and 1% level, respectively, using a two-tailed test.

***Table 6.*** Analysis of Corporate Governance Characteristics of Preferred Issuers and Matching Firms by Industry and Type of Preferreds (Matching Criteria (iii): Industry, Size, and Leverage Ratio).

| | Managerial Ownership (%) | Board Size | Block Shareholder Ownership (%) |
|---|---|---|---|
| Panel A: Total sample | | | |
| Preferred issuers | 2.43 ($N = 417$) | 12.00 ($N = 500$) | 17.49 ($N = 433$) |
| Matching firms | 3.57 ($N = 455$) | 10.00 ($N = 506$) | 14.84 ($N = 447$) |
| *Z*-Statistic | $-2.70^{***}$ | $3.82^{***}$ | $1.67^{*}$ |
| *p*-Value | 0.0069 | 0.0001 | 0.0944 |
| Panel B: Financials | | | |
| Financials total | | | |
| Preferred issuers | 3.14 ($N = 176$) | 13.00 ($N = 203$) | 19.52 ($N = 188$) |
| Matching firms | 4.34 ($N = 187$) | 11.00 ($N = 208$) | 12.63 ($N = 181$) |
| *Z*-Statistic | $-1.34$ | $4.01^{***}$ | $-1.65^{*}$ |
| *p*-Value | 0.1807 | <0.0001 | 0.0984 |
| Straight with fixed dividends | | | |
| Preferred issuers | 2.50 ($N = 108$) | 14.00 ($N = 129$) | 20.52 ($N = 123$) |
| Matching firms | 4.55 ($N = 122$) | 10.50 ($N = 134$) | 14.84 ($N = 116$) |
| *Z*-Statistic | $-2.08^{**}$ | $4.78^{***}$ | $-1.92^{*}$ |
| *p*-Value | 0.0379 | <0.0001 | 0.0552 |
| Convertible with fixed dividends | | | |
| Preferred issuers | 7.41 ($N = 46$) | 12.00 ($N = 51$) | 12.88 ($N = 45$) |
| Matching firms | 6.39 ($N = 46$) | 10.00 ($N = 51$) | 17.23 ($N = 44$) |
| *Z*-Statistic | 0.03 | 0.28 | 1.28 |
| *p*-Value | 0.9782 | 0.7831 | 0.2014 |
| Adjustable−rate dividends | | | |
| Preferred issuers | 2.60 ($N = 22$) | 14.00 ($N = 23$) | 23.38 ($N = 20$) |
| Matching firms | 2.05 ($N = 19$) | 16.00 ($N = 23$) | 7.07 ($N = 21$) |
| *Z*-Statistic | $-1.56$ | 0.52 | $2.35^{**}$ |
| *p*-Value | 0.1196 | 0.6042 | 0.0187 |
| Panel C: Industrials | | | |
| Industrials total | | | |
| Preferred issuers | 6.31 ($N = 140$) | 9.00 ($N = 173$) | 33.29 ($N = 150$) |
| Matching firms | 5.38 ($N = 158$) | 9.00 ($N = 182$) | 27.55 ($N = 164$) |
| *Z*-Statistic | 0.45 | $-0.28$ | 0.26 |
| *p*-Value | 0.6533 | 0.7827 | 0.7919 |
| Straight with fixed dividends | | | |
| Preferred issuers | 3.08 ($N = 32$) | 12.00 ($N = 40$) | 18.61 ($N = 35$) |
| Matching firms | 1.94 ($N = 35$) | 10.00 ($N = 41$) | 17.10 ($N = 35$) |
| *Z*-Statistic | 1.02 | 1.00 | 0.08 |
| *p*-Value | 0.3063 | 0.3194 | 0.9338 |
| Convertible with fixed dividends | | | |
| Preferred issuers | 7.55 ($N = 108$) | 8.00 ($N = 133$) | 37.90 ($N = 115$) |
| Matching firms | 6.23 ($N = 123$) | 9.00 ($N = 141$) | 30.81 ($N = 129$) |
| *Z*-Statistic | $-0.09$ | $-0.65$ | 0.46 |
| *p*-Value | 0.9285 | 0.5161 | 0.6427 |

***Table 6.*** (*Continued*)

| | Managerial Ownership (%) | Board Size | Block Shareholder Ownership (%) |
|---|---|---|---|
| Panel D: Utilities | | | |
| Utilities total | | | |
| Preferred issuers | 0.19 ($N = 101$) | 12.00 ($N = 124$) | 5.24 ($N = 95$) |
| Matching firms | 1.92 ($N = 110$) | 11.00 ($N = 116$) | 0.00 ($N = 102$) |
| *Z*-Statistic | $-6.84^{***}$ | $-3.08^{***}$ | $3.22^{***}$ |
| *p*-Value | $<0.0001$ | 0.0020 | 0.0013 |
| Straight with fixed dividends | | | |
| Preferred issuers | 0.19 ($N = 95$) | 12.00 ($N = 117$) | 5.28 ($N = 90$) |
| Matching firms | 1.78 ($N = 103$) | 11.00 ($N = 109$) | 0.00 ($N = 96$) |
| *Z*-Statistic | $-6.82^{***}$ | $-3.00^{***}$ | $3.48^{***}$ |
| *p*-Value | $<0.0001$ | 0.0027 | 0.0005 |
| Convertible with fixed dividends | | | |
| Preferred issuers | 14.26 ($N = 4$) | 9.50 ($N = 4$) | 0.00 ($N = 3$) |
| Matching firms | 17.96 ($N = 4$) | 9.50 ($N = 4$) | 15.09 ($N = 4$) |
| *Z*-Statistic | 0.00 | 0.15 | 0.00 |
| *p*-Value | 1.0000 | 0.8809 | 1.0000 |
| Adjustable−rate dividends | | | |
| Preferred issuers | 0.26 ($N = 2$) | 11.00 ($N = 3$) | 0.00 ($N = 2$) |
| Matching firms | 2.05 ($N = 3$) | 9.00 ($N = 3$) | 0.00 ($N = 2$) |
| *Z*-Statistic | $-1.44$ | 1.39 | 0.00 |
| *P*-Value | 0.1489 | 0.1642 | 1.0000 |

*Note:* The table reports median values for three corporate governance variables: managerial ownership, board size, and block shareholder ownership. Matching firms are chosen by the criteria of industry category, size, and leverage ratio. Candidates for matching firms are those that have not shown preferred stock (COMPUSTAT annual data item 130) in their capital structure for five fiscal years prior to the issue date of preferred issuers. From this universe, firms in the same industry with the market capitalization between 50 and 200% of the issuer are ranked by their leverage ratios. The firm with the closest leverage ratio to that of the preferred stock issuer is selected as the matching firm. Managerial ownership is defined as the number of common stock owned by officers and directors divided by the number of common stock outstanding. Board size is measured as the number of directors on the board of directors. Block shareholder ownership is defined as the percentage of ownership by shareholders who own 5% or more of common stock. Preferred issuers are categorized into three industries following Houston and Houston (1990): financials, industrials, and utilities. Financials are issuers with SIC codes 6000–6499 and 6700–6799. Utilities are issuers with SIC codes between 4900–4999. This group includes electric, gas, and sanitary services. All other issuers including transportation services (SIC codes 4700–4799), communications (SIC codes 4800–4899), and real estates (SIC codes 6500–6599), are classified as industrials. The *Z*-statistics test the hypothesis that the probability distributions associated with the preferred issuers and matching firms are equivalent using the Wilcoxon rank sum test. The asterisks $^{*}$, $^{**}$, and $^{***}$ indicate the significance of difference in the probability distributions between preferred issuers and matching firms at the 10, 5, and 1% level, respectively, using a two-tailed test.

characteristics to be statistically significant. Detailed analyses with three different matching designs are followed: matching scheme (i) by industry and size (Table 4), matching scheme (ii) by industry, size, and book-to-market ratio (Table 5), and matching scheme (iii) by industry, size, and leverage ratio (Table 6).

Table 4 uses the first matching scheme, by industry and size, and documents median values of three the corporate governance variables for the preferred issuers and their matching firms together with *Z*-statistics and *p*-values. We note first the result for the total sample and for distinct industries. Concerning managerial ownership in the total sample, preferred issuers have a lower managerial ownership than control firms (2.37% vs. 3.22%), significant at the 1% level. This result is driven by utility companies which show 0.18% ownership by managers for the preferred issuers and 1.92% managerial ownership by their control firms, which is significant at the 1% level. For the other two industry categories, the differences are not significant at conventional levels.

Board size in the total sample also shows a significant difference at the 1% level between preferred issuers (12) and control firms (11) with bigger boards for preferred issuers. Looking at board size by industry, financials and utilities demonstrate significantly larger board size for preferred issuers than for their matching firms. Financials have a median board number of 13 for the preferred issuers and 12 for the matching firms, which is significant at the 1% level while utilities have a median of 12 for the preferred issuers and 11 for the matching firms, which is significant at the 10% level. For industrial firms there is no significant difference in the board size between preferred issuers and their control firms at conventional levels.

There is no significant difference in the block shareholder ownership for the total sample whereas two industry groups show significant difference in the block shareholder ownership between preferred issuers and their peers. Financial issuers of preferreds (18.88%) show significantly higher block shareholder ownership than their control firms (10.58%). Utility firms show a marginally significant difference in the ownership by blockholders (at the 10% level) with a median 6.34% by the preferred issuers and a median 0.00% by their control firms.

Table 4 also provides a detailed analysis of corporate governance characteristics by issuers of different types of preferreds in each industry. Generally, preferred issuers that offer various types of preferreds have smaller managerial ownership than their non-issuing peers though the differences are not statistically significant except utilities that offer straight fixed-rate preferreds. Only utilities that issue straight preferreds with fixed dividends show significantly lower managerial ownership than their matching firms.

The significant board size differences between the issuers and controls that exist in financial firms and utility firms are mainly attributable to the issuers of

straight preferred stock with fixed dividends. Issuers of other types of preferred stocks do not show a significant difference in board size from their matching peers.

Though there is no significant difference in block shareholder ownership for the total sample, financial firms that offer straight fixed-rate preferreds and adjustable-rate preferreds have much higher block shareholder ownership than their peers. While utility firms as a group show a significant difference in block shareholder ownership at the 10% level, if we segment utility firms into different types of preferred issuer, no type-specific issuers dominantly contributes to the significant difference in block shareholder ownership between the issuers and controls.

To check the robustness of the results, we employ two alternative matching designs, the results of which are reported in Tables 5–6. The matching scheme (ii) by industry, size, and book-to-market ratio is implemented in Table 5. First we analyze the result for the total sample and by industry. For the total sample, in this matching design, managerial ownership still shows significant differences between preferred issuers (2.46%) and their controls (2.81%) but with reduced significance (from 1% level in the matching scheme (i) by industry and size to 10% level in this matching design). As in the matching scheme (i), utility firms drive the significant differences in managerial ownership.

Board size also shows a significant difference at the 1% level between preferred issuers (12) and control firms (11) as in the matching scheme (i). This result is attributable to utility firms. In this matching scheme (ii) the difference in the size of the board of directors for financials which was significant in the previous matching design (i) becomes insignificant while utility firms still show significant differences in this variable.

Block shareholder ownership which was not significantly different between preferred issuers and controls for the total sample in the matching scheme (i) turns out to be significantly different at the 5% level in the current matching design (17.85% vs. 12.17% for preferred issuers versus non-issuers). Both financial firms and utility firms contribute to the significant differences in blockholder ownership. The difference in block shareholder ownership for financial firms becomes more significant (from 5% level to 1% level) compared with the previous matching design in Table 4. Also, utility firms show an enhanced significance level for the difference in block shareholder ownership, from 10% level to 1% level.

Table 5 also provides a detailed examination of corporate governance characteristics by different types of preferreds. Table 5 shows similar results to those with the previous matching scheme shown in Table 4. The results for managerial

ownership are the same between two different matching schemes in the sense that a significant difference between issuers and controls is present only for utility issuers of straight fixed-rate preferreds. Also the results for board size are similar between two matching designs where only financials and utilities with straight fixed-rate preferreds show significantly larger board size than their peers.

The examination of block shareholder ownership in Table 5 also shows results similar to the previous matching scheme in Table 4. In Table 5 as in Table 4, financial firms with straight fixed-rate preferreds and adjustable-rate preferreds are still significantly different in block shareholder ownership from their matching peers. In this matching design (ii), utility firms that issue straight fixed-rate preferreds show a significant difference in blockholder ownership from their matching firms while in the previous matching scheme there was no statistical significance at conventional levels.

Another robustness check is executed by selecting control firms using the criteria of industry, size, and leverage ratio (matching design (iii)). The results are presented in Table 6. Overall, Table 6 shows similar results as Table 5, in which we chose control firms by the criteria of industry, size, and book-to-market. Looking at the results for the total sample in Table 6, we notice that as in Table 5 all three corporate governance variables show significant differences between the preferred issuers and their control firms at least the 10% level. In Table 6 the significant difference in the managerial ownership for the total sample is driven by utility firms as in the previous two tables, Tables 4–5.

Board size differences between preferred issuers and matching firms are driven by financial firms and utility firms. Financial issuers did not show a significant difference in board size in the matching design (ii), but in this matching scheme (iii) preferred issuers in the financial industry (13) have significantly larger board size than their control firms (11). Utility issuers have significantly larger board size (12) than their matching firms (11). Also, block shareholder ownership is still significantly different between the total sample of preferred issuers and their matching peers. As in the previous matching designs, (i) and (ii), the difference in block shareholder ownership is driven by the financials and utilities.

Table 6 also provides a detailed comparison of corporate governance characteristics between preferred issuers and their control firms. The results are generally the same as the ones in Table 5 where industry, size, and book-to-market ratio are used as matching criteria. One exception occurs for financial firms with straight fixed-rate preferreds that show a significant difference in managerial ownership from their peers. In the previous two matching schemes, (i) and (ii), there exists no significant difference in the managerial ownership between financial firms that issue straight fixed-rate preferred stocks and their control firms.

## 5. SUMMARY AND CONCLUSIONS

In this paper we contribute to the literature on corporate governance by examining the characteristics of firms that issue preferred stock. Using matching firm methodology we examine three important corporate governance variables: managerial ownership, board size, and block shareholder ownership. We provide a detailed analysis by segmenting the sample into different industries and different types of preferred stock in addition to the investigation of the total sample.

For the total sample, we find a consistently significant difference in the managerial ownership between preferred issuers and their matching firms. In all three matching designs the preferred issuers have significantly lower equity ownership by management than their peers. The difference is driven by the utility firms. This finding is consistent with our expectation that the use of preferred stock and managerial equity ownership both serve to reduce agency costs and thus that corporations that use preferred stock tend to have lower managerial ownership.

Board size is also significantly different between the preferred issuers and their control firms regardless of the matching schemes for the total sample. As we conjecture, preferred issuers have larger boards than their controls. Those differences are mainly attributable to financial firms and utility firms. In terms of economic significance we may not be able to argue that the difference in board size is economically meaningful since the difference in median number of directors between the issuers and peers is one or two out of median number of directors that ranges from 11 to 13.

Equity ownership by block shareholders for the total sample shows a significant difference between the issuers and controls for two matching schemes, (ii) and (iii), but fails to show a significant difference in the matching design (i). Looking at the block shareholder ownership by industry, financial firms and utility firms exhibit consistently significant differences for the three matching schemes.

Industrial firms fail to demonstrate any significant difference in the three corporate governance variables regardless of the matching methodologies employed. When we look at the type of preferred issued, we find that the statistical significance in the differences in the corporate governance characteristics resides in the issuers with straight fixed-rate dividends.

This paper provides new perspectives for understanding firm characteristics of preferred stock issuers. To the extant research that focuses on the issues of tax incentive and profitability, we add our findings of distinct corporate governance characteristics of the firms that employ preferred stock financing. By segmenting the sample into different industries we find that utility firms have a material disparity in corporate governance structure between preferred issuers and non-issuers. Analyses of the types of preferreds suggest that firms issuing straight

fixed rate preferreds have distinct corporate governance characteristics relative to non-issuers.

## NOTES

1. According to annual COMPUSTAT database as of the end of 1999, 20% of NYSE listed firms, 15% of AMEX listed firms, and 17% of NASDAQ listed firms have preferred stock in their capital structure.

2. Fooladi et al. (1991) extend the model by Fooladi and Roberts (1986) to incorporate different tax regimes and produce conditions for the supply and demand for preferred shares in six different countries. Fatemi et al. (2001) apply tax incentive model of supply of and demand for preferred stock to the Pacific rim emerging economies of Taiwan, South Korea, and New Zealand.

3. The author excludes utility and financial firms from the sample due to concerns that government regulation leads to different and more limited roles for their board of directors (p. 189).

4. Lipton and Lorsch (1992) and Jensen (1993) suggest a maximum of seven or eight people in the board for the effective functioning of a board. "When boards get beyond seven or eight people they are less likely to function effectively and are easier for the CEO to control" (Jensen, 1993, p. 865).

5. "Compact D/New Issues contains comprehensive facts and figures extracted from registration statements, amendments, prospectuses and supplements filed with the Securities and Exchange Commission (SEC) under the 1933 Securities Act. Updated monthly, the database is cumulative, containing information on transactions registered on or after January 1, 1990" (Compact D/New Issues User's Manual, p. C3).

6. "The Compact Disclosure SEC Database contains comprehensive financial and operational data on 12,000 U.S. public companies. This information is extracted/abstracted from key Securities and Exchange Commission (SEC) filings and annual reports to shareholders. Included in the Database are public companies whose stock is traded on the New York Stock Exchange, American Stock Exchange, NASDAQ or other over-the-counter markets" (Compact D/SEC User's Manual, p. A3).

7. Following Linn and Pinegar (1988) and Houston and Houston (1990), a preferred stock issue that has both a variable dividend and is convertible is classified as adjustable-rate preferred. Two of 27 issues reported as adjustable-rate preferreds are convertible. The remaining 25 issues are straight.

8. Linn and Pinegar (1988) report straight with fixed dividends (72%), convertible with fixed dividends (19%), and adjustable-rate dividends (9%).

9. Anderson and Lee (1997a, b) examine the reporting discrepancy of ownership data (management and board shareholdings) between four surrogate databases and the corporate proxy statement. They find that regressions using the ownership data from Corporate Text and Compact Disclosure databases produce results that are statistically indistinguishable from the results using the ownership data from the corporate proxy statement.

10. Loughran and Ritter (1995) discuss issues relating to the inclusion of industry category for the methodology of matching firm selection. Also look at Loughran and Ritter (1997) where they consider the industry category when they examine the long-term operating performance.

11. When both sample sizes, $n_1$ and $n_2$, are greater than 10, the sampling distribution of $W_+$ can be quite well approximated by a normal distribution (Rice, 1995).

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# AUSTRALIAN CORPORATE CASUALITIES

Bonnie Buchanan

## ABSTRACT

*Recent high profile U.S. corporate collapses have their counterparts in other international markets, such as Australia. The corporate governance failures that led to major corporate collapses in both countries are strikingly similar, despite differences in their respective corporate governance systems. In this paper, I present an examination of the corporate governance failures that led to the demise of three prominent Australian firms in 2001 and illustrate that the corporate governance failures are not limited to the existing corporate governance system in the United States. I will also outline the various corporate governance reforms that were established to restore investor confidence.*

## 1. INTRODUCTION

Despite a booming economy in recent years, Australia witnessed a number of sensational company failures in 2001. Between March and May 2001, Australia saw the collapse of HIH Insurance, One.Tel, and Harris-Scarfe. Before their respective collapses, HIH Insurance was Australia's second biggest insurer and Harris-Scarfe Holdings was Australia's third largest retail group. One.Tel was a young telecommunications company that had opened up (in a formerly regulated

**Corporate Governance**
**Advances in Financial Economics, Volume 9, 55–79**

**ISSN: 1569-3732/doi:10.1016/S1569-3732(04)09003-6**

market) with the promise that competition would produce lower prices and improved service.

These three corporate failures cannot be attributed to a single governance mechanism. These failures share a number of common factors: inadequate disclosure to investors, the overconfidence of management, flaws in ownership structure, board composition, remuneration packages and related party transactions, a series of failed acquisitions, poor business strategies and aggressive and/or fraudulent accounting practices. In the case of HIH Insurance, the breakdown of prudential regulation has been cited as a contributing factor to the company's collapse.

The fallout from these collapses has been immense. For example, the HIH collapse impacted the Australian housing construction industry and deprived half of Australia's doctors of malpractice insurance and thousands of businesses lost liability coverage. These collapses also resulted in extensive regulatory investigations as well as re-examination of the prevailing regulatory framework. In some instances, legal action was also taken against various former directors.

In this paper I present a clinical examination of the corporate governance failures that contributed to the collapse of three major Australian companies in 2001 and the subsequent reform that occurred in Australia. I also examine the similarities and differences between Australian corporate governance mechanisms and those in places in other developed markets and the role these mechanisms played in the failure of the Australian companies. I then highlight the elements of corporate governance that were ineffective in these cases.

The remainder of the study is organized as follows: Section 2 presents an overview of the three Australian corporate collapses, Section 3 provides a comparison of corporate governance systems in place in major developed markets, Section 4 highlights the corporate governance mechanisms that failed, Section 5 details the subsequent Australian corporate reform proposals and Section 6 concludes.

## 2. OVERVIEW OF AUSTRALIAN CORPORATE COLLAPSES

### *2.1. HIH Insurance*

HIH Insurance[1] began in 1968 and after being acquired by a British insurer in 1971, the firm that became HIH was spun-off as a publicly traded firm on the Australian Stock Exchange in 1992. HIH diversified into many insurance sectors with operations (217 subsidiaries) in multiple countries through a decade of multiple acquisitions, mergers, and name changes. Prior to its collapse, HIH Insurance's principal activities in Australia and internationally were general

insurance underwriting, the operation of insurance underwriting agencies, investment funds management, financial services and property.

Evidence of HIH's aggressive approach to accounting surfaced as early as 1992 in a due diligence report by Ernst and Young performed for CIC Holdings while in merger talks with CE Heath International (an earlier version of HIH). Heath was found to have understated liabilities by A$18 million and under-reserved by A$41 million (much of this sum constitutes a "prudential margin", a very common prudent insurance company practice of reserving approximately 20% more capital beyond what is necessary to cover expected liabilities). Ray Williams, CEO of Heath, disagreed with the need for a prudential margin. The merger still took place after a second report by an independent expert who recommended the merger. The independent expert was from the public accounting firm Arthur Andersen and later became HIH's lead auditor in 1996 when the former auditor, Dominic Fodera, became HIH's finance director.

The beginning of the end of HIH focuses on a particular acquisition in 1998. HIH initiated a formal takeover of domestic insurer FAI Insurance Ltd. in September 1998, completing the takeover in January 1999. According to its annual report, HIH's strategy was to secure a major market share position in the Australian general insurance industry as well to diversify its distribution channels. A major stakeholder in FAI, the Adler family, sold their 45 million shares, or 14.2% stake, in FAI to HIH for A$34 million. HIH Insurance announced it had purchased the Adler family stake and would make a bid for the remaining shares of the company. After the FAI takeover, the HIH group accounted for more than 10% of the general insurance business in Australia. Rodney Adler, CEO of FAI, was then named a director at HIH.

In early 1999, declining premium rates, record low interest rates and the second worst year on record for natural disasters were given as reasons for a 39% profit plunge. As a result of these disasters, claims expenses also increased sharply and the core underwriting resulted in a loss of A$73.4 million for 1998 with catastrophe losses totaling A$36 million. FAI Insurance recorded an unaudited loss of A$50–$60 million for the six months to December and suffered an A$22 million loss on investments for the first quarter. Despite this, by the end of March 1999, HIH's earnings potential had received an upward rating by stock analysts.

However, the credit quality of HIH had already been downgraded from A to $A^-$ by Standard and Poors in January 1999 due to concerns over the acquisition of FAI. HIH attempted to allay the fears of the rating agencies by issuing subordinated debt with quasi-equity characteristics because it hoped to neutralize rating agencies' concerns about its indebtedness, while also addressing shareholders' concerns of dilution by a straight equity issue.

Yet, losses continued to mount during the year and the stock price continued to drop. HIH also changed its financial year-end from December 31 to June 30, justifying the decision because of the need to standardize internal reporting periods following the takeover of FAI Insurance and so that investors could make more meaningful comparisons with competitors.

At the start of 2000, HIH benefited by offloading part of its stake in the telephone company One.Tel for about A$35 million. In January, the company also sold part of its business in Argentina and ceased to be a substantial shareholder in a number of companies. At the same time, HIH decided to sue former clients in order to recover an alleged overpayment of funds.

Reported profits for the last two quarters of 1999 exceeded expectations by about A$10 million. HIH pointed to an improved underwriting result, A$25 million in cost savings from the integration of FAI Insurance, and disposal of that acquisition's last major non-core asset as reasons for the improvement. However, reinsurance, which represented 5% of HIH's business, contributed an A$16.6 million loss as a result of exposure to the European windstorms in December. Standard and Poors confirmed HIH's credit rating of $A^-$ in February.

As the year progressed, so did the negative news events for HIH. At the end of May, HIH denied claims that it had withheld from its shareholders relevant information about two takeover offers and a potentially expensive indemnity case. HIH management attributed the drop in share price as an irrational response to negative publicity aimed at HIH Insurance in the media. At the end of June 2000, analysts expressed concerns regarding HIH's ability to pay its claims. HIH suffered more profit downgrades in July by analysts based on concerns of lower investment income and an expectation that predicted premium rate increases would not occur.

On September 11, 2000 HIH shares were suspended for trading as the company delayed its profit announcement. Three days later, two news events caused a further 20% slide in stock price. First, reported financial results for the first two quarters of 2000 were far worse than expected by analysts. Second, HIH announced a deal to sell its personal lines business to German insurer Allianz. HIH would receive A$200 million at the time of the deal and proportional earnings for up to five years. After the three years Allianz would have an option to buy HIH's interest, while HIH could sell its 49% interest at any time during the following five years for A$125 million.

The negative market reaction stemmed from investors' belief that HIH was selling its best assets – its personal lines business. Although this action would return HIH to its original focus of corporate insurance, analysts were concerned about the long-term viability of the company and grew suspicious of its accounting practices.

In order to support the stock during this downfall, CEO Williams bought 1.05 million shares and another board member bought 227,000 shares. At about the same time, director and former FAI CEO Rodney Adler began selling shares.

The stock's decline was not reversed by Williams' stock purchases or his strategic decisions and so he tendered his resignation on October 12, 2000. The company concurrently announced other restructuring moves, including that Australian executives would no longer sit on the board of HIH, reducing the size of its board from 11 to seven. The reason cited was that such a change was aimed at increasing the independence of the board. The capital markets greeted this news favorably and Adler continued selling shares soon thereafter.

Some media outlets began speculating that HIH's crisis was linked to the FAI takeover from two years prior. Apparently, no formal review of FAI's books occurred before HIH launched it's A$300 million takeover. Instead, the decision to buy FAI was based on a review of publicly available information such as annual reports and company results without a due diligence effort. After the takeover of FAI, HIH shut down several of FAI's insurance books. However, in the two-year period subsequent to the takeover, claims from those books had swollen to approximately A$400 million, indicating that FAI was effectively insolvent when HIH bought it.

In November, Standard and Poors dropped the credit rating of HIH from $A^-$ to $BBB^+$ – attributing the downgrade to a lower quality balance sheet that had emerged as a result of the deterioration in the FAI book of business and poor underwriting performance in HIH's U.K. and U.S. operations. In response to the downgrade, HIH constructed a revival plan that included abandoning its loss-making U.S. workers' compensation business and placing its Asian operation (estimated to be worth A$80–$90 million) up for sale.

A new CEO was announced on December 15, 2000. At the shareholders meeting, investors jeered the former CEO when it was announced he would receive an estimated A$5 million payout. Rodney Adler, who had sold the last of his shareholdings in late December 2000, resigned at the end of February, 2001. The Australian Securities and Investment Commission (ASIC) announced an investigation of his share trading shortly afterwards.

Shares in HIH were suspended on February 22, 2001 and again on February 27, 2001. Standard and Poors lowered HIH's credit rating from $BBB^+$ to $BBB^-$ and retained a credit watch on the company. ASIC also launched an investigation into HIH's market disclosure. Amongst speculation that HIH's half-year loss to December would be between A$100 and A$500 million, the Australian Stock Exchange (ASX) commenced delisting talks with HIH at the start of March 2001.

On March 7, HIH announced that it had sold a majority part of its corporate insurance operation to insurer QBE, who would effectively pay A$36 million for the right to 60% of HIH's A$600 million in premiums. However, QBE would not take on was HIH's liabilities. Allianz bought the remainder of HIH's retail venture for A$125 million and NRMA bought HIH's worker's compensation business for A$130 million. On March 12, 2001 the Australian Prudential Regulation Authority (APRA) announced that it had already provided notice to HIH as to why it should be investigated. Amongst estimates of a half-year loss of A$800 million, HIH put itself into provisional liquidation on March 15, 2001 and representatives from KPMG were appointed liquidators to the company and 17 of its controlled entities.

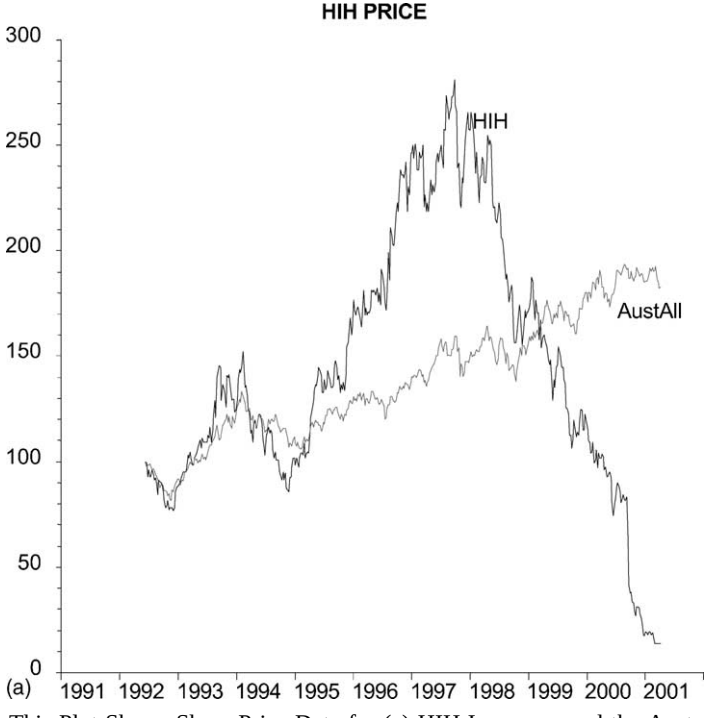


*Fig. 1.* This Plot Shows Share Price Data for (a) HIH Insurance and the Australian All Ordinaries Index (ASX) for the Period 1992 to March 15, 2001; (b) Harris-Scarfe Holdings and the Australian All Ordinaries Index (ASX) for the Period 1992 to March, 2001; (c) One.Tel and the Australian All Ordinaries Index (ASX) for the Period 1997 to May, 2001. The Data is Weekly Indexed with an Initial Index set to 100. *Source*: Datastream.

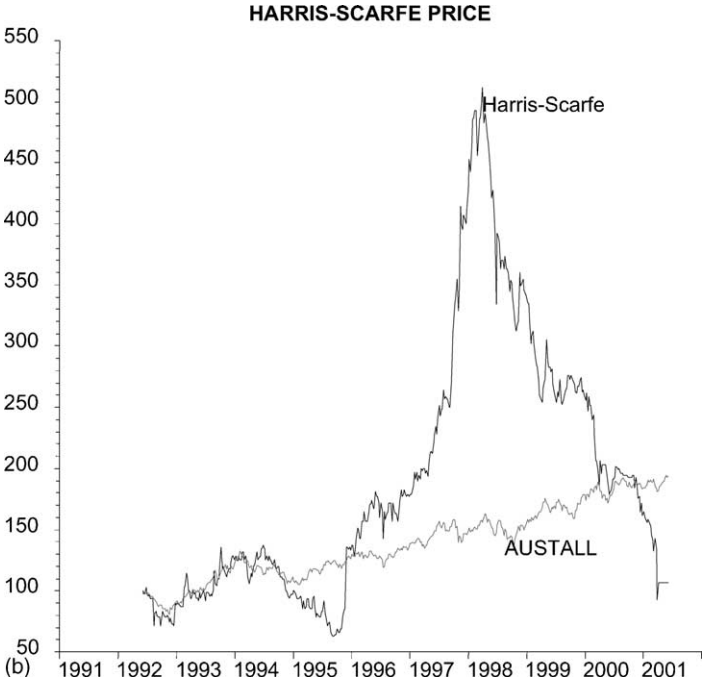


*Fig. 1.* (*Continued*)

### *2.2. Harris-Scarfe*

Harris-Scarfe was Australia's third largest retail group when it collapsed on April 3, 2001. Originally founded in Adelaide in 1850, the company changed its name to Harris-Scarfe Holdings in 1995. The company listed on the Australian Stock Exchange in 1971. In the 1990s, the company embarked on an ambitious acquisition drive, including expansion into Western Australia, NSW and Queensland. It had 35 stores in a national network, sales of A$406 million, more than 2,500 employees and 10,550 individual shareholders.

In 2000, Harris-Scarfe Holdings bought the online group "dstore." Under the terms of this deal, Harris-Scarfe was required to pay dstore shareholders with Harris-Scarfe shares valued at A$3 million in four tranches over a one-year period. Harris-Scarfe missed the first of its scheduled payments. The company was also continuing to struggle under heavy debt levels, rising inventory levels and accounts payable problems. On April 3, 2001, a supplier tried to repossess goods in a four-hour stand off at the Harris-Scarfe flagship store in Adelaide.

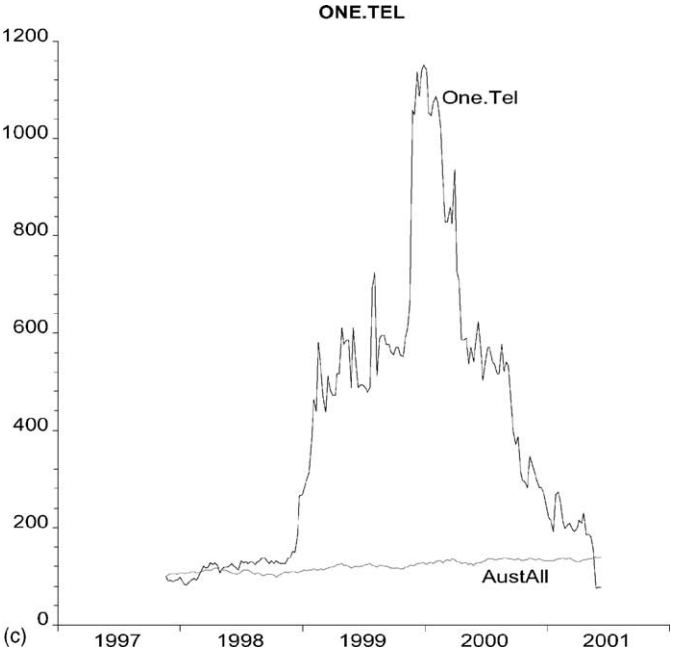


*Fig. 1.* (*Continued*)

In early 2001, Harris-Scarfe Holdings had also encountered tough trading conditions that had also hit its rivals. Harris-Scarfe's trading performance deteriorated, dropping to a five year low of A71 cents at the end of March 2001. At the end of March 2001, the Chief Operating Officer left Harris-Scarfe after 22 years of service. At the end of March a halt in trading was also requested. At the time, first-half profits for Harris-Scarfe slide to approximately $5 million (a 45% slide).

At the time of the Harris-Scarfe collapse, there were an estimated 5,100 unsecured trade creditors who were owed approximately A$75 million. The ANZ bank, a secured creditor, was owed A$65 million, the biggest exposure of all.

In the following months, news of financial irregularities at Harris-Scarfe also quickly emerged, which were believed to have extended back over a six- year period. Auditors Pricewaterhouse Coopers were called in to conduct a special investigation into accounting irregularities.

### *2.3. One.Tel*

On May 30, 2001, Ferrier Hodgson was appointed administrator to One.Tel. One.Tel was initially incorporated in May 1995 and listed on the Australian Stock

Exchange on November 13, 1997. Operating in seven countries, One.Tel provided telecommunications services that included mobile, national and international long distance calls, Internet services and phone cards.

At the time of the One.Tel collapse, the majority of its saleable assets were customer accounts and receivables. Media accounts detailed that the One.Tel collapse mirrored current trends in the U.S. telecom sector and in the European telecom sector. To make up for their own cash problems, European incumbents squeezed credit terms from 120 days to 30 days. In the telecommunications industry, the practice was for resellers to pay network operators within 30–45 days of receiving the bill, and it was not uncommon for these bills to be issued in arrears. Some network operators reportedly allowed up to 90 days by negotiation. It was estimated that as of December 31, 2000, One.Tel's average bill was outstanding by more than 100 days.

On May 17, 2001, One.Tel had told the market that the company had a need for raising fresh capital and that the company was confronted with cash-flow problems. One.Tel executives announced that the company would not be able to meet its forecast of cash reserves of A$75 million by June 30, 2001. Publishing Broadcasting Limited News Corporation, which controlled 41% of One.Tel, initiated a due diligence examination of One.Tel's domestic and international operations in mid-May 2001.

In early May 2001, Jodee Rich, a major shareholder, resigned as Joint Managing Director. Other One.Tel executives were heavy sellers of the company's shares. Finance Director Mark Silberman's private vehicle, Bema Ltd., held 4.62 million shares in One.Tel late February 2001. By late May 2001, the Bema Ltd. held only 30,000 shares in One.Tel. In addition, Finance executive Steven Hodgson cut his One.Tel stake from 500,000 to 202,250 shares.

A trading halt in One.Tel shares on the ASX was enacted on May 28, 2001. Just after the May 30, 2001 collapse of One.Tel, media reports estimated that One.Tel had approximately A$600 million in liabilities. On June 4, 2001, it was reported that ASIC had raided One.Tel's corporate headquarters. Interestingly, International Recovery Services, Ltd., the debt collection agency formed to recover funds owed to One.Tel, had three One.Tel executives, Mark Silberman, Bradley Keeling and Jodee Rich amongst it shareholders.

Figure 1 displays the share price history for HIH Insurance, Harris-Scarfe and One.Tel. The Australian All Ordinaries Index data are also contained in Fig. 1.

## 3. SURVEY OF AUSTRALIA'S CORPORATE GOVERNANCE SYSTEM

In the "law matters" theory of LaPorta et al. (1998, 1999, 2000), corporate governance systems are considered the strongest (or most effective) in those

countries offering the highest levels of legal protection to stockholders. The United States (U.S.), the United Kingdom (U.K.), Germany, and Japan are among these countries with the highest levels of legal protection and have been compared and contrasted for their differences in corporate governance systems. In these comparative studies a focus of interest is why these developed countries have such variance in their corporate governance systems as well as the advantages and disadvantages to each system.

While different in some aspects, corporate governance systems in the U.S. and U.K. (and Canada as well) are more similar than different and researchers often classify them as the same when compared to systems in place in Germany and Japan (Kaplan, 1994a, b). The defining characteristics of this "Anglo-American" corporate governance system is its external mechanisms and open market orientation. These two characteristics are intertwined to form an active external market for corporate control and managerial labor. Fama (1980) examines the concept of external market discipline with his theory of "ex post settling up." According to this theory, managers who have been terminated because of their firms' poor performance face a harsh labor market and generally do not achieve the same level of status or compensation as before the termination. As a result, these external market mechanisms are designed to encourage managers to act in shareholders' best interests. Kaplan (1994a) terms the Anglo-American model a "short term" corporate governance system because corporate governance changes may occur rapidly.

Other characteristics common in the Anglo-American include a single board of directors with a mix of management (inside) and non-management (outside) members. The chief executive officer (CEO) almost always serves on the board – often as chairman, although the dual CEO/chairman role is becoming less frequent in both countries. In the U.K., and increasingly in the U.S., the boards' audit and compensation committees are comprised of outside directors. CEOs are generally shareholders in their firms, but the levels of holdings vary greatly.

In contrast, the German and Japanese corporate governance systems are better described as long-term relationship models. External control mechanisms are minimal, but shareholdings are more concentrated – often held by financial institutions with a major presence on firms' boards. In Germany the board structure is separated into a supervisory and management board. This may appear somewhat similar to the Anglo-American board/management structure but there are notable exceptions. First, the two boards are mutually exclusive. Thus, the supervisory board, which oversees the management board, is a board of strictly outside directors. Secondly, the supervisory board appoints and charges the management board. This differs from the Anglo-American model where the CEO generally has

some, or even total, control over the selection of the board of directors. Finally, CEOs in Germany tend to have less absolute power over their corporations than in the Anglo-American model. John and Senbet (1998) detail further comparisons of these models.

The CEO and/or chairman of the board also has less power in Japanese corporate governance systems where decision by consensus is the norm. Board structure and function is different from both the Anglo-American and German models. Dominated by inside directors, the boards of Japanese companies are largely made up of current and former employees who tend to have negligible ownership stakes in the firm. As in the German system, shareholdings are concentrated and institutional ownership is higher than in the U.S./U.K. However, institutional shareholders tend to be less proactive in the Japanese system.

### *3.1. Australian Corporate Governance*

Australia is a developed country with a corporate governance system combining elements of both the external and internal control mechanisms described above. The general structure of the Australian corporate governance system is a hybrid of the Anglo-American, German, and Japanese models. Suchard et al. (2001) indicate that Australian corporate governance mixes the Anglo board structure with the internal "relationship" corporate governance mechanisms seen in Germany and Japan. Board structures and mechanisms are more similar to those in the Anglo-American model, whereas market activity characteristics are more similar to Japanese/German systems. That is, Australia has a smaller and less active market than the large, deep and active U.S. and U.K. markets.

Australian firms typically have a single board of directors comprised of both inside and outside members. In accordance with the 1991 Bosch Report, directors are classified into three categories: executives, independent non-executives, and non-independent non-executives. The dichotomy of classification of non-executives relies on a comprehensive list of current and past relationships between the director and firm. Directors are deemed independent only if they are not substantial shareholders in the firm, have no current or prior relationship with the firm as an employee, professional advisor, or have no other contractual relationship to the company. The 1991 Bosch report called for firms to adhere to these principles and disclose this in annual company reports. However, compliance was voluntary. In 1996, the Australian Stock Exchange presented a disclosure requirement for firms to include a statement of the main corporate governance practices in place during the reporting period. This is in contrast to the case of the United Kingdom, where all public firms listed on the London Stock Exchange must

disclose compliance with the 1992 Cadbury report recommendations and explain non-compliance.

Australian firms also tend to have less diffuse shareholdings than in the U.S. and U.K. Lamba and Stapledon (2001) find that La Porta et al.'s (1998, 1999) "law matters" theory does not appear well positioned to explain the picture of corporate ownership in Australia. Their results indicate that private benefits of control do help explain difference in ownership structure among the listed companies within Australia. Lamba and Stapledon (2001) find that in their sample of publicly listed Australian companies, controlling blockholders (those controlling 25% or more of the firm's equity) are quite common (45% of the sample). Where private benefits are comparatively high, the company is more likely to have a blockholder with a controlling stake.

Australian markets also differ in that hostile takeovers are rare and not viewed as a source of external discipline as in the Anglo-American model. Rather, the few blockholders with the large concentrations of shares are expected to serve as monitors of the firm much as in the case in Germany and Japan. Suchard et al. (2001) examine the relationship between the monitoring of CEOs by inside and outside directors and CEO turnover in the Australian market. They find that non-executive directors and independent directors are more likely to monitor management. That is, the Australian market for corporate control is not as active, and its effectiveness in inducing boards to be strict monitors and take corrective action in case of failure may not be comparable to the U.S. and the U.K. In their study, Australian boards had an average size of 8.5 directors, compared to 23, 14.9 and 25 (management and supervisory) directors for Japanese, U.S. and German boards, respectively.

In their sample, corporate boards are effective mechanisms in taking corrective action against poor performing CEOs. The board is found to be more effective in larger (market capitalization > A$1.1billion) firms than smaller (market capitalization, A$330mill–A$1.1billion) firms. However, there is a lag between discovery and action. In Australia, poor performance has a lagged effect on CEO turnover in comparison to the U.S. and U.K., where current performance affects CEO turnover.

Institutional investors tend to be a more informal presence in Australia compared with U.S. institutional investors. Craswell et al. (1997) detail that class actions and contingency fess, key features of the U.S. legal system, are largely absent from the Australian system. In Australia, securities litigation tends to be rare. Successful defendants in the Australian system are entitled to damages determined by a judge not a jury and costs which are based on reference to an arbitrary judicial scale.

# 4. CORPORATE GOVERNANCE ISSUES

Corporate failures can arise for various reasons. One reason is exogenous factors that negatively impact the firm – for example, changing technology doomed most messenger systems. Another reason is bad choices made by poor management. Additionally, failure can arise by failed governance, even fraud. These reasons have impacted the U.S. – Enron, for example and Australia. In this section I examine the principles and processes by which these three failed Australian firms were governed, including the accountability and relationships of the board of directors and management in the direction and control of these companies. In the first instance, I will describe the regulatory framework in which Australian corporations operate.

## *4.1. Regulatory Background in Australia*

One key authority is the Australian Securities and Investments Commission (ASIC), established by the Australian Securities and Investments Commission Act of 1989. ASIC's responsibility is to enforce company and financial services laws in order to protect consumers, investors and creditors. This body is also charged with regulating and informing the public about Australian companies, financial markets, financial services organisations and professionals who deal and advise in investments, superannuation, insurance deposit taking and credit.

The Australian Stock Exchange (ASX) is required under the Corporations Act to ensure that the market is fair, orderly and transparent. The ASX is responsible for maintaining a high level of market integrity by undertaking supervision of markets, developing and implementing business rules and listing rules that are designed to ensure fair and orderly markets. Regarding other regulatory matters, it is up to the ASX to choose. In 1996, the ASX became a listed company, so unlike many other exchanges the ASX is a "for profit" organization.

ASX should also maintain close co-operation with other regulators such as ASIC. ASIC supervised the ASX's listing and on a day-to-day basis supervises ASX's compliance with the listing rules. This is to ensure that ASX is subject to the same independent scrutiny as all other listed entities.

The ASX has listing rules that contain several provisions that require listed bodies to make continuous disclosure of information to the stock market. Continuous disclosure means that the market is informed of new events and developments as they occur. There are also ASX rules that require shareholder consent whenever the corporation enters into particular transactions that are prone to abuse.

In the case of HIH, the Australian Prudential Regulatory Authority (APRA) is a key figure. Before it can launch a formal investigation into a business, the APRA has to give an insurer 14 day's notice. The APRA allegedly gave HIH Insurance notice on March 1, 2001. HIH's failure to file its December account provided the necessary trigger to issue the 14-day notice. On the 13th day after the notice HIH Insurance went to the Supreme Court and placed itself into provisional liquidation without prior warning to the regulator. The APRA investigator moved in the next day.

### *4.2. Board Composition*

A cornerstone of corporate governance is an understanding of the powers, accountability and relationships of the board of directors and management, those who participate in the control and direction of a company. "*Corporate Practices and Conduct*" issued in 1995 by the Bosch Committee *and* "*Corporate Governance: A Guide for Investment Managers and Corporations*" issued in 1997 are the two major Australian guides used as a starting point for describing best corporate governance practice. As of September 2001, ASX Listing Rule 4.10.3 requires that a listed company's annual report contain a statement of the main corporate governance practices it has in place.

An Australian board of directors may include non-executive directors in addition to executive directors. The main role of the executive directors is to carry out day-to-day management of the company's business. Consequently, executive directors are usually full-time employees of a company and are usually its senior management. Executive directors also have directorial duties of the company and may also have additional duties as part of their employment contract. On the other hand, non-executive directors are not employed by the company and are engaged on a part-time basis. Rather than be focused or specialized in any particular area of a company's operations, the non-executive director is intended to have a broad and independent view of the company's operations.

Farrar (2002) examined the corporate governance practices of the top 100 listed companies in 1999. He found that all the companies he surveyed stated whether directors were executive or non-executive and that the average board size was 9.6 members (comprising 2.2 executive directors and 7.4 non-executive directors). The Korn/Ferry Report for 2000 states that Australian boards were made up of an average of five non-executive and two executive directors. The 2000 Korn/Ferry Report notes that only 18% of Australian boards surveyed sought external feedback on their effectiveness.

"*Corporate Practices and Guidelines*" claims that independence is more likely to be assured if the director is not a substantial shareholder of the company, is not retained as a professional adviser by the company, is not a significant supplier to or customer of the company, has not been employed by the company within the last few years and has no significant contractual relationship with the company otherwise than as a director. According to Stapledon and Lawrence (1996), the disadvantages of independent directors include: some independent directors are still too closely allied to management; their position is weakened where the chairperson is not an independent director, they lack detailed knowledge of the company's business, they have limited time to spend on the directorship and they are sufficiently linked with shareholders.

Of concern in the case of HIH Insurance was that it was led by its founders and non-executive board member Rodney Adler was the son of the founder of FAI Insurance, the company which has been referenced as a determining factor in the collapse of the HIH Group. Adler was also a non-executive director on the One.Tel board.

One.Tel also had two founders on the board and the founders were co-managing directors. Shortly after its collapse, it emerged that a number of One.Tel executives were heavy sellers of the company's shares in the weeks before it collapsed. Also of interest is that three of the directors were shareholders of International Recovery Services Pty. Ltd, which is the debt collection agency formed to recover funds owed to One.Tel.

The board of Harris-Scarfe included two family members of the person who gained effective control of the firm in the 1970s. One of the family members also took an expanded role as executive chairman. Harris-Scarfe also took a geographical approach in the composition of its board. All but one of the Harris-Scarfe directors lived in Melbourne, while the management, none of whom were on the board, lived in Adelaide (where the company was headquartered).

In assessing performance and prospects of a company, auditor independence is crucial to the quality and clarity of information. These failed companies also refocused attention on the controversial issue of the independence of the auditors from their clients. Depending on length of service and seniority, former partners of chartered accounting firms can receive a pension from their former firm. Consequently, this means some former partners may have an incentive to direct business to their old firms.

The board of HIH had three former partners of Arthur Andersen, HIH's auditor. Two were non-executive directors and the third was HIH's Finance Director (who resigned five months before the company's collapse). Both non-executive directors were also members of HIH's Audit Committee. Harris-Scarfe's deputy chairman was also once a partner in Price Waterhouse, the firm's auditor.

***Table 1.*** Board of Director Composition and Structure for HIH Insurance, Harris-Scarfe and One.Tel.

| Item | HIH Insurance | Harris Scarfe | One.Tel |
|---|---|---|---|
| Auditor | Andersen | PriceWaterhouse Coopers | BDO Australia |
| Founding member on board | CEO was founder | Two family members on board | Two founders were co-managing directors |
| Large shareholders represented on board | Yes | Yes | Yes |
| Audit firm personnel represented on board | Yes | Yes | No |
| Non-executive directors have other company directorships/responsibilities | Yes | Yes | Yes |
| Independent directors on audit committee | No | No | No |
| Audit/Remuneration/Governance committee composed of same people | Yes | Yes | Yes |
| Board size (2000) | 7 | 6 | 9 |
| Number of non-executive directors on board | 5 | 5 | 5 |
| No. of directors on audit committee | 4 | 3 | 2 |
| No. of directors on remuneration committee | [a] | 3 | 2 |
| Number of board meetings held | 6 | 12 | 12 |
| Number of audit committee meetings held | 3 | 2 | 3 |
| Number of remuneration committee meetings held | [a] | 3 | 1 |

*Source:* Annual Reports of HIH Insurance, Harris-Scarfe and One.Tel 1999–2000.
[a] Determined by Human Resources Committee.

In addition, there was not a single independent director on the Audit Committees of HIH, One.Tel, Centaur or Harris-Scarfe.

The same two-non executive directors, neither of whom were independent directors, comprised One.Tel's audit, remuneration and corporate governance committees. According to the One.Tel 2000 annual report, the finance and audit committee met three times during the year but the remuneration and corporate governance committees each only met once during the year.

Regarding the issue of directors' remuneration, according to the Korn/Ferry International Report in 2000, the average remuneration for non-executive directors in Australian listed companies was $A52,760. In linking director remuneration to share price, there are a number of inherent dangers. For one, it can lead to a disproportionate focus on short-term performance and pre-occupation with supporting the share price. Additionally, several directors held substantial equity stakes in the firm. Of course, linking director remuneration to share price presents a number of inherent dangers. For one, it can lead to a disproportionate focus on short-term performance and pre-occupation with supporting the share price. In the case of One.Tel, there was cause for concern when the two founders (and 30% shareholders) were paid A$15 million in compensation while the company had lost A$291.1 million in 2000.

Amongst other board failings was the attendance of some directors at board meetings. Throughout 1998 and the first six months of 1999, the retired co-founder and CEO of HIH and chairman of the reinsurance committee, attended only four of 24 board meetings.

Table 1 summarizes the board composition and director responsibilities for the Australian firms in this paper. Table 2 summarizes the board composition and director responsibilities for U.S. firms that collapsed due to similar corporate governance issues.

### *4.3. Accounting Issues*

The Australian Accounting Standards Board (AASB) sets the accounting standards for Australian companies. Under AASB standards, companies must provide in their annual report a profit and loss statement, a balance sheet and a statement of cash flows and these financial statements must indicate a "true and fair view" of the financial position and performance of the company. In addition, there are also various semiannual reporting obligations. After July 1, 1998 the law required that a company's annual financial report (or its concise version) must be audited and lodged with the Australian Securities and Investment Commission within three months of the end of the financial year.

***Table 2.*** Board of Director Composition and Structure for Enron, WorldCom and Adelphia.

| Item | Enron | WorldCom | Adelphia |
|---|---|---|---|
| Auditor | Andersen | PriceWaterhouse Coopers | Deloitte Touche |
| Founding member on board | No, although Chairman had been with company since 1985. | Yes | Founder and three sons were directors |
| Large shareholders represented on board | Yes | Yes | Yes |
| Audit firm personnel represented on board | No | No | No |
| Non-executive directors have other company directorships/responsibilities | Yes | Yes | Yes |
| Independent directors on audit committee | No | No | No |
| Audit/Remuneration/Nominating/Governance committee composed of same people | Yes | Yes | Yes |
| Board size (2000) | 14 | 12 | 9 |
| Number of non-executive directors on board | 12 | 8 | 4 |
| No. of directors on audit committee | 5 | 4 | 3 |
| No. of directors on remuneration committee | 4 | 4 | 4 |
| Number of board meetings held | 5 | 4 | 10 |
| Number of audit committee meetings held | 5 | 5 | 3 |
| Number of remuneration committee meetings held | 10 | 11 | 5 |

*Source:* Thomson database, Worldscope and proxy filings.

As of March 15, 2001, liquidators estimated that the deficiency for the HIH Group was between A$3.6 billion and A$5.3 billion. Within months of the collapse, certain items on HIH Insurance Group's balance sheet were receiving further scrutiny. Shareholders' funds in the 2000 annual report were estimated to be A$939 million, but the supporting was questionable. In the 2000 annual report HIH's assets included intangibles of approximately A$500 million, the bulk of which represented goodwill for FAI. On the liabilities side, there was approximately A$500 million in borrowings. The substantial amount of debt carried by HIH is troubling. An insurance company's investment portfolio holds the premiums the company collects from its policy holders and generates investment income as an internal source of capital. Compared with the previous year, HIH's debt had risen by A$170 million in 1999–2000 (a nearly 50% increase). According to its cash flow statements, HIH's premium income dropped 15%, or $486 million. Except for one-time purposes such as a takeover, there is little reason for an insurance company to seek external debt.

Of the A$300 million HIH paid for FAI, A$157 million was for net assets and A$143 came in the form of goodwill. The HIH offer for FAI Insurance was at a 43% premium to FAI's market capitalization. By June 30, 2000, HIH's goodwill had increased to A$555.9 million and analysts estimated that A$405.3 million of that total was related to FAI assets. The net assets acquired from FAI were valued at a loss of over A$100 million within 18 months of FAI takeover. Eventually, this prompted the managers of HIH to consider legal action to determine if the financial position of FAI had been intentionally overstated at the time of the acquisition. FAI also used had Andersen as its auditor.

In addition, in 2000, a former HIH finance executive, Jeff Simpson, provided the APRA with a report that essentially stated that HIH was financially insolvent. Simpson also noted that APRA appeared to be understaffed (Main, 2002b). The situation is similar to that in the U.S. where several corporate failures of firms could not be pre-empted by the Securities and Exchange Commission (SEC) because of their claimed understaffing.

FAI was not the sole contributing factor to HIH's mounting problems. Other possible reasons include running out of reinsurance cover and having an insufficient prudential margin and insufficient assets to cover claims, expansion into the competitive Lloyd's market (with losses of approximately A$150 million) and U.S. workers' compensation sector. Analysts also scrutinized one other issue, namely the decision by HIH to treat its increase in reserving as a goodwill item. While an acceptable accounting treatment, such a practice would be reflected in a company's profit and loss statement under more conservative accounting practices.

Harris-Scarfe's financial statements also received a lot of scrutiny in the months after it went into administration. Pricewaterhouse Coopers was called in to

conduct a special investigation and found a "material overstatement" of stock and an "understatement of liabilities" and these financial irregularities are believed to have stretched over a six-year period. For example, Harris-Scarfe accounts for December 31, 2000 showed net assets of A$108 million but the correct number was believed to be much closer to A$60 million.

Also of concern is an inventory assessment of Harris-Scarfe. Between 1996 and 2000, Harris-Scarfe's current ratio increased from 1.22 to 1.98 (Worldscope). Inventory as a percent of current assets increased from 73.9% to 81.6% and the number of days inventory held increased from 62.12 (1996) to 85.29 (2000).

During that period there had been a change of auditor at Harris-Scarfe. Later during hearings it emerged that Ernst and Young (the former auditor) had been concerned about the company's ambitious drive back in the mid-1990s. An Ernst and Young employee revealed that in 1995, the former Harris-Scarfe CFO had breached strict national accounting standards by failing to record depreciation on a valuable lease of its main store, and this allegedly resulted in profits being boosted by A$150,000.

A former Harris-Scarfe auditor also told the South Australian Supreme Court of how Harris-Scarfe had overstated its 1997 profit by A$7 million through artificially inflating assets, sham book entries and a complex web of accounts. One accounting trick involved creating artificial profits by acquiring new stores and revaluing its assets upward. For example, the former Ernst and Young auditor told that Harris-Scarfe paid just over A$3 million for assets that it booked for A$11.4 million. Included in this total figure was paying A$100,000 for fixtures and fittings but valuing them at $3.5 million. Understating liabilities, overstating credit accounts through a series of round-robin transactions were other accounting devices cited during the hearings.

Regarding One.Tel, in April 2002, the Federal Court heard that a Publishing and Broadcasting Limited Finance Director failed to recognize a A$52 million deterioration on the expected cash position of One.Tel's Australian operations in February and March of 2001. In May 2002, the Federal Court was told that under instruction of a finance executive One.Tel's cash receipts were plugged with "made up" amounts to boost the company's revenues by about A$1 million a day. The Federal Court also heard that One.Tel's non-executive directors did not query the make up of A$202 million in deferred expenditure, which included the controversial A$6.9 million bonuses to the co-founders and co-managing directors.

### *4.4. Business Strategies*

These bankruptcies also focused attention on management business strategy development and implementation. For example, in the case of Harris-Scarfe the

group expanded into two states where it had never operated before and with stores significantly larger than the existing ones. As the group expanded from 18 to 35 stores, sales declined from A$2,710 to A$2,110 per square metre (or 23%).

In addition to the failed acquisition of FAI, aggressive accounting practices and an insufficient prudential margin, at the HIH Royal Commission a picture was presented of a company that had low reserves, and a practice of pursuing low-priced and long-tail risky business as widely as possible. The HIH Royal Commission was told that in the mid-1990s, HIH Insurance's London office lost about A$500 million offering loss cover to film financiers without knowing anything about films. The Australian Financial Review (May 31, 2002) provided a report on a controversial A$10 million transaction which involved a payment by an HIH subsidiary to Pacific Eagle Equities (a company Rodney Adler controlled). The A$10 million payment was used to prop up HIH's share price by creating a false impression that Adler was using his own money to buy stock in the insurer. The transaction also enabled Adler to find a buyer for his troublesome investments in three unlisted technology companies at cost.

Amongst the various problems at One.Tel, excessive subsidies to win market share blew out costs for the company. One.Tel simply could not afford luxuries like free phones and gimmicks. In the first quarter of 2001, nearly 69,000 mobile customers were added at an average subsidy of A$416 per subscriber and this cost the firm A$28.7 million. In addition, major European telecom companies were also short of cash themselves and in turn shortened credit terms, further compounding One.Tel's problems.

## 5. AUSTRALIAN CORPORATE REFORM

Since 2001, governments and regulatory authorities have seen the necessity to rebuild trust in the integrity of corporate governance and reporting. In the United States, the Sarbanes-Oxley Act (passed 25th July, 2002) is viewed as the most significant changes to U.S. business regulations in 70 years. Amongst new restrictions, the Sarbanes-Oxley Act places tough new penalties on corporate fraud and prevents accounting firms from offering consulting services to audit clients. In the United Kingdom, the Higgs Report (released in January 2003) proposes reforms to corporate governance rules to strengthen the role of independent directors. At the same time, the Smith Report was released and it seeks to clarify the relationships between auditors, boards and audit committees.

In the wake of local corporate failures, the regulatory agencies in Australia also took a more proactive role in overseeing corporate governance. The government's Corporate Law Economic Reform Program (CLERP9) (September 2002) provided a vehicle for responding to the fallout from the failures. CLERP9 is

intended to regulate the corporate governance and auditing of companies and included in the measures are compulsory five-year rotations of audit partners, and an increase in the maximum civil penalty for breaching continuous disclosure provisions by a corporation.

The Australian Stock Exchange also updated its corporate governance guidelines. The ASX principles and recommendations put more responsibility with independent directors and call for a separation of the role of chairman and chief executive. The updated ASX guidelines are regarded as voluntary but companies that fail to comply with the principles and recommendations must explain their reasoning to shareholders in the 2004 annual report. Table 3 summarizes the major corporate reforms that have been initiated in the United States, United Kingdom and Australia since 2002.

In the wake of the HIH collapse, the Australian government established a rescue package to compensate resident individuals and small businesses. In addition, the Australian government announced a Royal Commission to report on the HIH failure. The Royal Commission findings were delivered in mid-April, 2003. Justice Owens recommended deferring 56 suspected breaches of the law to prosecuting authorities – to the ASIC and NSW Director of Public Prosecutions. Owens also recommended a review of the Corporations Act and the Australian Stock Exchange rules, but he claimed he was against a "one size fits all model." In the area of corporate governance, one recommendation was to force a greater disclosure of directors' pay and benefits. The second recommendation requires clarification of executive's duties and to widen the definition of people performing functions for a company to include independent contractors and consultants. In addition, "blacklisting of analysts" (practiced by the HIH CEO) should be outlawed under ASX listing rules.

As far as legal action is concerned, civil proceedings were also brought against three HIH directors. All were found to have breached their duties as directors under the Corporations Act. Two of the directors, Adler and Williams, were jointly held liable to pay compensation of more than A$7 million and were banned from being involved in company management for terms of 20 years and 10 years respectively.

After the collapse of Harris-Scarfe, the former CFO was charged with 18 counts of failing to act honestly, six counts of acting dishonestly and eight counts of providing false information to the Australian Stock Exchange. He pled guilty to 32 dishonesty charges and was jailed for six years. The former COO faced 17 charges from an ASIC investigation, including seven counts of failing to act honestly, 10 counts of being reckless as an officer of Harris-Scarfe. Also, an A$70 million-plus damages action suit was launched against the former auditors of collapsed retailer Harris-Scarfe. A new ownership team took over on November 18, 2001 with a

***Table 3.*** Corporate Governance Reform in U.S., U.K. and Australia – A Comparison.

| United States | United Kingdom | Australia |
|---|---|---|
| *Sarbanes-Oxley Act (July 2002):*<br>• Obliges CEO and CFOs to verify public filings personally.<br>• A new private board to oversee auditors' activities.<br>• There are revised auditor independence rules. These include further restrictions on the level of non-audit services that can be provided by an audit firm.<br>• Companies are required to disclose codes of ethics that apply to their key executives (or explain why a code has not been adopted).<br>• Material fines and prison terms (up to 20 years) apply for various corporate frauds. Individuals can also be barred from serving as a director or officer. | *Higgs Report (January 2003):*<br>• Strengthen the role of independent directors.<br>• At least half a company's board should be independent<br>• The role of Chief Executive and Chairman should be separate.<br>• Directors should not chair more than one company.<br>• Non-executive directors should meet once a year independently of Chairman and executive directors.<br>• A senior independent director should be available to shareholders if the Chairman or Chief Executive does not resolve their concerns.<br>• There should be an audit, remuneration and nomination committee and no one director should be on all three committees at the same time. | *CLERP9 Proposals (September 2002):*<br>• Two-year restrictions on former audit partners becoming directors or managers of clients.<br>• Compulsory five-year rotations of audit partners.<br>• An increase from $200,000 to $1 million for the maximum civil penalty for breaching continuous disclosure provisions by a company.<br>• Tightens disclosure laws on company directors.<br>• Sharemarket-listed companies would be required to expense options provided to employees.<br>• The Financial Reporting Council would be expanded to have oversight on auditor independence requirements. |
| The New York Stock Exchange and SEC have also enacted more stringent practices. | *Smith Report (January 2003):*<br>• Seeks to clarify relationships between auditors, boards and audit committees.<br>• Recommends that at least three committee members should be independent non-executive directors. | *Australian Stock Exchange Updated Guidelines (March 2003):*<br>• The chairman should be an independent director.<br>• The roles of chairman and chief executive should be separated.<br>• The CEO and CFO are required to state in writing that the company's financial reports represent a true and fair view of affairs.<br>• A majority of independent directors should comprise the board.<br>• Companies within the S&P/ASX are required to have an audit committee.<br>• Only non-executive directors and a majority of independent directors should comprise the audit committee.<br>• Remuneration policies should be disclosed.<br>• Risk and management policies should be set by the board or the appropriate committee. |

new chairman and new CFO. Harris-Scarfe produced a solid profit in the eight months ending August 4, 2002 and posted a net profit of A$19.3 million.

ASIC also launched legal action against four former directors of One.Tel, including the founders. ASIC took the unusual step of pursuing them for compensation of up to A$50 million on behalf of creditors. The civil proceedings allege they had breached their duties as officers by withholding information about the company's financial condition from the board and the market. ASIC also asked the court that the four former One.Tel directors be disqualified from managing companies for a period to be determined by the court. In March 2003, co-founder Bradley Keeling was banned from being a company director for a minimum of 10 years.

## 6. CONCLUSION

This clinical paper examines three major business failures in Australia. While Australia's corporate governance system is different from the U.S., I illustrate how corporate failures are inextricably linked to governance failures, regardless of the corporate governance system in place. The major factors contributing to the bankruptcies of HIH, Harris-Scarfe and One.Tel were corporate governance failures – inappropriate rapid acquisition programs, accounting malfeasance, and a lack of board and auditor independence leading to failing business strategies. These bankruptcies were the result of failed proper corporate governance, not inevitable business declines. These cases illustrate in a setting other than the U.S. how weaknesses in corporate governance can occur, which undermines the confidence of investors and the accounting system.

## NOTE

1. For a full account of the HIH collapse, see Buchanan, Arnold and Nail (2003).

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# DO OUTSIDE BLOCKHOLDERS INFLUENCE CORPORATE GOVERNANCE PRACTICES?

Sarah W. Peck

## ABSTRACT

*This study investigates whether block acquisitions lead to changes in board and CEO compensation characteristics and finds that block purchasers do not play a significant role in improving the firm's governance practices. However, the majority of professional investors have sold their block within a year, suggesting that they do not own their stock long enough to alter governance policies nor to benefit from such changes. For the smaller number of firms where a new blockholder maintains their investment for more than a year, the use of equity based CEO compensation increases while the use of cash based compensation decreases.*

## INTRODUCTION

Recent scandals at Enron, Global Crossing, Aldephia, Qwest and World Com have led the pundits to declare a crisis in corporate governance and to call for greater vigilance by regulators and analysts of board practices, CEO compensation, and auditor independence.[1] Shareholder activists have also called upon major stockholders (blockholders), such as mutual funds and money managers, to play a more active role in determining the practices of corporate governance. They

**Corporate Governance**
**Advances in Financial Economics, Volume 9, 81–101**

**ISSN: 1569-3732/doi:10.1016/S1569-3732(04)09004-8**

have argued that money managers' lack of concern for board independence and CEO compensation have contributed to the crisis in corporate governance.[2] Prior research suggests that major investors do influence corporate policy by replacing the CEO and by restructuring the corporation after their purchase of a block of stock (see Barclay & Holderness, 1991; Bethel, Liebeskind & Opler, 1998; Denis & Serrano, 1996). These actions can be taken quickly and their impact can be reflected almost immediately in the price of the stock. No study to date has investigated whether actions that have longer run impacts, such as changes in the independence and effectiveness of the board or changes in the incentive compensation of the CEO, also occur after a block acquisition by a professional investor. This study does and finds most such blockholders simply do not hold their stock long enough to have either the ability or incentive to make longer run changes in the corporation in which they just acquired stock.

In a sample of 159 block acquisitions for 92 firms for 1989 and 1990, restructurings and the replacement of the CEO increase significantly after an acquisition of a block of stock by an outside investor, a finding consistent with prior studies. There is only weak evidence, however, that the actions of the blockholders lead to greater use of incentive compensation for the CEO. Furthermore, the results for the changes in CEO compensation are strongest for those firms where a new blockholder maintains their investment in the firm for more than a year. There is no evidence that block acquisitions result in a change in the composition of the board or its effectiveness. Foregoing these longer run actions is consistent with this study's findings that almost half of the new blockholders have sold their stake in less than a year after their initial purchase and over 70% have done so within two years. These results support complaints in the financial press that large institutional holders, mutual fund, and other managers fail to influence corporate governance policies in most firms.

One reason that these investors may not choose to strengthen the effectiveness of the board and CEO compensation contracts is the time required to effect such changes. Given the size of their investment, blockholders may not be willing to wait to make changes that will lead to an increase in stock price. Most existing compensation contracts are re-negotiated annually and, in some cases with long-term performance plans, even less frequently. Thus a new blockholder may have to wait until the contract is up for re-negotiation to make changes in the incentives for the existing CEO.

Board changes are also "sticky." Routine changes in board composition can be made only when stockholders elect directors at the annual meeting. Management largely controls the nominating process and thus a blockholder can only put forth a competing slate of nominees by instigating a proxy fight. Furthermore, blockholders often lose the fight because shareholders with small holdings tend

to vote with management. Thus blockholders may not get the board they want even if they are willing to wait until the annual meeting and wage a proxy fight.[3]

In contrast, a large blockholder can effect changes in the CEO and the firm's restructuring plans relatively quickly. They can pressure the board into making these changes by using the voting power inherent in their position as large shareholders to implicitly convey their willingness to align themselves with potential bidders in a takeover or other dissident shareholders.[4] In fact, many researchers have found that outside block acquisitions occur prior to an eventual takeover suggesting that management and the board will find such a threat credible (see Barclay & Holderness, 1991; Denis & Serrano, 1996; Holderness & Sheehan, 1985; Mikkelson & Ruback, 1985; Peck, 1996). This tacit threat together with "quiet pressure" can cause the board and the top managers to focus on changes such as replacing the CEO or restructuring the firm that do not require a shareholder vote (see Del Guercio & Hawkins, 1999; Shleifer & Vishny, 1986).[5]

These findings are consistent with the arguments made by Maug (1998) – that when the stock market is relatively liquid, large shareholders have less incentive to monitor managers. It is more profitable for such investors to acquire a block large enough to pressure managers to make quick changes to increase share value and then sell their block, which, in turn, frees up capital to repeat the strategy. A liquid stock market, such as that in the United States, allows for investors to pursue such a strategy.

This study makes three contributions. First, the findings of this study contribute to our understanding of the lack of blockholder activism. Prior researchers have investigated the rationale of the activism by public pension funds (Del Guercio & Hawkins, 1999; Gillan & Starks, 1998; Karpoff, Malatesta & Walking, 1996; Murphy & Van Nuys, 1994; Romano, 1993; Smith, 1996; Wahal, 1996). Del Guercio and Hawkins (1999) suggest that the strategies of institutional investors drive the form their activism takes. They show that because many public pension funds are indexed, publicly targeting a particular firm included in the index to improve its performance induces other firms included in that index to make changes to avoid also becoming a target.

Money managers and mutual fund mangers that actively manage their portfolios do not have these same incentives. Since they can buy and sell stocks freely without the constraints of indexing, the performance of their portfolios may be enhanced by making quick changes that immediately improve the stock price on their announcement such as the replacement of the CEO and the restructuring of assets. In contrast, changes that take longer to implement, such as increasing board independence and effectiveness, will show up in higher stock value only after a significant time lag. The criticism that professional investors are not active in determining corporate governance practices ignores the nature of their in-and-out

investment strategies. These give such investors little incentive or ability to take actions that pay-off in the long run.

Second, this paper suggests that the length of time a buyer maintains block ownership in a firm is critical to observing changes in firm policies following a block acquisition. No study to date (see Holderness, 2003) has examined how the duration of block ownership impacts changes in firm policy and firm value. The results in this paper show that such changes are positively correlated with the length of time the investor holds a block. Third, this paper adds to previous research on the role that blockholders play in changing CEO compensation. While prior researchers have looked at how the structure of CEO compensation varies with the structure of equity ownership (Mehran, 1995), researchers have not examined whether *changes* in ownership structure cause *changes* in CEO compensation. This study does and finds that when a new outside investor owns a block for more than a year, the board is pressured to increase equity based compensation and decrease total cash payments to the CEO.

The next section of this paper describes the sample and data and follows with a section that reports descriptive characteristics of the block acquisitions. Subsequent sections report the results on changes in the firm around block acquisitions and investigates the new blockholders' holding period. The last section concludes with a discussion of the study's limitations and suggestions for future research.

## SAMPLE AND DATA

Data on blockholders, defined as the ownership of 5% or more of a public corporation's shares, must meet the Securities and Exchange Commission requirements for disclosure. An individual investor or corporation acquiring a block of stock must file a 13D within 10 days of reaching the 5% threshold. The filing must state whether or not the acquisition is for the purpose of changing or influencing the control of the firm. Subsequent 1% changes in ownership interests require an amended 13D. In contrast, institutional investors who become blockholders in the ordinary course of their business and with no intention of changing or influencing control of the firm need only file the simpler 13G form. This study investigates only 13D block acquisitions because such blockholders are more likely to attempt to change the firm's corporate governance than those filing a 13G form.

*Barron*'s, weekly publication, lists all new 13D filings as well as their amendments from the previous week. A sample of 665 13D filings is obtained from the *Barron*'s issues July 3, 1989 to May 28, 1990. To be included in the sample, the firm whose stock is being acquired must have a CUSIP so that accounting data

can be collected from Compustat. This requirement reduces the final sample to 386 filings for 252 firms. Also excluded from the sample were 58 13D filings in which the purchaser could not be identified (sales of blocks). Finally, proxy statements must be available for one year prior to the block acquisition and two years afterwards to identify changes in the composition in the board and compensation of the CEO. This last requirement reduces the sample to 156 transactions of block acquisitions involving 92 different firms. One hundred and two of these acquisitions were made in 1989 and 54 in 1990.

The notation for the years surrounding the block acquisition is $-1$, 0, $+1$, $+2$, with 0 representing the year for the proxy closest to the block acquisition date. Year $-1$, $+1$, $+2$ represent the years before and after the block acquisition. While the data for year 0 is reported, the potential for reporting lags for this year led to its exclusion from statistical tests. Hypothesis tests center around changes in the proxy data from year $-1$ to years $+1$ and $+2$.

Data on CEO compensation includes the CEO's common stock ownership, common stock options granted and total cash compensation. Since the SEC does not require firms to report salary and cash bonuses separately, not all firms in the sample have this information and thus it is not used in tests of changes in CEO incentive compensation. Data on board compensation includes the number of directors and the percentage of outside directors, defined as those with no obvious ties to management. These are non-management directors that exclude retired managers of the firm; members of management's family; banks, lawyers, accountants, trustees, and other business professionals that have a business relationship with management as disclosed in the proxy statement. Compustat provides operating income before depreciation and amortization, EBITDA (item #13), total assets (item #6) and total sales (item #12). Finally, *The Wall Street Journal Company Summary News Index* identifies events related to takeovers, restructurings, and shareholder dissidence for the 12 months prior to the block acquisition and the 12 months afterwards.

## TYPE OF INVESTOR, SIZE OF BLOCK, AND METHOD OF ACQUISITION

I follow Bethel, Liebeskind and Opler (1998) in my classification scheme of types of outside investors that purchase a 5% or greater block. Blockholders are classified as either activist, financial, or strategic. Activist blockholders are those identified by Bethel, Liebeskind and Opler (1998), Denis and Serrano (1996), and Peck (1996) and include "raiders" such as Victor Posner, equity holding companies such as Gabelli Funds, and individuals such as Fayez F. Sarofim.

Financial blockholders are defined as banks, pension funds, non-bank trusts, insurance companies and brokerage firms. Strategic blockholders are miscellaneous corporations such as Archer Daniels Midland Company.

Table 1 reports the type of investors making block acquisitions. The majority of investors making acquisitions are activist blockholders, followed by financial and then strategic buyers. These results are similar to those found by Bethel, Liebeskind and Opler (1998) indicating that the sample has the usual collection of blockholders. Furthermore, to the extent that most of the blockholders in the sample have been characterized as activists elsewhere suggests that our sample has a significant representation of those blockholders that would be most active in corporate governance issues.

Table 1 also reports how the blocks are acquired because the method of acquisition in the sample could explain the results. For example, if most of the acquisitions are negotiated trades, then the selling blockholder may have already instituted corporate governance changes. The method of acquiring the block is defined by the dates of the acquisition and the identity of the seller (in the case of negotiated trades) reported by *Barron's* from the information in the 13D. A negotiated acquisition (about 5% of the sample) is defined as one in which an intact block is transferred from one investor to another. We defined a "block" trade (8% of the sample) as one in which the seller is not identified but the acquisition occurs within one day. In these transactions, it is likely that a larger block is assembled from several smaller ones (see Madhavan & Cheng, 1997). An open market accumulation is defined as one in which there is no identifiable seller and the acquisition takes more than one day. These are the majority (87.18%) of the block acquisitions and on average take between four and five weeks to complete. Thus most of the block acquisitions in the sample represent newly created blocks and reflect a major increase in concentration in outside share ownership. Thus pre-existing outside blockholders are unlikely to have eliminated opportunities to change the firm's corporate governance practices.

Finally, Table 1 reports the size of the block acquired. The typical size is between 10% and 14% depending on the type of investor. Again, the size is comparable to other studies reporting block size (see Denis & Serrano, 1996; Peck, 1996). Thus it is unlikely that the sample includes smaller than usual block purchases leading to lesser incentives for acquirers to change corporate governance practices.

In summary, the type of investors, size of block, and method of acquisition are comparable to those reported by other studies of block acquisitions. Thus there is nothing unusual in the type of block acquisitions in the sample that may provide an explanation for the lack of changes in corporate governance after a block acquisition.

***Table 1.*** Type of Investors and Method of Acquisition for a Sample of 156 blocks for 92 firms from 1989 to 1990.

| | Type of Investor:[a] | | | |
|---|---|---|---|---|
| | Active | Financial | Strategic | Total |
| Method of acquisition[b] | | | | |
| Negotiated trade | 0 | 0 | 7 | 7 (4.49%) |
| Block | 3 | 4 | 6 | 13 (8.33%) |
| Open market accumulation | 64 | 44 | 28 | 136 (87.18%) |
| Average time to accumulate block (median) (calendar days) | 35.97 (34) | 40.36 (31) | 36.13 (32.5) | 38.48 (34) |
| Average size of block (median) (percentage of shares outstanding) | 12.08% (9.99%) | 12.71% (10.545%) | 14.06% (11.22%) | 12.79% (10.33%) |
| Total | 67 (42.95%) | 48 (30.77%) | 41 (26.28%) | 156 (100%) |

[a] Activist blockholders are those identified by Bethel, Liebeskind and Opler (1998), Denis and Serrano (1996), and Peck (1996) and include "raiders" such as Victor Posner, equity holding companies such as Gabelli Funds, and individuals such as Fayez F. Sarofim. My results do not change when I separate these three groups. Financial blockholders are defined as banks, pension funds, and brokerage firms. Strategic blockholders are miscellaneous corporations such as Archer Daniels Midland Company.

[b] A negotiated is defined as one in which an intact block is transferred from one investor to another. A block trade is defined as one in which a seller is not identified but the acquisition occurs within one day. An open market accumulation is defined as one in which there is no identifiable seller and the acquisition takes more than one day to complete.

## CHANGES IN THE FIRM AFTER A BLOCK ACQUISITION

The next sections report: (1) the events that occurred after the new blockholder became a shareholder such as takeovers, restructuring activity, and shareholder dissidence; (2) the replacement of the CEO and changes in the structure of the CEO's compensation; and (3) the changes in the board of directors.

### *Significant Events*

Table 2 reports the events that occur in the year before and after a block acquisition for all block acquisitions in the sample by different types of investors. It shows that there is considerable takeover activity around block acquisitions. Takeover activity includes takeovers that are attempted as well as rumors of impending ones. Other

***Table 2.*** Changes in the Frequency of Firm Events for a Sample of 156 Blocks for 92 Firms from 1989 to 1990.

| | Year −1 | Year +1[a] |
|---|---|---|
| All block acquisitions | | |
| Takeover attempt or rumor | 20 | 33 |
| Shareholders sue management or wage a proxy fight | 8 | 13 |
| Restructuring[b] | 42 | 79*** |
| Active investors ($n = 67$) | | |
| Takeover attempt or rumor | 8 | 18* |
| Shareholders sue management or wage a proxy fight | 0 | 5 |
| Restructuring | 12 | 35*** |
| Financial investors ($n = 48$) | | |
| Takeover attempt or rumor | 6 | 9 |
| Shareholders sue management or wage a proxy fight | 1 | 4 |
| Restructuring | 23 | 26 |
| Strategic investors ($n = 41$) | | |
| Takeover attempt or rumor | 6 | 6 |
| Shareholders sue management or wage a proxy fight | 7 | 4 |
| Restructuring | 7 | 18*** |

[a] Chi-square test is used to test changes in frequency of events in year −1 to year +1.
[b] A restructuring includes spin offs, acquisitions, joint ventures, acquisitions of a large blocks of stock in another company, layoffs, or the closing of units/plants, sales of business units.
* Statistically significant at the 10% level.
*** Statistically significant at the 1% level.

researchers have also found that block acquisitions occur during takeover activity for a variety of reasons: to acquire a "toehold" prior to a takeover attempt (see Holderness & Sheehan, 1985; Mikkelson & Ruback, 1985); to facilitate improvements in firms with failed takeovers (see Bethel, Liebeskind & Opler, 1998; Denis & Serrano, 1996); or to facilitate transfers of control (see Peck, 1996). Table 2 also shows that there is no significant difference in the level of such activity after the acquisition among the various types of investors. This is to be expected since the sample excludes firms that were successfully acquired and no longer report as independent firms board composition or CEO compensation.

Table 2 also reports changes in the frequency of restructuring activity defined as spin offs, acquisitions, joint ventures or acquisitions of a large blocks of stock in another company, layoffs, or the closing of units/plants, and the sales of business units. Table 2 shows that the frequency of restructuring activity increases significantly after a block acquisition and occurs largely after the acquisition of a block by an active investor. Such investors, which include "raiders" with the reputation of sometimes taking over a company, are more likely to pressure management to restructure the operations of the corporations. These findings are consistent with those of Bethel, Liebeskind and Opler (1998) who also report an increase in restructuring events after the purchase of a block by an active investor. Table 2 shows that a significant increase in restructuring activity occurs with strategic investors. This is to be expected as strategic investors cause the firm to strategically realign its assets.

Table 2 also reports any dissident activity by shareholders such as bringing a lawsuit against management or waging a proxy fight. Table 2 shows that these events occur less often than either takeover rumors or attempts at restructurings. This finding is consistent with reports in the financial press that other than public pension funds, most professional investors are not activists in matters of corporate governance.

### *Replacement of the CEO and Changes in CEO Compensation*

Table 3 reports the frequency with which the CEO is replaced and changes in the CEO compensation package after the block acquisition. Table 3 shows that the frequency with which CEOs are replaced is significantly higher in the year following the block acquisition. These results hold for acquisitions by active and financial investors but not for strategic investors. Again these results are similar to those of Bethel, Liebeskind and Opler (1998), Denis and Serrano (1996), and Barclay and Holderness (1991).

The replacement of the CEO is also likely to provide an opportunity to restructure the CEO's compensation contract. Thus blockholders may not only

***Table 3.*** Changes in Frequency of CEO Replacement and Average Compensation Characteristics for a Sample of 156 Blocks for 92 Firms from 1989 to 1990 (Medians Reported in Parenthesis).

| | Year −1 (%) | Year 0 (%) | Year +1 (%) | Year +2[a](%) |
|---|---|---|---|---|
| All block acquisitions | | | | |
| Total cash compensation as a percentage of total assets | 0.36 (0.15) | 0.36 (0.17) | 0.35% (0.14) | 0.42% (0.33) |
| Percentage of options | 0.21 (0.06) | 0.24 (0.04) | 0.35 (0.08) | 0.42*** (0.11) |
| Percentage of stock | 6.75 (3.11) | 6.92 (2.88) | 8.10 (2.86) | 7.43 (3.25) |
| Percentage of CEO replaced from prior year | | 3.21 | 19.23 | 13.46*** |
| Active investors ($n = 67$) | | | | |
| Total cash compensation as a percentage of total assets | 0.39 (0.14) | 0.47 (0.17) | 0.50 (0.13) | 0.65 (0.14) |
| Percentage of options | 0.26 (0.02) | 0.16 (0) | 0.23 (0.08) | 0.29 (0.11) |
| Percentage of stock | 7.02 (4.25) | 6.47 (3.54) | 7.80 (2.79) | 6.81 (2.96) |
| Percentage of CEO replaced from prior year | | 0 | 19.40 | 10.45*** |
| Financial investors ($n = 48$) | | | | |
| Total cash compensation as a percentage of total assets | 0.17 (0.15) | 0.16 (0.13) | 0.19 (0.14) | 0.19 (0.11) |
| Percentage of options | 0.18 (0.05) | 0.20 (0.05) | 0.37 (0.12) | 0.58*** (0.12**) |
| Percentage of stock | 7.41 (1.98) | 7.17 (2.44) | 8.23 (3.61) | 8.66 (3.77**) |
| Percentage of CEO replaced from prior year | | 0 | 16.67 | 22.92*** |
| Strategic investors ($n = 41$) | | | | |
| Total cash compensation as a percentage of total assets | 0.54 (0.23) | 0.41 (0.17) | 0.29 (0.16) | 0.36 (0.17) |
| Percentage of options | 0.18 (0.12) | 0.44 (0.10) | 0.52 (0.05) | 0.40 (0.08) |
| Percentage of stock | 5.50 (1.43) | 7.37 (2.44) | 8.11 (1.24) | 6.80 (0.84) |
| Percentage of CEO replaced from prior year | | 12.20 | 21.95 | 7.32 |

[a] A standard *t*-test is used to test for a significant difference in means between year −1 and year +2. A Wilcoxon Sum Rank test is used to test for a significant difference in medians between year −1 and year +2. The samples are tested for unequal variances and then the appropriate standard *t*-test or Satterthwaite adjusted *t*-test is used depending on the outcome of the test for unequal variances. A chi-square test is used to test for a significant difference in the frequency of CEO replacements in years 0, +1, and +2.

** Statistically significant at the 5% level.

*** Statistically significant at the 1% level.

be involved in removing a poorly performing CEO but also improving a poorly structured compensation contract. Table 3 shows the number of options granted to the CEO as a percentage of the stock outstanding increase in the year following the block acquisition. The increase in stock option grants occurs largely with acquisitions by financial investors as does the significant increase in the percentage of stock held by the CEO.

Two conclusions can be drawn from this finding. First, because approximately only a third of the block acquisitions (48 financial buyers out of 156 total) are associated with a significant increase in stock based compensation it is unlikely that the observed increase for the financial buyers reflects a general trend towards more equity based compensation. Second, and more importantly, it suggests that blockholder activism takes different forms depending on the type of blockholder. In the previous section, it is shown that restructuring activities are more likely to take place when the blockholder is either an active or strategic investor; financial buyers do not appear to increase the amount of firm restructuring. However, they apparently do put pressure to have CEO compensation contracts to include more option grants.

Various correlated omitted variables are explored to determine whether the firms in which financial buyers that purchase blocks of stock are different than those of other investors and whether these differences may be the underlying causes of the observed changes towards the CEO compensation that is more stock based. Differences in firm size (total assets and total sales), firm performance (EBITDA/total assets and EBITDA/total sales), and CEO compensation between block acquisitions by financial investors and all other investors are reported in Table 4.

The table shows that the average size of total assets in year $-1$ for firms where financial investors acquire a stake is \$694 million versus \$1794 million for all other blockholders, a difference statistically significant at the 5% level. Clearly financial investors focus on smaller firms. Bethel, Liebeskind and Opler (1998) find that active blockholders purchase stakes in larger, more diversified firms where there are greater opportunities to increase share value by restructuring the firm's assets. They find no evidence of such activity by financial buyers but they do observe an increase in ROA following an acquisition by a financial buyer. They conclude that financial buyers perhaps engage in "quiet diplomacy" to improve a firm's performance. This study provides evidence that shows that financial buyers' "quiet diplomacy" takes the form of pressuring the board to change the CEO's compensation package to include more equity based incentives.

Alternatively, size may reflect that financial buyers acquire stock in smaller growth oriented firms. Table 4 also shows that EBITDA/total sales is on average higher in years 0 and $+1$ at the 5% and 10% level respectively for firms with

***Table 4.*** Differences in Average Selected Firm Characteristics for Financial Investors versus All other Investors for a Sample of 156 Blocks for 92 Firms from 1989 to 1990 (Medians Reported in Parenthesis).

| | Year −1 | Year 0 | Year +1 | Year +2 |
|---|---|---|---|---|
| Total assets (millions $) | | | | |
| Financial investors | $694.15** ($528.28) | $775.37** ($485.47) | $795.00* ($398.84) | $805.54a,** ($323.55) |
| All other investors | $1,793.61 ($292.76) | $1,847.04 ($295.59) | $1,943.51 ($292.51) | $2,053.45 ($314.78) |
| Total sales (millions $) | | | | |
| Financial investors | $651.31 ($250.83) | $702.73 ($267.50) | $711.99 ($297.56) | $733.87 ($297.54) |
| All other investors | $1,227.28 ($355.83) | $1,295.16 ($329.51) | $1,395.99 ($383.96) | $1,450.88 ($410.90) |
| EBITDA/Total assets | | | | |
| Financial investors | 0.05 (0.05)** | 0.11 (0.08) | 0.07 (0.07) | 0.05 (0.08) |
| All other investors | 0.09 (0.09) | 0.08 (0.05) | 0.06 (0.06) | 0.05 (0.07) |
| EBITDA/Total sales | | | | |
| Financial investors | 0.05 (0.07) | 0.36** (0.07) | 0.19* (0.07) | 0.07 (0.08) |
| All Other investors | 0.06 (0.07) | 0.09 (0.04) | 0.06 (0.04) | 0.06 (0.05) |
| Total cash compensation as a percentage of total assets | | | | |
| Financial investors | 0.17%*** (0.15%) | 0.16%*** (0.13%) | 0.19%** (0.14%) | 0.19%** (0.11%) |
| All other investors | 0.44% (0.16%) | 0.45% (0.17%) | 0.42% (0.15%) | 0.54% (0.17%) |
| Percentage of options | | | | |
| Financial investors | 0.18% (0.05%) | 0.20% (0.05%) | 0.37% (0.12%) | 0.58% (0.12%*) |
| All other investors | 0.23% (0.07%) | 0.26% (0.02%) | 0.34% (0.07%) | 0.33% (0.10%) |
| Percentage of stock | | | | |
| Financial investors | 7.41% (1.98%) | 7.17% (2.44%) | 8.23% (3.61%) | 8.66% (3.77%**) |
| All other investors | 6.46% (4.10%) | 6.81% (3.44%) | 7.91% (2.40%) | 6.80% (2.08%) |

[a] A standard *t*-test is used to test for a significant difference in means between financial and all other investors for each year. A Wilcoxon Sum Rank test is used to test for a significant difference in medians for each year. The samples are tested for unequal variances and then the appropriate standard *t*-test or Satterthwaite adjusted *t*-test is used depending on the outcome of the test for unequal variances.

* Statistically significant at the 10% level.

** Statistically significant at the 5% level.

*** Statistically significant at the 1% level.

financial buyers than all other firms. The spurt in the return on sales suggests these firms may have been smaller ones poised for higher growth. Table 4 also shows that total cash compensation as a percentage of total assets is also statistically less significant for firms with financial buyers than all other firms. Growth firms tend also to compensate CEOs with less cash and more equity based incentives than mature ones (see Smith & Watts, 1992). Thus the possibility that financial buyers invest in small growth firms that coincidentally increase the CEO's stock and stock option awards cannot be ruled out. Furthermore, as discussed later, most financial buyers have divested within a year, making the likelihood that the increase in the CEO's stock based compensation is the result of pressure from these blockholders less plausible.

### *Changes in the Board*

Another important way that blockholders can improve the corporate governance of the firm is by making the board more independent. Prior researchers have shown that a higher percentage of outside directors on the board leads to better monitoring of management (see Brickley, Coles & Terry, 1994; Byrd & Hickman, 1992; Cotter, Shivdasani & Zenner, 1997; Rosenstein & Wyatt, 1990; Shivdasani, 1993; Weisbach, 1988). One way that blockholders can improve the independence monitoring function of the board is to pressure the existing board to add more outsiders. Table 5 reports the change in the percentage of outsiders that are on the board around block acquisitions. The results show that there are no statistically significant changes either for the entire sample of block acquisitions or any of the sub-samples of investor types. Yermack (1996) has shown that smaller boards are more effective. Another way then that blockholders can improve the board is to reduce the number of directors. Table 5 also shows changes in the number of directors around block acquisitions. There are no statistically significant changes for the entire sample of block acquisitions. Only the median number of directors is significantly smaller at the 10% level after the acquisition by a financial investor. The findings reported in Table 5 suggest that for the most part outside blockholders do not seek to change the board of directors, a result consistent with earlier discussion of the obstacles to making longer run changes in corporate governance practices.

An alternative explanation is that blockholders tend to purchase blocks in companies that already have well functioning boards and no changes are warranted. Yermack (1996) finds that firm value is highest for most firms when board size is between four and eight directors. Table 5 shows that the typical number of directors in the sample is at the upper end of this range. Table 5 also

***Table 5.*** Changes in Average Board Composition and Size for a Sample of 156 Blocks for 92 Firms from 1989 to 1990 (Medians Reported in Parenthesis).

| | Year −1 | Year 0 | Year +1 | Year +2 |
|---|---|---|---|---|
| All block acquisitions | | | | |
| Total number of directors | 8.63 (8) | 8.37 (8.5) | 8.48 (8) | 8.53[a] (8) |
| Percentage of outside directors | 62.09% (66.67%) | 63.36% (66.67%) | 63.97% (66.67%) | 64.70% (66.67%) |
| Active investors ($n = 67$) | | | | |
| Total number of directors | 8.46 (7.5) | 8.87 (8) | 8.80 (8) | 8.97 (9) |
| Percentage of outside directors | 63.11% (66.67%) | 63.13% (66.67%) | 63.22% (66.67%) | 64.12% (66.67%) |
| Financial investors ($n = 48$) | | | | |
| Total number of directors | 8.73 (9) | 8.63 (8.5) | 8.02 (8) | 7.9 (8)* |
| Percentage of outside directors | 65.04% (63.96%) | 65.35% (62.5%) | 65.77% (61.54%) | 67.45% (67.86%) |
| Strategic investors ($n = 41$) | | | | |
| Total number of directors | 8.80 (9) | 8.68 (9) | 8.5 (8) | 8.66 (8.5) |
| Percentage of outside directors | 56.89% (58.33%) | 61.41% (66.67%) | 63.05% (72.08%) | 62.02% (72.08%) |

[a] A standard *t*-test is used to test for a significant difference in means between year −1 and year +2. A Wilcoxon Sum Rank test is used to test for a significant difference in medians between year −1 and year +2. The samples are tested for unequal variances and then the appropriate standard *t*-test or Satterthwaite adjusted *t*-test is used depending on the outcome of the test for unequal variances.

* Statistically significant at the 10% level.

shows that the average board has a majority of outside directors and is likely to be already functioning independent of the CEO.

## HOW LONG DO BLOCKHOLDERS STAY AND WHAT ARE THE CONSEQUENCES OF LONGER-TERM INVESTMENTS?

As discussed earlier, one reason that shareholder activism may not take the form of changes in CEO compensation or in the membership of the board is because most professional investors do not own their block long enough to exert pressure on the firm to make these changes or to benefit from them. To investigate this hypothesis, Table 6 reports the number of investors that continue to own a block one and two years after the initial acquisition. Whether the investor continues to own a block or not is determined by whether the shareholder continues to be listed on the firm's proxy statement as a 5% or more blockholder for years +1 and +2.

Table 6 shows that by the end of year +1 only half of all investors continue to own a 5% block. By the second year, this had declined to less than a third. Financial investors are the quickest to sell their blocks – only 25% continue to maintain their investment a year later and only 18% continue their ownership in the firm in the following year. These findings suggest that financial buyers are more likely to acquire stakes in order to capitalize on quick gains. This conclusion is consistent with the evidence in Table 4 that shows that financial buyers tend to invest in firms that are smaller with a spurt in growth.

***Table 6.*** Investors that Continue to Hold a 5% Block after the Initial Acquisition for a Sample of 156 Blocks for 92 Firms from 1989 to 1990 (Medians Reported in Parenthesis).

| | Listed on Proxy Statement in Year +1 | Listed on Proxy Statement in Year +2 | Total |
|---|---|---|---|
| All block acquisitions | 73 (46%) | 45 (28%) | 156 |
| Active investors ($n = 67$) | 37[a,***] (55%) | 19[a,*] (28%) | 67 |
| Financial investors ($n = 48$) | 12 (25%) | 9 (18%) | 48 |
| Strategic investors ($n = 41$) | 24 (58%) | 17 (41%) | 41 |

[a] A chi-square test is used to test for a significant difference in the frequency of type of investors continued to be listed on the proxy statement for year +1 and for year +2.

* Statistically significant at the 10% level.

*** Statistically significant at the 1% level.

Active and strategic buyers maintain their ownership longer. By the end of the second year, 41% of strategic and 28% of active investors still have an ownership stake in the firm. Strategic and active buyers' interests are more likely to be long term compared to financial investors that are more likely to be looking for faster returns to their capital.

Table 6 shows that most investors do not continue to hold their block for long enough to effect changes in the firm's corporate governance practices. What about the smaller number of investors that hold their blocks for longer than a year? Table 7 shows the changes in the structure of CEO compensation and board characteristics for investors that continue to own their block in the firm for at least a year. These results suggest that CEO compensation becomes more equity and less cash based and the board becomes more independent when blockholders continue to maintain their investment in the firm.

Table 7 shows that in firms where active buyers continue to own a block the CEO is more likely to change and the percentage of options granted increases. However, offsetting the incentive effects from an increase in options grants is a decline in stock ownership. Yet, it is likely that as the CEO is granted more options, he or she decreases their stock ownership to diversify their holdings. Furthermore, stock

***Table 7.*** Changes in CEO Compensation and Board Characteristics for Investors that Continue to Hold a 5% Block after the Initial Acquisition for a Sample of 156 Blocks for 92 Firms from 1989 to 1990 (Medians Reported in Parenthesis).

| | Year −1 | Year +1 |
|---|---|---|
| Active buyers | | |
| Total CEO cash compensation as a percentage of total assets | 0.00 (0.00) | 0.00 (0.00) |
| Percentage of CEO options | 0.19 (0.00) | 0.26 (0.14)* |
| Percentage of CEO stock | 7.05 (6.15) | 6.54 (1.64)** |
| Total number of directors | 8.43 (8) | 8.58 (9) |
| Percentage of outside directors | 65.11 (71.43) | 62.58 (69.23) |
| Percentage of CEOs replaced from prior year | | 43.24%*** |
| Strategic buyers | | |
| Total CEO cash compensation as a percentage of total assets | 0.74 (0.35) | 0.00** (0.00) |
| Percentage of CEO options | 0.23 (0.15) | 0.79 (0.09) |
| Percentage Of CEO stock | 4.50 (1.43) | 8.66 (0.69) |
| Total number of directors | 7.61 (7) | 7.91 (8) |
| Percentage of outside directors | 47.38 (50) | 60.62** (58.33)** |
| Percentage of CEOs replaced from prior year | | 29.17% |

*Statistically significant at the 10% level.
**Statistically significant at the 5% level.
***Statistically significant at the 1% level.

holdings are also indicative of past options and stock awards as well as the current structure of the CEO's compensation. Table 7 also shows that the percentage of outside directors on the board increases and that the CEO's total cash compensation decreases when strategic buyers maintain their block ownership in the firm. A decline in cash compensation can reflect a decrease in salary and a move to more equity based compensation. Even though the changes in equity based compensation are not statistically significant, Table 7 shows that the average percentage of options granted increases for these firms in the sample. While not reported in the table, no statistically significant changes are found for the 12 firms where financial buyers maintain their ownership in the firm for one year. Nor are there any statistically significant changes found in CEO compensation or board characteristics for firms where active or strategic buyers sold their block within a year.

Of course, changes in firm size and performance can confound the findings reported in Table 7. For example, total cash compensation can decline because

***Table 8.*** Likelihood that Investors that Continue to Hold a 5% Block after the Initial Acquisition for a Sample of 156 Blocks for 92 Firms from 1989 to 1990 (*p*-Values Reported in Parenthesis).

| Independent Variable | Parameter Estimates from a Logistic Regression |
|---|---|
| Blockholder is a financial buyer | −1.4416 (0.00)*** |
| Blockholder is a strategic buyer | 1.4414 (0.27) |
| Blockholder is an active buyer | 0.00518 (0.99) |
| EBITDA/Total assets year −1 | 4.0861 (0.04)** |
| Total assets (millions $) year −1 | 0.00019 (0.58) |
| Total CEO cash compensation as a percentage of total assets year −1 | 191.3 (0.13) |
| Percentage of CEO options year −1 | −0.4584 (0.29) |
| Percentage of CEO stock year −1 | 0.1440 (0.01)*** |
| Total number of directors year −1 | −0.1091 (0.17) |
| Percentage of outside directors year −1 | −0.0163 (0.43) |
| CEO change from previous year in year +1 | 0.7175 (0.13) |
| EBITDA/Total assets year +1 | −2.4133 (0.25) |
| Total assets (millions $) year +1 | −0.00023 (0.53) |
| Total CEO cash compensation as a percentage of total assets year +1 | −224.9 (0.06)** |
| Percentage of CEO options year +1 | 1.1298 (0.02)** |
| Percentage of CEO stock year +1 | −0.1463 (0.01)*** |
| Total number of directors year +1 | −0.0341 (0.72) |
| Percentage of outside directors year +1 | 0.0120 (0.52) |
| *p*-Value for significance of regression | 0.00 |

** Statistically significant at the 5% level.

*** Statistically significant at the 1% level.

the firm's accounting earnings have declined leading to a lower accounting based cash bonus. Table 8 reports the results of a logit regression that seeks to explain a buyer's decision to maintain their block ownership in the firm and includes corporate governance characteristics as well as measures of firm size and performance. The independent variables in the year before the block acquisition are included since these are likely to influence the level of the independent variables in the year after the block acquisition.[6] In addition, a dummy variable for a change in the CEO in year +1 is included since Farrell and Whidbee (2000) show that CEO changes often lead to changes in the board and changes in the CEO can lead to a restructuring of compensation contracts.

The results in Table 8 show that blockholders are more likely to maintain their investment when cash compensation is lower and the percentage of options granted is higher. These findings suggest that CEO compensation is more likely to become more equity and less cash based when investors continue to hold a block in the firm for more than a year. These changes are likely to increase the CEO's incentives to increase shareholder value. Surprisingly, board size and independence is not significantly related to a buyer's decision to maintain their block holdings for more than a year. However, as mentioned earlier, it is likely that blockholders invest in companies that have well functioning boards that will facilitate their efforts to change the structure of the CEO's compensation.

## CONCLUSIONS, LIMITATIONS, AND SUGGESTIONS FOR FUTURE RESEARCH

This study documents that restructuring and CEO replacements increase significantly after a block acquisition; findings already documented by other researchers. This study extends their results by investigating whether block acquisitions also lead to changes in CEO compensation and board characteristics, important dimensions of the firm's governance practices. The overall pattern of results indicates that purchasers of a block do not play a significant role in improving the independence and effectiveness of the board or increasing the amount of incentive compensation for the CEO. The study also documents that the majority of professional investors have sold their block within a year. This short holding period suggests that professional owners do not own their stock for a long enough period to alter governance policies that require a stockholder's vote at the annual meeting. Nor do blockholders hold their shares long enough to benefit from these changes. We do find, however, that for some firms where investors do maintain their block ownership for more than a year, that CEO compensation becomes less cash and more equity based.

There are two major limitations to the study that provide opportunities for additional research. First, a sample of block acquisitions is used and not a more random sample. A random sample could address additional questions raised by the results of this study. What firm characteristics attract a blockholder and cause an investor to maintain their block holdings or cause an investor to sell? What is the interaction between the type of blockholder, duration of investment, and the nature of the change in the firm's corporate governance policies and restructuring activities? What is the magnitude of the change in shareholder value associated with different types of changes in these policies? These questions can be answered only with a large random sample of firms that includes a broad cross-section of firms with and without a block acquisition and that tracks changes in corporate governance polices, restructuring activities, and other firm characteristics over a long period of time. The results in this study suggest that such an undertaking is worth while and may lead to additional insights into the ways that different types of blockholders influence the firm's corporate governance polices.

A second limitation of the study is that the sample is more than 10 years old. A disadvantage to using an older sample is that the results may not reflect current business conditions and in particular recent pressures for corporate reform. However, there are two advantages to using an older sample. First, the time period of the sample is consistent with that used in many of the important prior studies of blockholders so that the results are comparable (see Holderness, 2003). This comparison is particularly important to ensure that the results of the study are not driven by something unusual about the sample. Second, because corporate reforms have been only enacted recently, it will be some time before there is sufficient data available to test the impact of these reforms. In the mean time, our study examines the extent to which blockholders influence changes in the firm's corporate governance policies without such reforms. This provides a useful benchmark against which the effect of new reforms on blockholders' behavior can be compared when more data becomes available.

However, current proposals are unlikely to lead to different findings. In 2003, the SEC proposed a new rule to make it easier for long-term large shareholders to nominate directors to the board.[7] The hope is that greater shareholder involvement in the creation of the board will lead to improvement in it's oversight function. Yet, the findings of this study suggest that the SEC's proposal will yield, at best, only marginal improvements in corporate governance practices. This study has shown that the majority of large shareholders are *not* long term investors and consequently the SEC's proposal will not apply to them. Corporate reform, then, is unlikely to come from professional money managers since their investment strategy does not give them sufficient incentives to press for longer run changes in the firm's corporate governance practices. Reformers of corporate practices

need to seek their support for the changes they hope to have adopted from other institutions and groups. The exceptions may be the very large public pension funds such as that of California or New York City that are large enough to capture the spillover from improvements and have commitments to public policy objectives. Incentives, such as tax savings, are needed to encourage money managers to make long-term block ownership part of their investment strategy. Otherwise, the rank and file of professional investors is likely to remain in the bleachers in the battle over corporate governance.

## NOTES

1. See "How to Fix Corporate Governance," Special Report – The Crisis in Corporate Governance, *BusinessWeek*, New York, New York, May 6, 2002.
2. See "Investors of the world, unite!" *Fortune*, New York, New York, June 24, 2002.
3. See Dodd and Warner (1983) and "How Shareholder Votes are Legally Rigged," *BusinessWeek*, New York, May 20, 2002.
4. Alignment can either take the form of tendering their shares to the bidder or voting with the bidder at a special meeting of shareholders called to vote on the takeover/merger.
5. Furthermore, CEO replacement and restructuring may lead to greater increases in shareholder value than changes in corporate governance policies. Thus blockholders may be more likely to target firms that are candidates for CEO replacement than firms that are candidates for corporate governance changes. The difference in the increase in shareholder wealth from these two types of changes (if any) is not addressed in this study, but the timing is. See the discussion of this study's limitations in the last section of the paper.
6. Alternatively, the percentage change in these variables could be used as explanatory variables. They are not used since these variables tend to exacerbate the statistical problems created by outliers. For example, a small absolute change in the percentage of options granted can lead to a very large percentage change when the initial level of the options granted is close to zero.
7. See "SEC proposal would give voice to shareholders in board nominations," *Milwaukee Journal Sentinel*, Milwaukee, Wisconsin, October 9, 2003.

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# DOES CORPORATE GOVERNANCE MATTER IN THE MARKET RESPONSE TO MERGER ANNOUNCEMENTS? EVIDENCE FROM THE U.S. AND GERMANY

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**ABSTRACT**

*German executives can make misleading statements regarding merger activities while U.S. executives must either state "no comment" or provide a truthful statement. Do these differences in corporate governance standards cause differences in the market response to merger announcements? A sample of German and U.S. firms that announced acquisition plans between 1995 and 1999 suggests that for smaller firms, merger news has no significant impact on cumulative abnormal returns for German firms but a significant positive impact for U.S. firms. Large German firms, however, have similar experiences to large U.S. firms, as do German firms listed on a U.S. stock exchange, which require greater disclosure requirements. Aside from the smaller-firm effect, the evidence is consistent with no price-relevant differences arising from the differences in corporate governance rules.*

**Corporate Governance**
**Advances in Financial Economics, Volume 9, 103–135**

**ISSN: 1569-3732/doi:10.1016/S1569-3732(04)09005-X**

## 1. INTRODUCTION

This paper addresses the following question: Does the market response to a merger announcement depend upon the regulations applying to corporate disclosure? Cross-country differences in securities laws and enforcement result in countries where firm executives must answer public questions about merger talks truthfully or else offer "no comment" while in other countries it is possible to make statements that the public may view as misleading. Laws and enforcement practices in the United States allow a response of "no comment," but if an agent of a firm chooses to speak about a merger, no misleading statements are permitted. In other countries, securities laws and their interpretation allow for potentially misleading statements by firm executives. Germany offers an example in this regard. Under German practice, an agent may choose to make statements that may be viewed by investors as misleading. Because of the institutional differences, Germany and the United States form a useful cross-country pair to examine the market response to merger announcements in the context of their corporate governance differences.

These differences are illustrated in a recent case brought to the New York federal court. A group of investors sued Deutsche Bank and its CEO, Rolf-Ernst Breuer, claiming that he misled the public on Deutsche Bank intentions regarding the takeover of Bankers Trust Corp. Takeover speculation had led Bankers Trust's stock price to rise about 30% in one week. In an interview that appeared in the German news magazine *Der Spiegel* on October 26, 1998, Mr. Breuer commented that no merger was forthcoming. On that day, Bankers Trust's stock price fell 6%. After the takeover was publicly announced on November 29, the shareholders filed a class action lawsuit against Deutsche Bank, claiming that they had sold the stock in response to Mr. Breuer's comments. Under U.S. law, if Deutsche Bank was, indeed, involved in takeover negotiations, Mr. Breuer was obliged to either make no statements, or else no misleading statements. This is because of the U.S. Supreme Court ruling in 1988, which stated that a firm could be sued if it falsely denied engaging in merger negotiations. For this reason, U.S. executives routinely state "no comment" when asked if they are engaged in takeover negotiations.

The New York judge ruled that a key to the Deutsche Bank case was the meaning of the German word "Übernahmegespräche."[1] The plaintiffs' translator stated that Übernahmegespräche "encompasses a spectrum of talks about a takeover ranging from preliminary, exploratory talks up through and including the formal structured talks understood by . . . [the defendants]." The defendants' translator stated that Übernahmegespräche "refers to a relatively advanced stage of discussions between the two business entities contemplating the purchase of

one by the other." The emphasis of the translations reflects the fact that past U.S. cases have depended upon whether talks were in preliminary or advanced stages. This is a case where U.S. law is interpreted and enforced differently than German law. In Germany, Mr. Breuer's statements did not set off a controversy and legal challenge.

The case of E. On AG, which as a former entity, Veba AG was sued for fraud by the U.S. Securities and Exchange Commission (SEC) for, allegedly, misleading investors by denying merger talks with Viag AG (only days before the merger was announced) represents another example of differences in German-U.S. laws regarding merger statements. Following the SEC's inquiry into the Veba denial, German regulators announced that the SEC inquiry is of no concern in Germany as denying merger talks is not a violation of any German law.

Recently, U.S. attorneys filed a lawsuit against Deutsche Telekom alleging that the company misled investors who bought a new issue of American depositary receipts by not disclosing that it was in advanced talks to buy VoiceStream. The stock offering was on June 19, 2000, and then on July 24, 2000, Deutsche Telekom announced the takeover. The above cases illustrate the differences in how German and U.S. firms provide public information prior to a takeover.

As described above, the differences in corporate governance laws in these two markets make for an interesting case study of the impact of merger news. One would expect that takeover announcements by U.S. firms are more likely to be news and, therefore, embedded in price than in the case of German firms, where the closely-held nature of firms and greater likelihood of insider trading would provide a greater opportunity for trading ahead of the announcement.

To explore the issues raised above, the paper will proceed as follows. Section 2 provides a brief overview of important differences between U.S. and German securities market regulations and practices. Section 3 presents evidence related to the effect of merger announcements in Germany and the United States. Finally, Section 4 provides a summary and conclusions.

## 2. OVERVIEW OF DIFFERENCES BETWEEN GERMAN AND U.S. REGULATIONS AND PRACTICES

This paper does not attempt to provide a comprehensive view of differences in regulations and practices between German and U.S. securities markets. Such an undertaking goes well beyond the scope of this paper.[2] The goal in this section is to highlight the important differences that may affect the impact of merger announcements on share prices. This is accomplished by offering a brief overview of key areas.

### *2.1. Insider Trading*

In 1994, German law established a definition of prohibited insider-trading activities.[3] This was considered a major step, as it was the first time that a legal mandate was specifically established. Prior to the insider-trading law, Germany relied upon voluntary self-regulation as a deterrent to insiders profiting from their private information. In the United States, case law has been used to establish what is considered to be inappropriate behavior by insiders. The U.S. experience does not rely on a list of activities prohibited by government decree, but on the evolving history of case outcomes to establish culpability.

Major banks in Germany assume a key role in the oversight of insider trading.[4] Because of the important role that universal banks play in block share holding and corporate control in Germany, they are in a key monitoring position. Major banks are required to have a compliance officer monitor material events that confer inside information, while at the same time, monitoring security transactions by bank employees. Any questionable activities are to be reported to the federal supervisory office in charge of enforcement. Because insider trades must become public information, executives of U.S. firms are required to report security trades to the SEC.[5]

The U.S. SEC requires anyone guilty of insider-trading to disgorge ill-gained profits. In addition, fines and/or prison sentences may be levied. German law does not require the guilty to return the profits from insider trading, but the guilty parties typically offer to return profits voluntarily as a sign of goodwill to the court to increase the chance of no significant punishment. The German court may order the guilty to make a charitable contribution and can also impose imprisonment. Injured parties suffering damages from insider trading may bring civil suits in both Germany and the United States.

In a recent article devoted to estimating the effect of insider trading laws on the cost of capital across countries, Bhattacharya and Daouk (2002) rated countries from nought (worst) to five (best) in terms of shareholder rights. Countries with a ranking of five included Hong Kong and the United States. Countries with a ranking of one included Colombia, Jordan, Venezuela, Switzerland, and Germany. The fact that two of the wealthiest countries in the world, Germany and the United States, have such different investor protection systems makes for a particularly interesting sample for our purposes.

### *2.2. Role of Banks and Large Blockholders*

Universal banks in Germany play a much larger role in corporate matters than in the United States. Major German banks act as lenders, underwrite share

issues, hold major equity positions, serve as stock exchange market makers, hold corporate board positions, and exercise proxy votes for shares held by small shareholders. This allows the major banks to have a significant advantage in monitoring corporate management performance. Boehmer (2000) analyzed whether the presence of large blockholders and universal banks in Germany, are better situated to oversee management decisions and ensure the quality (and present value) of takeover decisions. This would be in contrast to the U.S. case of more diffused ownership and less oversight of management by shareholders (although with some offsetting benefit of more U.S. minority shareholder protection).[6] Boehmer (2000) finds that majority owners are not associated with better takeover decisions, but large blockholders with less than 50% controlling interest do serve an important monitoring role. In particular, if a bank holds the second- or third-largest stake then takeover quality is improved by their oversight (in terms of shareholder wealth). The most value-reducing takeovers, however, are associated with cases where a bank holds the largest stake in an acquiring firm. In this sense, large bank blockholders do not guarantee better management decisions and may, in fact, be associated with worse decisions from the minority shareholders' perspective.

### *2.3. Role of Labor and Corporate Control*

German laws concerning "Mitbestimmung" or codetermination require that any corporation must reserve one third or one half of the seats on its supervisory board (board of directors) for employee representatives.[7] Corporations (AGs, KGaAs, GmbHs) with more than 2,000 employees are required by the Codetermination Act of 1976 to have a fifty-fifty representation of capital and labor on the board. As with large corporations in the United States, the board oversees and approves major management decisions. Unlike boards in the United States, the German board reduces shareholders' rights to control board voting and oversight of the firm's assets. There is strong evidence that the composition of the board affects shareholder value. Gorton and Schmid (2002) reports an equal representation discount of 26%. In the United States, it is generally thought that those who bear the risks of a firm's performance in terms of equity should have control over outcomes. While there is always debate over the reality of U.S. separation of management and ownership, Germany has institutionalized separation via the worker influence on the board. In addition to the issue of ownership and control, the broader representation on the German board may permit greater leakage of important corporate decisions prior to public knowledge. However, this will assume that capital wants labor to be well informed. Roe (1998) makes a number of arguments that would suggest the opposite to be true. The merger of Daimler/Chrysler is a good example in this regard as shown by Neubauer et al. (2000). Due to the large size of the supervisory

board (20 members), the board of management (*Vorstand*) kept total secrecy about the deal without informing the supervisory board about the progress of the merger deal. The supervisory board was officially informed on May 6, 1998, i.e. one day before the joint press conference in London.[8] The management board of Daimler agreed on the fact that the deal would be dead if the supervisory board had been informed in time.

### *2.4. Accounting Regulations*

U.S. and German accounting regulations differ in terms of pension costs, goodwill, asset reserves, asset revaluation, foreign currency translation, and tax issues. Also, German firms were not required to provide a cash flow statement in their financial statements. Since at least 1998, German business combinations (*Konzerne*) are obligated to disclose a cash flow statement within the annex of notes if the firm is listed on an organized securities market according the definition of the Securities Trading Act (*WpHG*).[9] Key differences between U.S. Generally Accepted Accounting Principles (GAAP) and German accounting regulations were highlighted when Daimler-Benz listed on the New York Stock Exchange in 1993.[10] Such listings require filing financial statements with the SEC that fully conform to U.S. GAAP. Under German accounting standards, Daimler-Benz reported a 1993 profit of DM168 million. Under U.S. GAAP, the firm reported a loss of almost a billion marks for the same period. While it is known that such dramatic outcomes as in the Daimler Benz case are not generally found, it serves to underscore that the quality of public disclosure may differ considerably across countries when firms are held to different accounting standards.

### *2.5. Public Disclosure of Takeovers*

Before January 1995, German acquirers were not required to publicly announce their interests in acquiring another company.[11] As discussed in Boehmer (2000), acquirers were required to notify the target management if they intended to acquire more than 25% of the target's voting rights. No public announcement or statement to target shareholders was required. This changed in January 1995, when firms listed on the German stock market faced a public notification requirement. As discussed in the introduction, while Germany has a regulation requiring public disclosure, this regulation has been interpreted quite liberally, so that public statements may not be made until the deal is arranged. Further, a German executive may deny takeover rumors even though negotiations are ongoing. This may allow for

a long window of opportunity for insiders to exploit the knowledge that takeover talks are progressing. As stated in the introduction, U.S. firms must disclose truthfully if they make any public statements regarding takeover talks or else state "no comment."

## 3. EMPIRICAL ANALYSIS

In this section we examine the differences in the market response to takeover announcements in Germany and the United States. We will first discuss the methodology used for estimation and then discuss the data set before proceeding to the results.

### *3.1. Methodology*

We use a standard event-study methodology to estimate abnormal returns around takeover announcements. Our event period is from five days prior to the news to five days after the news. Normal returns are established by estimating a standard market model for a pre-event sample of 150 business days prior to the event period. The model estimated is:

$$R_{it} = a_i + b_i R_{mt} + e_{it} \quad \text{with } E(e_{it}) = 0 \quad \text{and} \quad \text{Var}(e_{it}) = \sigma_{ei}^2 \tag{1}$$

where $R_{it}$ denotes the return on firm $i$'s stock at time $t$; $R_{mt}$, the market return at time $t$; $a$ and $b$ are coefficients to be estimated and $e$ is the error term for security $i$. With the coefficient estimates $\hat{a}$ and $\hat{b}$ from Eq. (1), the abnormal return during the event period is given by:

$$AR_{it} = R_{it} - \hat{a} - \hat{b}_i R_{mt} \tag{2}$$

A $t$-statistic for the abnormal returns is found by dividing $AR_{it}$ by the estimated standard error of the regression $\sigma_{ei}^2$.

Hypothesis tests on the abnormal returns for a cross-section of firms can be performed by averaging the abnormal returns across firms for each day in the event period: $AR_t = \sum_i AR_{it}/N$, where $N$ is the number of firms. Tests of the persistence of the abnormal return can be performed on the cumulative abnormal return, which is the sum of the daily abnormal returns between the period $t2 - t1$:

$$\text{CAR}_{i,t2-t1} = \sum_{t=t1}^{t2} AR_{it}.$$

Hypothesis testing is based upon the following $Z$ score:

$$Z = \frac{\overline{\mathrm{CAR}}(t1, t2)}{[\sigma_i^2(t1, t2)]^{1/2}} \sim N(0, 1), \quad \text{where } \sigma_i^2 = (t2 - t1 + 1)\sigma_{ei}^2.$$

### *3.2. Data*

We assembled a sample of German and U.S. firms that announced acquisition plans over the 1995–1999 period. 1995 was chosen as the starting year because the insider-trading law in Germany was instituted in 1994 and in force all of 1995. First, we compiled a list of all U.S. acquirer firms listed on the New York Stock Exchange (NYSE) in the United States and all German acquirer firms listed as public companies in Germany. The U.S. data source is the SDC Worldwide Mergers and Acquisitions database. The German data are from Thomson Financial.[12] Next, we identified the largest 50 U.S. acquirer firms in terms of market capitalization and the top 50 German acquirer firms in terms of trading volume. There were some problems with determining firm size correctly in Germany, but the stock volume data are not open to interpretation and indicate those German firms that command significant attention from investors.[13] Table 1 lists the German acquirer firms along with the date of the announcement, and the target firm where Table 2 provides the same information for the U.S. firms.

Daily closing stock prices were gathered for each U.S. firm from the Center for Research in Security Prices (CRSP) and used to estimate the abnormal returns. For the German stock market, daily closing prices were taken from the capital market database at the University of Karlsruhe.[14] The market return for the U.S. firms is taken as the S&P 500 index return, whereas for German firms the DAX 100 index return is used. The estimation for each firm uses only non-overlapping periods. The results may be biased if the "normal" return period for one firm event includes the day of another event for that firm.[15] As can be seen in Tables 1 and 2, big acquirer firms are involved in multiple mergers during our sample period.

### *3.3. Estimation Results*

In order to efficiently summarize a large number of estimation results, we first present the cross-firm average cumulative abnormal returns (CARs) for the merger news event day (day nought) and five days before and after the event day in Figs 1a and b.

***Table 1.*** German Acquirer Firms.

| Date | Acquirer | Target |
|---|---|---|
| 19950125 | Dresdner Bank AG | Kleinwort Benson Group PLC |
| 19950125 | VEBA AG | Cable & Wireless PLC |
| 19950209 | Bilfinger & Berger Bau AG | Entreprise Razel Freres |
| 19950210 | Hoechst AG | Caraplas Ltd-Production Rights |
| 19950210 | Bayerische Vereinsbank AG | Undisclosed Polish Banks (2) |
| 19950227 | BASF AG | DuPont-Idemitsu (EI du Pont) |
| 19950227 | Gehe AG (Franz Haniel & Cie) | AAH PLC |
| 19950228 | Hoechst AG | Marion Merrell Dow Inc |
| 19950228 | Siemens AG | Jeil Hitech |
| 19950313 | Bayer AG | Florasynth Inc |
| 19950315 | Deutsche Bank AG | Societe Generale Surveillance |
| 19950316 | Daimler-Benz AG | ABB Asea Brown Boveri-Worldwid |
| 19950322 | Bilfinger & Berger Bau AG | B & B Asia (Bilfinger & Berger) |
| 19950413 | Siemens AG | Simko Ticaret ve Sanayi (Sieme) |
| 19950414 | Daimler-Benz AG | Mercedes-Benz Italia SpA |
| 19950421 | Bremer Vulkan AG | Shanghai Edward Shipbuilding |
| 19950428 | Daimler-Benz AG | Swissmetro AG |
| 19950428 | Commerzbank AG | Capital Investment Trust Corp |
| 19950512 | VIAG AG | Suedgas |
| 19950516 | Commerzbank AG | Prima Property Trust Ltd |
| 19950523 | Linde AG | Technoplyn Prague AS (Linde AG) |
| 19950531 | Bayerische Motoren Werke AG | Designworks/USA (Bayerische) |
| 19950531 | Linde AG | Linde Technoplyn (Linde AG) |
| 19950616 | Allianz AG | Legal & General Group PLC |
| 19950622 | Allianz AG | Assurances Federales IARD |
| 19950630 | VIAG AG | SBI Systems Bio-Industries SA |
| 19950630 | Volkswagen AG | Dead Sea Works-Sodom Plant |
| 19950704 | Siemens AG | Amper Telematica, Amper Datos |
| 19950707 | Bayerische Vereinsbank AG | Bank Rozwoju Energetyki |
| 19950710 | Bayerische Hypotheken | Wielkopolski Bank Rolniczy |
| 19950712 | Bayer AG | Miles India Ltd |
| 19950728 | Bayer AG | Agritech Saigon |
| 19950728 | Hochtief AG (RWE AG) | POZ Building Ltd |
| 19950801 | Muenchener Rueckversicherungs | Mercury Asset Management PLC |
| 19950804 | Siemens AG | Modern Engineering & Consultan |
| 19950815 | MAN AG | Simac Spa |
| 19950829 | Bilfinger & Berger Bau AG | Baulderstone Hornibrook (AW) |
| 19950830 | SGL Carbon AG (Hoechst AG) | Polgraph SA (Bank Handlowy SA) |
| 19950831 | Commerzbank AG | Hambros Bank Ltd (Hambros PLC) |
| 19950901 | Deutsche Lufthansa AG | Air Dolomiti |
| 19950914 | Bayerische Vereinsbank AG | MegaBank Financial |
| 19950914 | Allianz AG | Riunione Adriatica di Securita |
| 19950915 | Thyssen AG | PlusNET (MDS Hldg/Alcatel STR) |
| 19950925 | Siemens AG | Ornet Data Commun Technologies |

***Table 1.*** (*Continued*)

| Date | Acquirer | Target |
|---|---|---|
| 19950927 | Bayer AG | Myriad Genetics Inc |
| 19950928 | Deutsche Bank AG | Finanza & Futuro (Deutsche Bk) |
| 19950928 | Allianz AG | Lloyd Adriatico SpA |
| 19951004 | RWE AG | ENDESA (SEPI/Spain) |
| 19951004 | Allianz AG | Hungaria Biztosito (Allianz AG) |
| 19951026 | Bremer Vulkan AG | ECA SARL |
| 19951026 | Gehe AG (Franz Haniel & Cie) | Laboratoires Gallier SA |
| 19951030 | BHF Bank AG | TIR Holdings Ltd |
| 19951102 | Dresdner Bank AG | St Petersburg Govt-Grand Hotel |
| 19951106 | Siemens AG | ATM dd |
| 19951107 | Bayerische Vereinsbank AG | Oppenheimer (Oppenheimer Group) |
| 19951109 | Metallgesellschaft AG | Metallgesellschaft Ltd |
| 19951114 | Bayer AG | Monsanto Co-Styrenics Plastics |
| 19951115 | Daimler-Benz AG | Daimler-Benz Holding France |
| 19951124 | BASF AG | Undisclosed Bulgarian Chemical |
| 19951129 | Allianz AG | Manufacturers Mutual Insurance |
| 19951201 | Dresdner Bank AG | RCM Capital Mgmt (Travelers) |
| 19951201 | Siemens AG | Arche Communications |
| 19951207 | Daimler-Benz AG | AEG Oesterreich (AEG AG) |
| 19951208 | Hochtief AG (RWE AG) | KPIS-Cracovia SA |
| 19951215 | Buderus AG | Tiroler Roehren-und |
| 19951222 | Allianz AG | Duerrevita |
| 19951229 | Hoechst AG | Grafitos Electricos |
| 19951229 | RWE AG | Emasz (Hungary) |
| 19951229 | Kaufhof AG | WestBTL Handel-Beteiligungs |
| 19960102 | Beiersdorf AG | Tyco Intl-Curad and Futuro |
| 19960102 | Allianz AG | Feder 01 |
| 19960119 | Linde AG | Praxair Inc-Linde Trademark |
| 19960131 | Preussag AG | Elco Looser Holding AG |
| 19960201 | Siemens AG | Italtel Telematica |
| 19960205 | Daimler-Benz AG | Mercedes-Benz Mexico (Daimler) |
| 19960213 | RWE AG | Tlakova Plyarna Usti |
| 19960227 | Renk AG (MAN AG) | Renk Resita SA |
| 19960315 | Degussa AG | Muro Pharmaceuticals Inc |
| 19960326 | Allianz AG | Berner Holding AG |
| 19960327 | Merck AG | Seven Seas Ltd (Hanson PLC) |
| 19960508 | BASF AG | Zeneca Textile Color (ZENECA) |
| 19960508 | Hoechst AG | SGL Technic (SGL Carbon/Hoesch) |
| 19960508 | VEBA AG | Rhone-Poulenc-Division |
| 19960515 | Preussag AG | Albania-Chrome Industry |
| 19960517 | Hoechst AG | Plastics Materials Company Inc |
| 19960517 | Siemens AG | Amper Telematica, Amper Datos |
| 19960524 | Commerzbank AG | Security Capital Group Inc |
| 19960611 | Siemens AG | Geros-Kabel |

***Table 1.*** (*Continued*)

| Date | Acquirer | Target |
|---|---|---|
| 19960614 | Commerzbank AG | Wood & Co |
| 19960618 | Merck AG | Willi Fisher oHG |
| 19960701 | Hoechst AG | Polymer Color |
| 19960704 | Bayer AG | Sclavo SpA-Siena-Bellaria Unit |
| 19960708 | Siemens AG | Elcaro SA |
| 19960712 | Mannesmann AG | Italimpianti-Steel Engineering |
| 19960716 | Schering AG | Leiras (Huhtamaki Oy) |
| 19960731 | Hoechst AG | Hoechst Marion Roussel Ltd |
| 19960809 | SAP AG | IntelliCorp |
| 19960814 | Muenchener Rueckversicherungs | American Re Corp |
| 19960905 | Allianz AG | Allianz-Ultramar |
| 19960917 | Deutsche Bank AG | 21 Investimenti (Edizione Hldg) |
| 19960920 | Siemens AG | Fuji Electric Components (Fuji) |
| 19960926 | Mannesmann AG | CEGETEL (Generale des Eaux) |
| 19960927 | BASF AG | Sandoz AG-US and Canada Corn |
| 19961002 | Mannesmann AG | Omnitel Sistemi Radiocellulari |
| 19961004 | Commerzbank AG | Eurocorp International Finance |
| 19961009 | Siemens AG | Ingelsar Ingeneria Electrica |
| 19961014 | Deutsche Bank AG | Princess Resources Ltd |
| 19961114 | Bayerische Hypotheken | Foreign & Colonial Mgmt Ltd |
| 19961121 | Allianz AG | Manufacturers Mutual Insurance |
| 19961210 | Hoechst AG | Roussel-Uclaf SA (Hoechst AG) |
| 19961219 | Deutsche Bank AG | Irmaos Guimaraes (Banco Irmaos) |
| 19961223 | Siemens AG | Elektrowatt AG |
| 19970108 | Bayer AG | Central Polimeros da Bahia SA |
| 19970120 | Degussa AG | Carbochem (Poland) |
| 19970124 | Allianz AG | Fichet-Bauche SA |
| 19970130 | Hoechst AG | Plastocoat Srl |
| 19970131 | Dresdner Bank AG | SES ASTRA SA |
| 19970131 | Siemens AG | Broadband Networks Inc |
| 19970217 | Deutsche Bank AG | Xavier Corp |
| 19970219 | Commerzbank AG | Montgomery Asset Management |
| 19970310 | Commerzbank AG | Banque Marocaine du Commerce |
| 19970314 | Metro AG | Vobis Microcomputer (Metro AG) |
| 19970317 | Mannesmann AG | United Steel Mills (Koor Inds) |
| 19970317 | Siemens AG | Siemens South Africa (Siemens) |
| 19970319 | Merck AG | Merck Generics BV (Merck E) |
| 19970324 | Linde AG | Jihostroj Velesin-Cesky |
| 19970324 | Preussag AG | Chaffoteaux et Maury (Elfi SA) |
| 19970326 | Commerzbank AG | Montgomery Securities-Money |
| 19970404 | Degussa AG | Agrolinz Melamin Italia Srl |
| 19970409 | Siemens AG | Parsons Power Generation Sys |
| 19970414 | Daimler-Benz AG | Ballard Power Systems Inc |
| 19970430 | BASF AG | Dow Benelux NV-Engine Coolant |

***Table 1.*** (*Continued*)

| Date | Acquirer | Target |
|---|---|---|
| 19970430 | Metallgesellschaft AG | Cerro Sales Corp |
| 19970502 | Deutsche Bank AG | Axiom Funds Management Corp |
| 19970509 | BASF AG | Kutnowskie Zaklady-Veterinary |
| 19970509 | Porsche AG | Porsche Italia SpA (Porsche AG) |
| 19970526 | Siemens AG | Hydraulik-Ring Beteiligungs |
| 19970612 | Thyssen AG | Giddings & Lewis Inc |
| 19970612 | Deutsche Lufthansa AG | Air Littoral |
| 19970624 | Daimler-Benz AG | Meris & Cie SA |
| 19970709 | Linde AG | Radford Retail Systems (Wagon) |
| 19970718 | Metro AG | Makro Holdings-European |
| 19970723 | SGL Carbon AG (Hoechst AG) | Hitco Technologies |
| 19970731 | Degussa AG | EI du Pont-Worldwide Hydrogen |
| 19970808 | Siemens AG | Siemens Automotive Systems |
| 19970814 | VIAG AG | Finesca SA |
| 19970814 | Commerzbank AG | Bank Rozwoju Eksportu |
| 19970820 | Bayer AG | Bayer Premier Co Ltd (Bayer AG) |
| 19970827 | Deutsche Telekom AG | Ing C Olivetti & Co SpA |
| 19970827 | Mannesmann AG | Nuova Solmine SpA (Enirisorse) |
| 19970901 | Daimler-Benz AG | Micro Compact Car AG |
| 19970905 | Mannesmann AG | Olivetti Mobile Telephone |
| 19970916 | Adidas AG | Salomon SA |
| 19970916 | Degussa AG | Ney Dental International Inc |
| 19970916 | Muenchener Rueckversicherungs | Syndicate 457 Capital Ltd |
| 19970922 | Douglas Holding AG | Sephora (LVMH Moet Hennessy) |
| 19970923 | Muenchener Rueckversicherungs | Reale Riassicurazioni |
| 19970930 | Thyssen AG | Electrodinox |
| 19971010 | Hochtief AG (RWE AG) | Ballast Indonesia Construction |
| 19971015 | Siemens AG | Breed Technologies Inc |
| 19971113 | Siemens AG | Westinghouse-Conven Power Gen |
| 19971117 | Allianz AG | AGF |
| 19971201 | Merck AG | Kemifarma |
| 19971209 | BASF AG | Hanwha BASF Urethane |
| 19971217 | Bayerische Vereinsbank AG | FGH Hypotheekbank NV (Aegon) |
| 19971231 | Daimler-Benz AG | Micro Compact Car France |
| 19980107 | BASF AG | Schon Trykfarver A/S-Printing |
| 19980108 | Dresdner Bank AG | Sopockie Towarzystwo |
| 19980112 | Bayer AG | Canvet Ltd |
| 19980113 | Deutsche Bank AG | EL&C Baillieu Ltd |
| 19980130 | Preussag AG | Palette Rouge |
| 19980204 | Dresdner Bank AG | Kleinwort Benson Iberfomento |
| 19980210 | MAN AG | SEMT Pielstick (Daiml-Benz, Man) |
| 19980213 | Degussa AG | Qingdao Degussa Chemical Co |
| 19980217 | Allianz AG | National Ins Co of Brunei |
| 19980226 | Metro AG | Allkauf SB-Warenhaus GmbH and |

***Table 1.*** (*Continued*)

| Date | Acquirer | Target |
|---|---|---|
| 19980303 | Mannesmann AG | Tele.Ring |
| 19980318 | BASF AG | Daesung Corp-Lysine Unit |
| 19980318 | MobilCom AG | Cellway (Martin Dawes) |
| 19980323 | Siemens AG | Cegielski SA (Poland) |
| 19980326 | Merck AG | Pharmaceutical Resources Inc |
| 19980330 | Bayerische Motoren Werke AG | Rolls-Royce Motor Cars Ltd |
| 19980330 | Bayerische Vereinsbank AG | Banco Popular Espanol SA |
| 19980401 | Fresenius Medical Care AG | Tek Systems Inc |
| 19980402 | Volkswagen AG | Rolls-Royce Motor Cars Ltd |
| 19980403 | BASF AG | Clariant AG-Superabsorber Bus |
| 19980403 | Bayer AG | W Hawley & Son-Pigment Bus |
| 19980408 | Daimler-Benz AG | Eurostar |
| 19980421 | Linde AG | Serai do Brasil SA |
| 19980423 | SAP AG | ILOG SA |
| 19980423 | Metro AG | Kaufhalle AG (Kaufhof AG) |
| 19980428 | Mannesmann AG | Citykom |
| 19980504 | Commerzbank AG | Security Capital Group Inc |
| 19980506 | Daimler-Benz AG | Chrysler Corp |
| 19980518 | Gehe AG (Franz Haniel & Cie) | Office Coml Pharmaceutique |
| 19980520 | Daimler-Benz AG | Nissan Diesel Motor Co Ltd |
| 19980602 | Volkswagen AG | Same Lamborhini-Hurlimann |
| 19980604 | Deutsche Telekom AG | Isla Communications (Asiacom) |
| 19980618 | Volkswagen AG | Bugatti Automobili |
| 19980629 | Degussa AG | Silquimica SA (Degussa/Genaral) |
| 19980629 | Thyssen AG | Comercial de Aceros Heva SA |
| 19980630 | Siemens AG | Elektro MAR |
| 19980708 | Deutsche Bank AG | Credit Lyonnais Belgium |
| 19980709 | Dresdner Bank AG | Credit Lyonnais-Swedish |
| 19980720 | Deutsche Telekom AG | France Telecom SA (France) |
| 19980721 | BASF AG | Ciba Speciality Chem-Chelates |
| 19980722 | Allianz AG | Adriatic Osiguranje |
| 19980730 | Siemens AG | Original Electromechanical Grp |
| 19980731 | Metro AG | Emil Kriegbaum GmbH und Co KG |
| 19980806 | Allianz AG | Towarzystwo Ubezpieczeniowe |
| 19980811 | Dresdner Bank AG | PaineWebber Group Inc |
| 19980824 | Hannover Rueckversicherungs | Clarendon America Insurance Co |
| 19980904 | Hoechst AG | Handok Pharmaceuticals |
| 19980911 | Hoechst AG | Hoechst South Africa Ltd |
| 19980916 | Bayer AG | Chiron Diagnostics Corp |
| 19980917 | Metro AG | Importgesellschaft Gemex |
| 19980918 | Mannesmann AG | Olivetti Mobile Telephone |
| 19980924 | Deutsche Bank AG | Banca Commerciale Italiana SpA |
| 19980924 | Bayer AG | Millennium Pharmaceuticals Inc |
| 19981001 | Merck AG | Rohrbeck |

***Table 1.*** (*Continued*)

| Date | Acquirer | Target |
|---|---|---|
| 19981001 | Volkswagen AG | Autoeuropa Automoveis Lda |
| 19981002 | Siemens AG | Matra Transport International |
| 19981007 | Bayerische Vereinsbank AG | Bank Przemyslowo-Handlowy SA |
| 19981007 | Allianz AG | AGF Union-Fenix (Assurance Gen) |
| 19981009 | Daimler-Benz AG | Thomas Built Buses Inc |
| 19981012 | Degussa AG | Solquimica |
| 19981012 | Merck AG | Neuber GmbH-Laboratory |
| 19981013 | Deutsche Bank AG | Boullioun Aviation Services |
| 19981016 | Bayer AG | Haldia Petrochemicals |
| 19981020 | BASF AG | DSM NV-ABS Business |
| 19981023 | Degussa AG | Insilco Ltd |
| 19981029 | Hoechst AG | Rhone-Poulence Ltd. |
| 19981029 | Linde AG | Gephal SA |
| 19981030 | Degussa AG | Ceramic Materials (Philips) |
| 19981030 | Metro AG | Vorteilkauf V-Stores (14) |
| 19981030 | Allianz AG | MMI Ltd (Allianz AG) |
| 19981105 | Daimler-Benz AG | Micro Compact Car AG |
| 19981109 | Commerzbank AG | Assicurazioni Generali SpA |
| 19981116 | Linde AG | Millenium Petrochemicals-Int |
| 19981117 | VIAG AG | Alusuisse Lonza Group Ltd |
| 19981117 | Allianz AG | Bulgaria Holdings |
| 19981120 | Degussa AG | LG Chemical Co Ltd-Carbon |
| 19981126 | Siemens AG | Amper Elasa SA (Siemens AG) |
| 19981127 | BASF AG | Dongsong Chem-Plastic Plant |
| 19981130 | Deutsche Bank AG | Bankers Trust New York Corp |
| 19981216 | BASF AG | Quadrant Holding |
| 19981216 | Merck AG | Lexigen Pharmaceuticals Corp |
| 19981221 | Allianz AG | AGF Irish Life Corp |
| 19981223 | BASF AG | Dong Seong-Polyurethane Op |
| 19981223 | Preussag AG | Thomas Cook Group Ltd |
| 19981223 | Siemens AG | Courbon SA |
| 19990106 | Deutsche Bank AG | Unicredito Italiano |
| 19990106 | Linde AG | Airgas Inc-Polish Ind Gas Bus |
| 19990118 | BASF AG | Svalof Weibull AB |
| 19990128 | Siemens AG | Itron |
| 19990204 | Deutsche Bank AG | Newcourt Credit Group USA Inc |
| 19990205 | Bayer AG | DSM NV-Transparent Sheet Bus |
| 19990205 | Commerzbank AG | KEB Investment Tr Mgmt Co Ltd |
| 19990211 | DaimlerChrysler AG | Thonburi Automobile Assembly |
| 19990212 | Commerzbank AG | Majan International Bank |
| 19990219 | Deutsche Telekom AG | max.mobil.Telekommunikation |
| 19990219 | Mannesmann AG | Ing C Olivetti-Telecom Int |
| 19990222 | Commerzbank AG | ADIG Investment Luxemburg SA |
| 19990226 | Degussa AG | Fermal Sro |

***Table 1.*** (*Continued*)

| Date | Acquirer | Target |
|---|---|---|
| 19990303 | Schering AG | Aventis Crop Science |
| 19990304 | EM.TV & Merchandising AG | Yoram Gross Film Studios Pty |
| 19990305 | DaimlerChrysler AG | Harry Karlsson Bilimport AB |
| 19990305 | Siemens AG | Castle Networks |
| 19990309 | Bayer AG | PBI Home & Garden Ltd (Sumitomo) |
| 19990315 | Deutsche Telekom AG | Isla Communications (Asiacom) |
| 19990318 | Siemens AG | RedStone Communications Inc |
| 19990319 | Bayer AG | Bayer Sankyo Co |
| 19990331 | Deutsche Lufthansa AG | SH & E |
| 19990401 | Linde AG | Criosbanc SpA |
| 19990406 | BASF AG | BP Amoco-Global Polyethylene |
| 19990517 | Deutsche Telekom AG | Polska Telefonia Cyfrowa Sp |
| 19990518 | Siemens AG | Elsag Bailey-Gas Chromatograph |
| 19990518 | Commerzbank AG | Banco Santander Central Hispan |
| 19990519 | Hoechst AG | Celanese Canada Inc |
| 19990528 | Deutsche Bank AG | Orbis SA |
| 19990602 | Allianz AG | Eagle Star President Life |
| 19990608 | Deutsche Bank AG | Ergobank SA |
| 19990608 | Merck AG | Apotec |
| 19990614 | Commerzbank AG | Credit Lyonnais SA (France) |
| 19990625 | Siemens AG | Phone.com Inc |
| 19990709 | DaimlerChrysler AG | Volvo AB |
| 19990712 | Merck AG | Silicon Valley Chemlabs Inc |
| 19990716 | Fresenius Medical Care AG | St John Dialysis Network |
| 19990723 | Allianz AG | Berner Versicherung |
| 19990726 | Fresenius Medical Care AG | Kolon Pharmaceutical Inc-Dialy |
| 19990730 | Kinowelt Medien AG | Alliance Atlantis Comm Inc |
| 19990730 | Linde AG | ABC Synergie SA |
| 19990803 | Siemens AG | Italtel-Mobile Network |
| 19990804 | Allianz AG | Shin Dong AH Fire & Marine |
| 19990806 | Deutsche Telekom AG | One-2-One |
| 19990813 | Linde AG | AGA AB |
| 19990830 | Continental AG | Moscow Tire Works |
| 19990831 | Siemens AG | Yaskawa System Engineering |
| 19990913 | Dresdner Bank AG | Ernst & Young Trust Co |
| 19990915 | Aixtron AG | Thomas Swan & Co-Scientific |
| 19990917 | Commerzbank AG | Bank Handlowy SA |
| 19990922 | Deutsche Lufthansa AG | Air Dolomiti |
| 19991004 | Deutsche Telekom AG | Hrvatske Telekomunikacije {HT} |
| 19991005 | Deutsche Bank AG | Bank Wspolpracy Regionalnej SA |
| 19991005 | EM.TV & Merchandising AG | Plus Licens AB |
| 19991006 | Allianz AG | PIMCO Advisors Holdings LP |
| 19991008 | Aixtron AG | Epigress AB |
| 19991011 | Siemens AG | NeoPoint Inc |

***Table 1.*** (*Continued*)

| Date | Acquirer | Target |
|---|---|---|
| 19991015 | DaimlerChrysler AG | Ssang Yong Motor-Van Division |
| 19991019 | Mannesmann AG | Orange PLC |
| 19991021 | Allianz AG | Zagrebacka Banka |
| 19991022 | Deutsche Telekom AG | Russian Telecommunications |
| 19991025 | Deutsche Bank AG | Chase-Dutch Auction Bus |
| 19991028 | RWE AG | Emasz (RWE AG) |
| 19991029 | Allianz AG | PIMCO Advisors LP |
| 19991103 | Metro AG | Der Praktiker Bau und |
| 19991105 | Deutsche Bank AG | Alkaloid |
| 19991109 | Deutsche Lufthansa AG | British Midland Airways Ltd |
| 19991116 | Dresdner Bank AG | Ad Gestioni Sgr |
| 19991116 | Bayer AG | Lyondell Chemical-Polyils Bus |
| 19991117 | Deutsche Telekom AG | SIRIS SAS (Unisource, CGE) |
| 19991118 | BASF AG | BASF-Suemerbank Tuerk Sanayii |
| 19991126 | Volkswagen AG | Europcar International SA |
| 19991201 | BASF AG | Sunsmart Inc-Zinc Oxide Bus |
| 19991203 | Siemens AG | CKD Praha Holdings |
| 19991207 | Commerzbank AG | INA |
| 19991214 | ConSors Discount Broker AG | Siaga |
| 19991215 | Muenchener Rueckversicherungs | Orel |
| 19991216 | SAP AG | ID2(LM Ericsson Telefon AB) |
| 19991217 | Siemens AG | CKD Dopravni Systemy |
| 19991221 | BASF AG | Morton Industrial Coatings |

Two standard error bounds are drawn around the CARs. Figure 1a illustrates that in the case of abnormal returns for German firms, the CARs are all positive and on days −3 and 0 one can reject the hypothesis that the CARs equal zero. For U.S. firms, Fig. 1b shows that the CARs are statistically significantly negative for days −4 to 0 and then significantly positive on days 3–5. So a cross-firm average of CARs suggests that the market anticipates the merger news in both countries, although the effect of an anticipated merger is negative for U.S. firms and positive for German firms. Then on the day of the news, the CAR is positive for share prices in Germany, but stays negative for the U.S. prices. In the U.S. case, there is a follow-on effect in days after the news of a positive impact on share prices.

One interpretation of the results summarized in Figs 1a and b is that the abnormal returns in Germany before the merger announcement properly anticipate the effect of the news as there is a positive CAR on day −3 and then a positive CAR on the event day. So German trading prior to the event may reflect a proper discounting of the forthcoming event. In the U.S. case, the abnormal returns reflect trading prior to the news that appears to incorrectly anticipate the sign of

***Table 2.*** U.S. Acquirer Firms.

| Date | Acquirer | Target |
|---|---|---|
| 19950104 | Johnson and Johnson | Mitek Surgical Products |
| 19950426 | Johnson and Johnson | Joint Medical Products Corp |
| 19950605 | International Business Machines | Lotus Development Corp |
| 19950706 | F Hoffman-La Roche (Roche Hldg) | American Home Products |
| 19950816 | Bristol Myers Squibb | Somatix Therapy Corp |
| 19950829 | Johnson and Johnson | GynoPharma Inc |
| 19950911 | International Business Machines | Early, Cloud & Co |
| 19950918 | Abbott Laboratories | Ligand Pharmaceuticals, Inc. |
| 19950921 | Hewett Packard Co | Convex Computer Corp |
| 19950929 | SBC Communications, Inc. | Kacol Cellular-Rochester, NY MS |
| 19951019 | Johnson and Johnson | Cordis Corp |
| 19951030 | AT&T Corp | IVI Publishing Inc |
| 19951102 | American Home Products | Immunex Corp |
| 19951117 | AT&T Corp | Time Warner Cable Corp |
| 19951220 | International Business Machines | Taligent Inc (IBM, Apple) |
| 19951221 | Hewett Packard Co | ElseWare Corp |
| 19960118 | Pfizer Inc | Corvita Corp |
| 19960122 | AT&T Corp | DirecTV |
| 19960131 | International Business Machines | Tivoli Systems Inc |
| 19960201 | Walt Disney Co | Jumbo Pictures |
| 19960205 | Eastman Kodak Co Inc | Eckerd Corp-Photo-Processing |
| 19960212 | EMC Corp | MTI Tech-Patent Portfolio |
| 19960222 | Hewlett-Packard Co | SecureWare-Internet System Sec |
| 19960227 | Hewlett-Packard Co | Business@Web Inc |
| 19960227 | BankAmerica Corp | FBS Mortgage Corp |
| 19960315 | Winn-Dixie Stores, Inc | AW Computer Systems Inc |
| 19960326 | Pfizer Inc | Microcide Pharmaceuticals |
| 19960329 | Abbott Laboratories | MediSense Inc |
| 19960401 | Automatic Data Processing Inc | Merrin Financial Inc |
| 19960401 | SBC Communications Inc | Pacific Telesis Group |
| 19960401 | International Business Machines | Wilkerson Group |
| 19960415 | Automatic Data Processing Inc | Information Catalysts Inc |
| 19960418 | Walt Disney Co | Dream Quest Images |
| 19960418 | Bristol-Myers Squibb Co | Somatix Therapy Corp |
| 19960423 | Walt Disney Co | Walt Disney Co |
| 19960506 | Procter & Gamble Co | Eagle Snacks Inc |
| 19960506 | Winn-Dixie Stores Inc | Xtra Super Food-Dade County (2) |
| 19960508 | Pfizer Inc | Catalytica Fine Chemicals |
| 19960513 | General Electric Co | Electric Insurance Co |
| 19960515 | Tyco International Ltd | Carlisle Plastics Inc |
| 19960523 | Procter & Gamble Co | Kimberly-Clark-4 Businesses |
| 19960610 | Pfizer Inc | Vesta Medical Inc |
| 19960612 | Praxair Inc | Bakersfield Welding, Gerin |
| 19960613 | Berkshire Hathaway Inc | Sears Roebuck & Co |

***Table 2.*** (*Continued*)

| Date | Acquirer | Target |
|---|---|---|
| 19960620 | Tyco International Ltd | Henry Pratt Co, James Jones Co |
| 19960620 | Hewett Packard Co | Division Inc |
| 19960708 | Johnson and Johnson | Pharmacy Fund |
| 19960709 | Hewett Packard Co | DP-TEK Development Co-Certain |
| 19960711 | Ford Motor Co. | Budget Rent-A-Car Corp |
| 19960725 | Praxair Inc | Bob Smith, Jay-Ox, B&E Welding |
| 19960726 | Bank America Corp | Ford Motor Credit Co |
| 19960801 | GTE Corp | GTE Corp |
| 19960801 | Boeing Co | Rockwell Intl Corp-Aerospace |
| 19960805 | Bristol-Myers Squibb Co | Oncology Therapeutics Network |
| 19960805 | Hewlett-Packard Co | Trellis Software & Controls |
| 19960808 | Eastman Kodak Co Inc | Fox Photo Inc (CPI Corp) |
| 19960812 | SBC Communications Inc | AT&T Wireless-AR Cellular Ppty |
| 19960813 | International Business Machines | CPM Corp-Target Software Sys |
| 19960814 | General Mills Inc | Ralcorp Hldgs-Branded Cereal |
| 19960815 | Walt Disney Co | Cinergi Pictures Entertainment |
| 19960816 | Automatic Data Processing Inc | Staff Mgmt Systems of Florida |
| 19960819 | Bristol-Myers Squibb Co | Envision Medical Corp |
| 19960912 | Gillette Company | Duracell International Inc |
| 19960924 | Automatic Data Processing Inc | Global Proxy-Processing Bus |
| 19960930 | SBC Communications Inc | HighwayMaster Communications |
| 19960930 | Eastman Kodak Co Inc | American Stores-Photo Labs (3) |
| 19960930 | International Business Machines | Professional Data Mgmt Assoc |
| 19961003 | Eastman Kodak Co Inc | Wang Labs-Imaging Software |
| 19961007 | Johnson and Johnson | Indigo Medical Inc |
| 19961008 | Lucent Technologies Inc | Agile Networks |
| 19961015 | Berkshire Hathaway Inc | FlightSafety International |
| 19961017 | Phillip Morriss Companies | Pepsi Co Inc |
| 19961101 | Exxon/Mobil Corp | Southwest Petro-Chem-Grease |
| 19961113 | International Business Machines | Edmark Corp |
| 19961114 | Tyco International Ltd | TJ Cope |
| 19961121 | Johnson & Johnson | Bausch & Lomb Inc |
| 19961129 | Tyco International Ltd | ElectroStar Inc |
| 19961202 | Pepsi Co Inc | Quaker Oats Co-Gatorade |
| 19961212 | The Proctor and Gamble Company | Regeneron Pharmaceuticals Inc |
| 19961217 | Boeing Corp | McDonnell Douglas Corp |
| 19961219 | Automatic Data Processing Inc | Health Plan Services Corp |
| 19961223 | American International Group | Alcohol Sensors International |
| 19970110 | Tyco International Ltd | American Standard Companies |
| 19970116 | Home Depot Inc | Maintenance Warehouse/America |
| 19970120 | Target Therapeutics Inc | Boston Scientific Corp |
| 19970124 | Tyco International Ltd | Sempell Valve Group |
| 19970124 | KPDX-TV, KFXO-TV, WHNS-TV | Meredith Corp |
| 19970124 | Community Care of America Inc | Integrated Health Services Inc |

***Table 2.*** (*Continued*)

| Date | Acquirer | Target |
|---|---|---|
| 19970203 | Eastman Kodak Co Inc | Nova Microsonics |
| 19970205 | Tyco International Ltd | American Tube & Pipe Co |
| 19970211 | Johnson and Johnson | Innotech Inc |
| 19970214 | Walt Disney Co | Starwave Corp |
| 19970214 | Oppenheimer Capital LP | Thomson Advisory Group LP |
| 19970218 | EI du Pont de Nemours and Co | Pfister Hybrid Corn Co |
| 19970218 | Invetech Co | Applied Industrial Tech |
| 19970218 | E. I. DuPont de Nemours and Company (DuPont) | Pfister Hybrid Corn Co |
| 19970219 | Hewlett-Packard Co | Symantec Corp-Networking Busn |
| 19970224 | Walt Disney Co | Pixar Animation Studio |
| 19970310 | General Electric Co | Greenwich Air Services Inc |
| 19970310 | General Electric Co | Greenwich Air Services Inc |
| 19970319 | International Business Machines | Net Objects Inc |
| 19970401 | General Electric Co | ICS Holdings Inc |
| 19970401 | General Electric Co | ICS Holdings Inc |
| 19970408 | American International Group | Golden Eagle Insurance Co |
| 19970409 | Eli Lilly & Co | Seragen Inc (Boston University) |
| 19970409 | The Proctor and Gamble Company | Tambrands Inc |
| 19970411 | Tyco International Ltd | AT&T Submarine Systems Inc |
| 19970418 | Vitalink Pharmacy Services Inc | Manor Care Inc |
| 19970423 | Hewlett-Packard Co | Veri Fone Inc |
| 19970428 | Abbott Laboratories | Sanofi Pharmaceuticals – Parente |
| 19970429 | Boeing Co | Teledesic LLC |
| 19970506 | GTE Corp | BBN Corp |
| 19970508 | International Business Machines | Advantis (IBM, Sears Roebuck) |
| 19970509 | Chase Manhattan Corp, NY | Compass Bk, AL-Corporate Tr Bus |
| 19970512 | Homestead Village Inc | Security Capital Group Inc |
| 19970513 | Tyco International Ltd | Inbrand Corp |
| 19970520 | Tyco International Ltd | Keystone International Inc |
| 19970522 | Johnson and Johnson | Biopsys Medical Inc |
| 19970527 | Coca-Cola Enter (Coca-Cola Co) | Coca-Cola Bottling Co of NY |
| 19970527 | Walt Disney Co | International Family Ent Inc |
| 19970527 | AT&T Corp | SBC Communications Inc |
| 19970529 | Eli Lilly & Co | Millennium Bio Therapeutics Inc |
| 19970604 | Hewlett-Packard Co | Iomega Corp |
| 19970609 | Bank America Corp | Robertson Stephens & Co |
| 19970612 | Eastman Kodak Co Inc | Applied Network Solutions Inc |
| 19970612 | First of Michigan Capital Corp | Fahnestock Viner Holdings Inc |
| 19970617 | Berkshire Hathaway Inc | Natl Health Laboratories Inc |
| 19970624 | Berkshire Hathaway Inc | Star Furniture Co |
| 19970627 | Northwest Bancshares, Louisiana | Hibernia Corp, New Orleans, LA |
| 19970717 | Lucent Technologies Inc | Octel Communications Corp |
| 19970718 | Sprint Corp | Paranet Inc |
| 19970721 | Walt Disney Co | Mammoth Records |

***Table 2.*** (*Continued*)

| Date | Acquirer | Target |
|---|---|---|
| 19970723 | Eastman Kodak Co Inc | Picture Network Intl Inc |
| 19970723 | Eastman Kodak Co Inc | Picture Network Intl Inc |
| 19970725 | General Electric Co | Liberty Tech-Nondestructive |
| 19970725 | General Electric Co | Liberty Tech-Nondestructive |
| 19970804 | Johnson and Johnson | Gynecare Inc |
| 19970807 | EI du Pont de Nemours and Co | Pioneer Hi-Bred International |
| 19970807 | E. I. DuPont de Nemours and Company (DuPont) | Pioneer Hi-Bred International |
| 19970819 | Ford Motor Co | Toledo Molding & Die Inc |
| 19970821 | EI du Pont de Nemours and Co | Protein Technologies Intl |
| 19970821 | E. I. DuPont de Nemours and Company (DuPont) | Protein Technologies Intl |
| 19970916 | Praxair Inc | Gas Tech Inc |
| 19970918 | Stokely USA Inc | Chiquita Brands International |
| 19970919 | CBS Corp | American Radio Systems Corp |
| 19970923 | AT&T Corp | E-Stamp Corp |
| 19970923 | Hewett Packard Co | ForeFront Grp-Internet Tech |
| 19971008 | Bank America Corp | Home Properties of New York |
| 19971015 | Lucent Technologies Inc | Livingston Enterprises |
| 19971015 | GTE Corp | MCI Communications Corp |
| 19971021 | Chase Manhattan Corp, NY | Bank of New York-Credit Card |
| 19971021 | Berkshire Hathaway Inc | International Dairy Queen Inc |
| 19971031 | EI du Pont de Nemours and Co | Westrade USA Inc |
| 19971107 | Tyco International Ltd | Jason Marketing Corp |
| 19971111 | Hewett Packard Co | Nuview Inc-Nuview Managex |
| 19971112 | International Business Machines | Technology Svc Solutions (IBM) |
| 19971124 | Home Depot Inc | Deekay Enterprises Inc |
| 19971201 | EMC Corp | Sutmyn Storage Corp |
| 19971208 | General Motors Corp | Republic Industries-Saturn (6) |
| 19971210 | Lucent Technologies Inc | Prominet Corp |
| 19971215 | General Electric Co | Cal Tech Controls |
| 19971215 | General Electric Co | Cal Tech Controls |
| 19971219 | Chevron Corp | Chevron Corp |
| 19971222 | American International Group | American Bankers Ins Group Inc |
| 19971222 | Tyco International Ltd | Sherwood-Davis & Geck |
| 19971222 | American International Group | American Bankers Ins Group Inc |
| 19971229 | Tyco International Ltd | Holmes Protection Group Inc |
| 19971229 | Holmes Protection Group Inc | Tyco International Ltd |
| 19971229 | Hewett Packard Co | Heartstream Inc |
| 19980105 | General Electric Co | Marketing Services Group Inc |
| 19980105 | SBC Communications Inc | Southern New England Telecomm |
| 19980105 | General Electric Co | Marketing Services Group Inc |
| 19980108 | AT&T Corp | Teleport Communications Group |
| 19980121 | General Electric Co | Lockheed Martin-Bus Units (2) |
| 19980121 | General Electric Co | Lockheed Martin-Bus Units (2) |
| 19980123 | General Electric Co | GE Capital IT Solutions |

***Table 2.*** (*Continued*)

| Date | Acquirer | Target |
|---|---|---|
| 19980126 | Automatic Data Processing Inc | MICA Accounting Software |
| 19980127 | Bristol-Myers Squibb Co | Redmond Products Inc |
| 19980204 | Walt Disney Co | Starwave Corp |
| 19980211 | IBM Corp | Commquest Technologies Inc |
| 19980211 | Sprint Corp | EarthLink Network Inc |
| 19980212 | Eastman Kodak Co Inc | Picture Vision |
| 19980217 | Hewlett-Packard Co | MTI Analytical Instruments |
| 19980311 | International Business Machines | General Elec Capital Svcs-Coml |
| 19980313 | IBM Corp | Chem Systems Group Inc |
| 19980318 | Chase Manhattan Corp, NY | Merrill Lynch & Co Inc |
| 19980406 | Coca-Cola Enter (Coca-Cola Co) | Coca-Cola Bottling, Texas Bottl |
| 19980406 | Lucent Technologies Inc | Chip Express Corp |
| 19980417 | Tyco International Ltd | Borg-Wells Fargo Alarm Bus |
| 19980424 | General Motors Corp | Millender Center, Detroit, MI |
| 19980427 | Lucent Technologies Inc | Yurie Systems Inc |
| 19980428 | American International Group | American Express Co |
| 19980430 | Chase Manhattan Corp, NY | Marine Midland Bk-Continental |
| 19980505 | GTE Corp | Virginia Cellular LP |
| 19980507 | Chase Manhattan Corp, NY | Morgan Stanley Trust Co |
| 19980511 | SBC Communications Inc | Ameritech Corp |
| 19980518 | Coca-Cola Enter (Coca-Cola Co) | Inforum Office Building, GA |
| 19980519 | International Business Machines | Databeam Corp |
| 19980525 | Tyco International Ltd | US Surgical Corp |
| 19980527 | GTE Corp | Puerto Rico Telephone Co |
| 19980528 | CBS Corp | KMJZ-FM, KSGS-AM, Minneapolis |
| 19980528 | CBS Corp | WHOK-FM, WLVQ-FM, WAZU-FM |
| 19980601 | American Home Products | Monsanto Co |
| 19980602 | Tyco International Ltd | Sigma Circuits Inc |
| 19980608 | Tyco International Ltd | Crosby Valve (FMC Corp) |
| 19980617 | AT&T Corp | America Online Inc |
| 19980618 | Walt Disney Co | Infoseek Corp |
| 19980619 | Berkshire Hathaway Inc | General Re Corp |
| 19980624 | Johnson & Johnson | Amgen Inc |
| 19980624 | AT&T Corp | Tele-Communications Inc |
| 19980630 | Sprint Corp | Cox Communications PCS LP |
| 19980719 | American International Group | Transatlantic Holdings Inc |
| 19980720 | Pepsi Co Inc | Tropicana Products Inc |
| 19980720 | Pepsi Co, Inc | Tropicana Products Inc |
| 19980721 | Coca-Cola Enter (Coca-Cola Co) | Great Plains Bottler & Canners |
| 19980721 | General Electric Co | Raytheon Systems Ltd Flight |
| 19980721 | Johnson and Johnson | Depuy Inc (Corange Ltd) |
| 19980721 | General Electric Co | Raytheon Systems Ltd Flight |
| 19980723 | AT&T Corp | AT&T Corp |
| 19980723 | Berkshire Hathaway Inc | Executive Jet Inc |

***Table 2.*** (*Continued*)

| Date | Acquirer | Target |
|---|---|---|
| 19980728 | Lucent Technologies Inc | MassMedia Commun (Lucent) |
| 19980730 | American International Group | Blackstone Group |
| 19980803 | Eastman Kodak Co Inc | Imation-Medical Imaging Bus |
| 19980803 | General Electric Co | Power Factor Correction |
| 19980804 | Abbott Laboratories | I-Stat Corp |
| 19980804 | Chase Manhattan Corp, NY | PNC-Corp Trust and Escrow Bus |
| 19980810 | EMC Corp | Conley Corp |
| 19980812 | Boeing Co | Ellipso Inc |
| 19980813 | CBS Corp | WYUU-FM, WLLD-FM, Tampa, Florida |
| 19980817 | Pepsi Co Inc | Pepsi-Cola Bottling Co |
| 19980820 | American International Group | Sun America Inc |
| 19980820 | American International Group | Sun America Inc |
| 19980831 | IBP Inc | Diversified Food Corp-Appetize |
| 19980922 | Tyco International Ltd | Sigma Circuits Inc |
| 19981005 | AT&T Corp | Vanguard Cellular Systems Inc |
| 19981005 | Johnson and Johnson | FemRx Inc |
| 19981006 | Lucent Technologies Inc | Quadritek Systems Inc |
| 19981014 | Sprint Corp | Prime Co-Hawaii PCS License |
| 19981014 | Pepsi Co Inc | Whitman Corp |
| 19981020 | SBC Communications Inc | Concentric Network Corp |
| 19981020 | Hewlett-Packard Co | Scope Communications Inc |
| 19981021 | Coca-Cola Enter (Coca-Cola Co) | Independent Bottling Cos-6 |
| 19981026 | Coca-Cola Enter (Coca-Cola Co) | Coca-Cola, Dr Pepper Bottling |
| 19981027 | EI du Pont de Nemours and Co | Qualicon LLC |
| 19981027 | IBM Corp | Wallop Software Inc-BUILD-IT |
| 19981028 | AT&T Corp | Arris Interactive-Cable System |
| 19981120 | Phillip Morriss Companies | Liggett Group-Cigarette Lines |
| 19981123 | Tyco International Ltd | AMP Inc |
| 19981124 | Lucent Technologies Inc | Pario Software Inc |
| 19981201 | Exxon/Mobil Corp | Mobil Corp |
| 19981203 | Automatic Data Processing Inc | Vincam Group Inc |
| 19981203 | Automatic Data Processing Inc | Vincam Group Inc |
| 19981208 | AT&T Corp | IBM Corp-Global Network Op |
| 19981217 | Johnson and Johnson | SC Johnson & Sons Inc-Skin |
| 19981223 | Chevron Corp | Rutherford-Moran Oil Corp |
| 19990108 | AT&T Corp | AT&T Corp |
| 19990111 | Lucent Technologies Inc | Kenan Systems Corp |
| 19990113 | Walt Disney Co | Golden Books Family Ent |
| 19990113 | Lucent Technologies Inc | Ascend Communications Inc |
| 19990118 | General Mills Inc | Lloyd's Barbeque (Main Street) |
| 19990119 | General Mills Inc | Farmhouse Foods Co |
| 19990119 | AT&T Corp | SmarTalk TeleServices Inc |
| 19990119 | Ford Motor Co | Troy Design and Manufacturing |
| 19990125 | Praxair Inc | GP Industries-Health Care Bus |

***Table 2.*** (*Continued*)

| Date | Acquirer | Target |
|---|---|---|
| 19990125 | Pepsi Co Inc | Whitman-WV, VA, Russia Ops |
| 19990208 | SBC Communications, Inc. | Williams Communications Group |
| 19990212 | Citigroup Inc | Oregon Steel Mills Inc |
| 19990212 | Citigroup Inc | Reynolds Metals Co |
| 19990309 | International Business Machines | Red Hat Inc |
| 19990310 | IBP Inc | H&M Food Systems Co (Beledia) |
| 19990317 | General Electric Co | Advanced Lighting Technologies |
| 19990317 | General Electric Co | Advanced Lighting Technologies |
| 19990318 | Ford Motor Co | Zebra Imaging |
| 19990326 | Citigroup Inc | Source One Mtg-Op Assets |
| 19990401 | CBS Corp | King World Productions Inc |
| 19990405 | GTE Corp | Ameritech Corp-Midwest Prop |
| 19990405 | Lucent Technologies Inc | Mosaix Inc |
| 19990407 | IBP Inc | Thorn Apple Valley Inc |
| 19990409 | AT&T Corp | Honolulu Cellular Telephone Co |
| 19990409 | IBP Inc | Russer Foods |
| 19990409 | Hewlett-Packard Co | Telegra Corp |
| 19990412 | Tyco International Ltd | Batts Inc (Batts Group Ltd Inc) |
| 19990412 | CBS Corp | Hollywood Online (Times Mirror) |
| 19990412 | Sprint Corp | People's Choice TV Corp |
| 19990414 | AT&T Corp | Dobson Communications Corp |
| 19990414 | AT&T Corp | Dobson Communications Corp |
| 19990416 | General Electric Co | Value Vision International Inc |
| 19990416 | General Electric Co | Value Vision International Inc |
| 19990420 | American International Group | John McStay Investment Counsel |
| 19990422 | AT&T Corp | MediaOne Group Inc |
| 19990422 | CBS Corp | Office.com |
| 19990422 | AT&T Corp | Media One Group Inc |
| 19990423 | Sprint Corp | Cox Communications PCS LP |
| 19990427 | Sprint Corp | American Telecasting |
| 19990429 | CBS Corp | KEYE-TV, Austin, Texas |
| 19990503 | Hewlett-Packard Co | Transoft Networks Inc |
| 19990503 | Sprint Corp | Transworld Telecommunications |
| 19990504 | AT&T Corp | Lenfest Communications Inc |
| 19990504 | AT&T Corp | Lenfest Communications Inc |
| 19990508 | Chevron Corp | Texaco Inc |
| 19990511 | Automatic Data Processing Inc | Dealer Solutions Inc |
| 19990519 | Tyco InternationalLtd | Raychem Corp |
| 19990601 | Automatic Data Processing Inc | OMR Systems Corp |
| 19990602 | CBS Corp | Switchboard Inc |
| 19990603 | Home Depot Inc | Georgia Lighting |
| 19990603 | Abbott Laboratories | Triangle Pharmaceuticals Inc |
| 19990609 | Ford Motor Co | Automobile Protection Corp |
| 19990609 | International Business Machines | Whistle Communications Corp |

***Table 2.*** (*Continued*)

| Date | Acquirer | Target |
|---|---|---|
| 19990615 | America Online | Digital Marketing Services Inc |
| 19990616 | Tyco International Ltd | Central Sprinkler Corp |
| 19990616 | CBS Corp | Third Age Media Inc |
| 19990621 | Abbott Laboratories | ALZA Corp |
| 19990625 | Lucent Technologies Inc | Nexabit Networks Inc |
| 19990625 | IBP Inc | Thorn Apple Valley Inc |
| 19990629 | Lucent Technologies Inc | Cirent Seniconductor |
| 19990630 | Wal-Mart Stores Inc | Federal Bank Center, OK |
| 19990701 | Lucent Technologies Inc | CCOM Information Systems |
| 19990708 | CBS Corp | Medscape Inc |
| 19990708 | Abbott Laboratories | Perclose Inc |
| 19990712 | Walt Disney Co | Infoseek Corp |
| 19990712 | International Business Machines | Sequent Computer Systems Inc |
| 19990714 | EI du Pont de Nemours and Co | EI du Pont de Nemours and Co |
| 19990714 | General Electric Co | Energy, Environmental Research |
| 19990715 | Hewlett-Packard Co | Diametrics Medical Inc |
| 19990720 | Sprint Corp | GST Telecommunications Inc |
| 19990721 | Johnson & Johnson | Centocor Inc |
| 19990722 | CBS Corp | Rx.com |
| 19990727 | IBM Corp | Mylex Corp |
| 19990727 | Sprint Corp | WBS America LLC-Operating |
| 19990804 | Chase Manhattan Corp, NY | Mellon Financial Corp |
| 19990804 | Hewlett-Packard Co | Security Force Software Inc |
| 19990809 | EMC Corp | Data General Corp |
| 19990810 | Abbott Laboratories | SangStat Medical Corp |
| 19990811 | Procter & Gamble Co | IAMs Co |
| 19990812 | General Mills Inc | Gardetto's Bakery Inc |
| 19990816 | CBS Corp | Wrenchead.com Inc |
| 19990818 | CBS Corp | Jobs.com |
| 19990823 | Tyco International Ltd | General Surgical Innovations |
| 19990826 | Procter & Gamble Co | Recovery Engineering Inc |
| 19990831 | Sprint Corp | Hybrid Networks Inc |
| 19990901 | CBS Corp | Big Entertainment Inc |
| 19990909 | Hewlett-Packard Co | Digimarc Corp |
| 19990920 | Hewlett-Packard Co | Qosnetics |
| 19990927 | CBS Corp | Women's Consumer Network |
| 19990928 | Chase Manhattan Corp, NY | Hambrecht & Quist Group Inc |
| 19991004 | CBS Corp | CTC Bulldog Inc |
| 19991005 | EI du Pont de Nemours and Co | CombiChem |
| 19991006 | CBS Corp | iWon Inc |
| 19991008 | EI du Pont de Nemours and Co | ImaRx Pharmaceutical Corp |
| 19991011 | Berkshire Hathaway Inc | Jordan Furniture Co Inc |
| 19991013 | Chase Manhattan Corp, NY | Hungtington-Credit Card Rec |
| 19991019 | Citigroup Inc | Citigroup Inc |

***Table 2.*** (*Continued*)

| Date | Acquirer | Target |
|---|---|---|
| 19991019 | Sprint Corp | Videotron USA (Le Group Video) |
| 19991021 | America Online Inc | Gateway Inc |
| 19991022 | Sprint Corp | Videotron Bay Area (Sprint) |
| 19991026 | Tyco InternationalLtd | Praegitzer Industries Inc |
| 19991101 | AT&T Corp | Firstcom Corp |
| 19991101 | EMC Corp | Siros Technologies |
| 19991101 | Praxair Inc | Materials Research Corp |
| 19991103 | SBC Communications Inc | Radiofone Inc |
| 19991104 | Pfizer Inc | Warner-Lambert Co |
| 19991109 | Johnson & Johnson | Innovasive Devices Inc |
| 19991122 | Abbott Laboratories | Glaxo-Crt Anesthesia Bus Asset |
| 19991201 | EI du Pont de Nemours and Co | Chematch.com |
| 19991201 | Abbott Laboratories | SpectRx Inc |
| 19991210 | Boeing Co | SkyBridge LP (Alcatel Alsthom) |
| 19991215 | General Mills Inc | Small Planet Foods |
| 19991221 | IBP Inc | Corporate Brand Foods America |
| 19991221 | EMC Corp | Softworks Inc |
| 19991222 | America Online Inc | MapQuest.com Inc |
| 19991229 | CBS Corp | Sports Line USA Inc |

the CAR associated with the merger news as the cumulative effect of the news by day three continuing through day five is positive. This suggests that U.S. trading in anticipation of the merger news effect on share prices appears to incorrectly anticipate the ultimate effect. Then a few days of "correction" appears to follow the news to offset the earlier negative abnormal returns.

To gain further insight into the implications of these findings, cross-section regressions are estimated across all individual firms with fixed-effects for country. Additionally, the country dummies are interacted with a size dummy to determine if large firms experience a different abnormal return pattern than small firms. We define a U.S. (German) firm as large by a market capitalization (yearly trading volume) that is in the top one-third of our sample. This includes German firms with a trading volume greater than $25 billion and U.S. firms with a market capitalization of $75 billion and beyond.[16] Table 3 contains the estimation results.

Table 3 is split into three parts. Table 3 reports results for the CARs over the five-day period prior to the news. Table 3 reports the abnormal return event day results. Table 3 contains CAR results for the five-day period following the merger news. Table 3, shows that the negative CARs depicted in Fig. 1b for the U.S. firms prior to the event day reflect a smaller-firm effect. For the largest U.S. firms, the

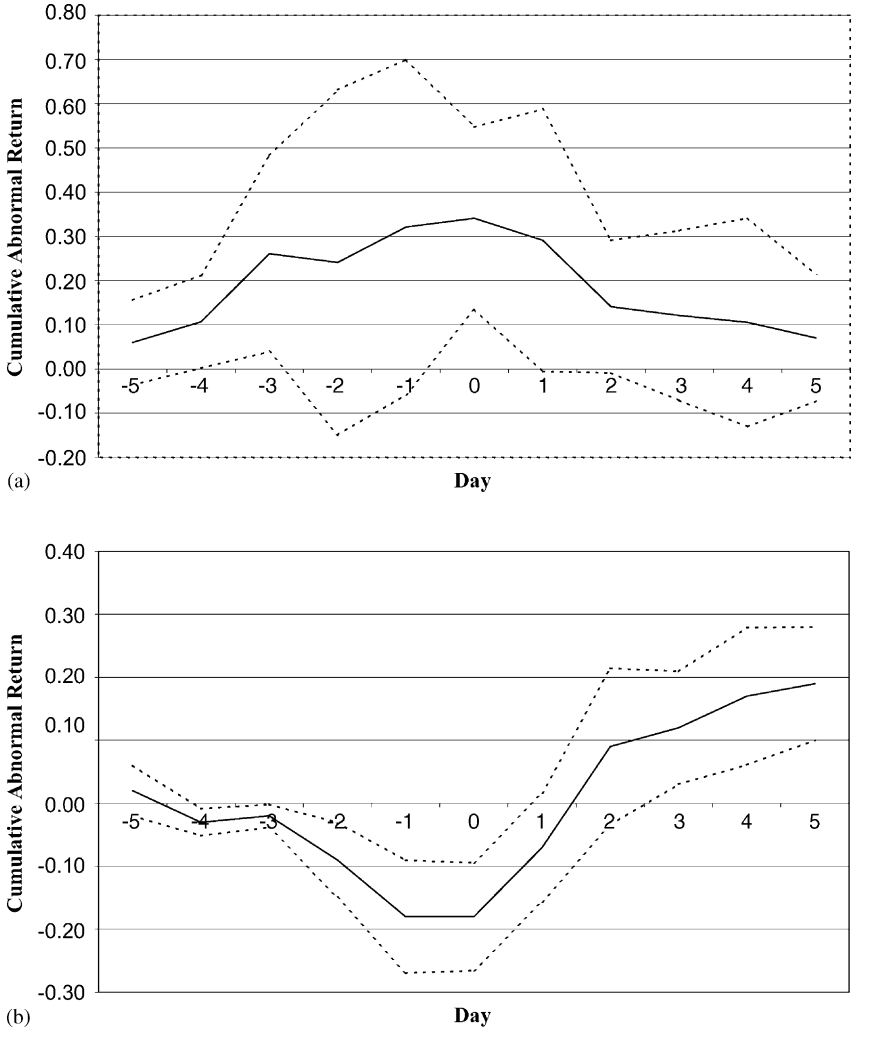


*Fig. 1.* (a) Cumulative Abnormal Returns for German Acquiring Firms. (b) Cumulative Abnormal Returns for U.S. Acquiring Firms.

CARs are positive. For these pre-announcement days, large U.S. firms have similar results to those of German firms. The interactive term, German $\times$ Big, indicates that the largest German firms have larger CARs than the smaller German firms, but all German firms experience CARs that are statistically significantly greater than zero.

***Table 3.*** Country and Size Effects on Abnormal Returns for German and U.S. Acquirer Firms.

| Variable | Coefficient | *p*-Value |
|---|---|---|
| (a) Cumulative abnormal returns before merger news day (day −5 to −1) | | |
| German | 0.132 | 0.00 |
| German × Big | 0.158 | 0.00 |
| U.S. | −0.050 | 0.00 |
| US × Big | 0.197 | 0.05 |
| *R*-squared | 0.687 | |
| (b). Abnormal returns on merger news day | | |
| German | 0.092 | 0.00 |
| German × Big | 0.158 | 0.00 |
| U.S. | 0.005 | 0.06 |
| U.S. × Big | 0.202 | 0.00 |
| *R*-squared | 0.678 | |
| (c) Cumulative abnormal returns after merger news day (day +1 to +5) | | |
| German | −0.059 | 0.00 |
| German × Big | 0.132 | 0.00 |
| U.S. | 0.174 | 0.00 |
| U.S. × Big | 0.162 | 0.00 |
| *R*-squared | 0.623 | |

*Note:* The tables report cross-section regressions for 391 observations where the dependent variables are firm-level abnormal returns. Independent variables include dummy variables for whether the firm is German or U.S. Interactive terms with dummy variables for big firms having a market capitalization of over $25 billion in Germany or $75 billion in the U.S. are included to test whether the abnormal returns are different for big firms versus smaller firms.

Table 3 indicates that on the day of the merger news, German and U.S. firms have similar effects. Larger firms have significantly larger abnormal returns on the event day than smaller firms, but firms in both countries experience positive abnormal returns on average.

Table 3 indicates that on the five days following the merger news, smaller German firms experience negative CARs on average. The larger German firms have positive CARs so this difference in sign between large and small German firms is why Fig. 1a presented CARs for all German firms that did not differ significantly from zero. Larger U.S. firms have larger CARs than smaller U.S. firms, but both classes of U.S. firms experience positive CARs on average.

The overall message of Table 3 seems clear; the largest firms in both countries experience similar patterns of abnormal returns around merger news. This is a pattern of a positive impact on share prices before the merger announcement,

on the day of the announcement, and in days following the announcement. The differences occur among smaller firms. The results indicate that smaller firms in the U.S. have negative CARs in the pre-announcement period while smaller German firms experience positive CARs. Then, in the post-announcement period, smaller German firms experience negative CARs while smaller U.S. firms experience positive CARs.

The positive announcement returns for acquiring firms in the U.S. are in contrast to previous merger studies for the U.S. Fuller et al. (2002) review the related literature and document a zero abnormal return on the announcement date of the acquisition.[17] Our results for the German firms are consistent with Boehmer (2000) who found significantly positive CARs for event windows of different sizes. Also Aktas et al. (2002) obtain positive CARs for a sample of European business combinations, which are significant at the 10% level for acquiring firms.

### *3.4. Implications of Results*

At first glance the empirical results suggest that there are no differences in corporate governance between Germany and the United States in the market response to merger news. The discussion in Sections 1 and 2 might suggest that insider trading is more likely in Germany or investors are more likely to be misled by German corporate officers around merger events. The empirical results in Section 3, however, indicate that for the largest firms, the behavior of share prices around merger news is the same for German and U.S. firms. So there is nothing in the results for the largest firms to indicate any difference across countries.

Smaller firms in each country do have some systematic differences in share price behavior around merger news. U.S. smaller firms have negative CARs, on average, prior to the news while German smaller firms have negative CARs after the news day, on average. In the pre-event window, the evidence is consistent with trading based on better information in Germany than in the U.S., as German price movements appear to correctly anticipate the abnormal return on the news day while U.S. trading results in CARs with the opposite sign from the news day effect. Then in the post-announcement window, the negative CAR for smaller German firms partially offsets the earlier positive CARs. Smaller U.S. firms have statistically significant positive CARs after the event that more than offset the earlier pre-event negative CARs. This is consistent with the U.S. news having a larger permanent effect on share prices than in Germany for smaller firms.

The fact that the only qualitative differences between German and U.S. acquirer firms is for smaller firms, may indicate that the larger firms have no price-relevant differences in corporate activities around mergers. One factor that might contribute

to this similarity between large firms in each country would be for large German firms to have stock listings in the United States and, therefore, more closely follow U.S. disclosure standards. To determine if this is a factor, we examine which German firms were listed in the U.S. stock market. Since firms that list in the U.S. must disclose information that differs from what is required domestically, it is possible that, rather than size, it is this greater disclosure that explains the similarities between large German and large U.S. firms. Twenty-three of the German acquirer firms used for estimation were also listed in the U.S. Of the 27, seven are listed on the New York Stock Exchange and must comply with the same rules and regulations as U.S. firms.[18] Five of these seven firms are in the category of "big" German firms while two (Fresenius Medical Care and SGL Carbon) firms fall in the smaller firm category. To test for an independent effect of a U.S. listing, cross-section models are estimated with the incorporation of an additional explanatory variable, German × U.S. list. This variable interacts the dummy variable for German location with a dummy variable for listing on a U.S. stock exchange. Table 4 reports these results.

In Table 4, the evidence indicates that accounting for a U.S. listing does not reduce the significance of the size effect. So apart from German firms that must report financial statements conforming to U.S. GAAP, there is an independent effect of large firms having larger abnormal returns. The coefficient on the interactive term for U.S.-listed firms from Germany differs over the three sample periods. There is a negative effect prior to the news day, a positive effect on the news day, and a negative effect following the news day. All effects have *p*-values of 0.00. The most interesting finding is that abnormal returns for German firms that trade on the New York Stock Exchange have similar patterns to the U.S. firms. In the pre-announcement window, there is a negative effect for both the U.S. and German × U.S. list dummies and then both of these coefficients turn positive in the announcement and post-announcement windows. So besides large firms in each country having similar effects of a merger announcement, those German firms that are listed on a U.S. exchange also behave like U.S. firms. The only difference that exists between German and U.S. firms around merger announcements is for smaller firms, where German firms not listed on a U.S. exchange have positive CARs pre-news and negative CARs post-event while U.S. firms have negative and then positive CARs for the pre- and post-event periods respectively.

Given the statistically significant pre-announcement effects for both country samples, one cannot say that the merger news was unexpected. However, the fact that the pre-news-day U.S. effect for smaller firms was opposite in sign to the news-day and post-news-day effects is consistent with the market anticipating the merger news to adversely effect firm value. Yet, the actual effect of the announcement is seen to be associated with positive abnormal returns. Thus,

***Table 4.*** Country, Size, and U.S.-Listing Effects on Abnormal Returns for German and U.S. Acquirer Firms.

| Variable | Coefficient | *p*-Value |
|---|---|---|
| (a). Cumulative abnormal returns before merger news day (day −5 to −1) | | |
| German | 0.132 | 0.00 |
| German × U.S. list | −0.057 | 0.00 |
| German × Big | 0.146 | 0.00 |
| U.S. | −0.042 | 0.00 |
| U.S. × Big | 0.210 | 0.00 |
| *R*-squared | 0.690 | |
| (b). Abnormal returns on merger news day | | |
| German | 0.098 | 0.00 |
| German × U.S. list | 0.002 | 0.00 |
| German × Big | 0.165 | 0.00 |
| U.S. | 0.021 | 0.00 |
| U.S. × Big | 0.202 | 0.00 |
| *R*-squared | 0.748 | |
| (c). Cumulative abnormal returns after merger news day (day +1 to +5) | | |
| German | −0.054 | 0.00 |
| German × U.S. list | 0.101 | 0.00 |
| German × Big | 0.166 | 0.00 |
| U.S. | 0.135 | 0.00 |
| U.S. × Big | 0.202 | 0.00 |
| *R*-squared | 0.755 | |

*Note:* The tables report cross-section regressions for 391 observations where the dependent variables are firm-level abnormal returns. Independent variables include dummy variables for whether the firm is German or U.S. Interactive terms with dummy variables for big firms and dummy variables for German firms that report financial statements conforming to U.S. GAAP are included to test whether the abnormal returns are different for big firms versus smaller firms or for German firms that must meet U.S. disclosure standards to be traded on a U.S. exchange.

information in the U.S. in the pre-news period does not seem to be as good as in the case of Germany where smaller firms have pre-news abnormal returns that accurately anticipate the news-day effect. However, in the German case, the post-event negative CAR is consistent with some reversion to the prior price level as if the market had overreacted to the expected announcement effect.

## 4. CONCLUSIONS

It is well known that differences exist between German and U.S. corporate governance standards. This is particularly noteworthy in the area of disclosure around

merger events. German executives can deliberately make misleading statements regarding merger activities while U.S. executives must either state "no comment" or else provide a truthful statement. The major focus of the research in this paper is to determine whether these differences in disclosure standards result in different share price behavior around merger news.

A sample of German and U.S. firms that announced acquisition plans in the 1995–1999 period was collected to determine if such a difference exists. The year 1995 was chosen as the starting period due to the insider-trading law passed in Germany in 1994. Measures of abnormal returns were created over the period from five days prior to five days after the merger news. Cumulative abnormal returns averaged across all firms indicate that the merger news event is associated with a positive impact for U.S. firms and no significant impact for German firms. So, the most aggregated evidence is consistent with the market having already discounted the merger news in Germany so that the announcement is really not price-relevant "news." This is the sort of effect one might expect if insider trading occurred prior to the announcement event. The aggregated evidence for U.S. firms are consistent with the merger news causing significantly positive cumulative abnormal returns suggesting that the news impact was not already fully discounted by the market.

A finer breakdown of the sample provides some evidence that the differences between German and U.S. firms is not as simple as just suggested. The evidence indicates that larger firms in Germany and the U.S. have similar experiences. The cumulative abnormal returns are positive both before and after the merger news and there is also a positive abnormal return on the news day. Controlling for this large firm effect, we also find that German firms that are traded on a U.S. stock exchange behave like smaller U.S. firms. There is a negative cumulative abnormal return prior to the merger news event and then a positive event day abnormal return followed by a positive post-event cumulative abnormal return. Only for smaller German firms not listed on a U.S. exchange do results differ. In this case, there is a positive cumulative abnormal return in the pre-event period and then a negative cumulative abnormal return in the post-event period. Smaller U.S. firms have just the opposite pattern.

The results for larger firms and those German firms that are traded on a U.S. stock exchange indicate that there is no generalized difference between the market response to merger news between German and U.S. firms, despite the distinct differences in rules relating to disclosure and public statements. While market participants are rightly concerned over investor protection and corporate governance rules, the bottom line on merger announcements is generally suggestive that no substantive differences exist despite sharp differences in the rules related to public statements around merger news in the U.S. and Germany.

## NOTES

1. A good description of the case is found in the *Wall Street Journal* article "Lawsuit Hinges on a Word – and What a Word!" February 12, 2002, p. C1.

2. A more detailed overview is given in Boehmer (1999) and Hopt (2003).

3. On July 26, 1994, Germany passed the Second Act on the Promotion of Financial Markets. This law implements the European Insider Dealing Directive of November 13, 1989 and created the Securities Trading Act (*Wertpapierhandelsgesetz, WpHG*). In addition, the law established The Federal Securities Supervisory Office which was recently transformed into the German Financial Supervisory Authority. A detailed description of the law and its practical implementation can be found in Kleimeier-Ros and Whidbee (2001).

4. The German banking industry is dominated by the universal banks, which engage in all types of banking business. They may be grouped into three categories, according to their legal form: Private commercial banks, cooperative banks (*Volks- und Raiffeisenbanken*), and public-sector banks.

5. However, there is a lag between actual trades and the ultimate reporting of those trades on SEC Form 4. In order to improve transparency and fairness in U.S. stock markets, the SEC approved Regulation Fair Disclosure on August 10, 2000. At the same time, the SEC issued Rule 10b5-1 which permits insiders to sell their companies' shares under a pre-arranged, written trading plan.

6. This contrast is well documented in the study by Becht and Boehmer (1999). For example, they show that 85% of all German stock corporations listed on the official market have a dominant shareholder who controls more than 25% of the voting rights.

7. There are different laws governing German codetermination. See Gorton and Schmid (2002) for details. Besides the board level, there is the shop floor level where employees and unions may execise their influence.

8. On May 6, the first rumor about the deal appeared in the Wall Street Journal. In contrast to the Chrysler board, the Daimler supervisory board did not approve the deal before the announcement. This happened one week later, on May 14, 1998.

9. This is due to the German legislature enacting the Law on Control and Transparency of the Firm (*Gesetz zur Kontrolle und Transparenz im Unternehmensbereich, KonTraG*). In January 2003, the Law on Transparency and Disclosure (*Transparenz und Publizitaetsgesetz, TransPuG*) extends the financial disclosure requirements to capital market oriented business combinations which are obliged to provide a cash flow statement as an independent part of the consolidated annual report, along with reports on equity and business segments.

10. See Daimler-Benz (1993).

11. Until the end of 2001 Germany had no specific law governing takeovers. However, a Takeover Code was introduced in 1995 as a means of self-regulation. Unfortunately, most of the firms did not commit to the code. On January 1, 2002 the Takeover Act entered into force and replaced the Takeover Code.

12. The data from Thomson Financial was checked against the announcement dates found in the Boersenzeitung, the Handelsblatt, and the filing database provided by the Bundeskartellamt (Federal Cartel Office) to ensure that we have the earliest date of announcement.

13. The fact books of the Deutsche Boerse AG suggest a strong relation between firm size and trading volume, hence we expect no bias from the use of volume as a size proxy for German firms.

14. The closing prices are from the floor of the Frankfurt Stock Exchange which is a specialist centered floor based auction market like the New York Stock Exchange.

15. However, we find that the results using all observations are qualitatively the same as those with only non-overlapping observations.

16. The non-overlapping event sample contains 391 observations which includes 52 German firms, of which 16 had a yearly trading volume greater than $25 billion. There are 52 German firms since Daimler Benz and Daimler Chrysler and Hoechst and SGL Carbon are included as individual entities. There are 50 U.S. firms, with 16 having a market capitalization greater than $75 billion.

17. This study also shows that there is a very great variation in these returns. For example, results vary with respect to the target being public or private. Contrary to our study, Fuller et al. (2002) try to explain the variation in acquirer returns due to characteristics of the firms involved in the merger deal.

18. These include: BASF, Daimler Benz, Deutsche Telekom, Fresenius Medical Care, SAP, SGL Carbon, and Veba. The other U.S. listed firms are traded in the OTC market or are Rule 144a ADRs and therefore exempted from the full disclosure rules applied to exchange-listed firms.

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# CLIENTELISM, DEBT SERVICE AND GOVERNANCE

Victor Vaugirard

## ABSTRACT

*This paper sets up a model of strategic sovereign default, in which crony capitalism provides policymakers with incentives to service the debt beyond what is socially optimal. It then considers reforms to deal with the supply side of clientelism: the private sector. This involves tackling agency problems between managers and corporate stakeholders, since a key element to constrain the ability of powerful economic interests to capture the state is good corporate governance. Economic hard times provide such an opportunity, as the implicit coalition between groups of cronies may break down. A model is built along those lines, which highlights international contagion of debt repudiation.*

## 1. INTRODUCTION

Crony capitalism (or clientelism) has been blamed as a major culprit in the Asia crisis of 1997–1998, along with financial fragility. Prakash (2001) provides a precise description of this episode and details the forms of cronyism in each country involved. Likewise, clientelism allegedly is a core characteristic of Latin America. Haber (2002), in the introduction of a book on this subject states "Indeed, there is perhaps no region of the world in which crony arrangements have been as fundamental a feature of the economy as in Latin America."

**Corporate Governance**
**Advances in Financial Economics, Volume 9, 137–160**

**ISSN: 1569-3732/doi:10.1016/S1569-3732(04)09006-1**

Crony capitalism is an economic system in which the allocation of resources and the adjudication of commercial disputes are generally made to favor those who have a close relationship with political leaders or government officials, by blood (nepotism) or by bribes (corruption). These liberalities enable well-connected economic agents to earn returns above those that would prevail in an economy in which the factors of production were priced by the market. Capital is inexpensively provided to acquaintances by means of cheap credit granted to their firms by government-controlled banks. Cronies may also earn rents with the ability to charge high prices for their output. Common forms of such rewards are monopolies or protection from international competition by miscellaneous trade barriers.

Clientelism gives rise to agency problems between tax-paying citizens and policymakers and between corporate managers and stakeholders. We first shed light on the former type of agency problem, as it may involve financial fragility and political instability. Indeed, coupled with an informational advantage of policymakers over the public concerning relevant variables, political distortions magnify political uncertainty. As a matter of fact, economic agents are unsure of policymakers' intentions about policy measures about which they may be concerned, such as servicing the sovereign debt (for international creditors) or bailing out collapsing banks (for home depositors and foreign lenders). This political uncertainty results in exacerbated financial fragility, as rational economic agents react to the associated higher risk or ambiguity. Moreover, a political crisis may arise, as citizens are tempted to fire skewed policymakers and overrule a decision with which they disagree. We then tackle agency problems between managers and corporate stakeholders by considering reforms to deal with the supply side of cronyism: the private sector. Indeed, a key element to constrain the ability of powerful economic interests to capture the state is good corporate governance.

To the best of our knowledge, no paper studies the decision to service sovereign debt through the lens of crony capitalism, and this contribution is intended to fill part of this gap. In Section 2, we first argue that clientelism provides policymakers with incentives not to default on sovereign debt, as they may be concerned about a fallout with their acquaintances or their reputation as managers. The bottom line is that costs of default tend to be higher with cronyism, and that cronies are better off with debt repayment beyond what is socially optimal. We then lay down a stylized model, based on an ongoing work of Chang (2002), which captures the aforementioned traits. The decision of defaulting on the sovereign debt is split into two steps. A financial stage features foreign lenders who assess their chances of being repaid before buying the new debt issued. In this respect, they must determine the likelihood of sovereign default. This entails that they are able to anticipate the outcomes of a political game. That political stage displays a non-cooperative Bayesian game between policymakers and citizens, based on an informational

advantage of the former over the latter regarding the social costs of default. The propensity of policymakers to repay the debt is epitomized by a tradeoff between the costs of default and the costs associated with raising taxes to service the debt. The former involves personal costs for the policymakers if they are not benevolent. Still, citizens have the power to dismiss them and overrule their decision.

In Section 3, we determine rational-expectations equilibrium outcomes of the model. To do so, we first focus on the political game and determine its Bayesian equilibrium outcomes. In so doing, we temporarily disregard foreign lenders' behavior, which comes down to thinking of the taxation cost of debt service as an exogenous variable. We then bring in lenders' expectations about being repaid, and derive the full equilibrium outcomes of the model. At this point, we are able to determine what drives debt default and political crises and derive two main results. First, lenders' expectations about the politico-financial outcome of the political game are self-fulfilling in that they can increase the likelihood of financial crises and can lead to political crises. Second, debt crises are equilibrium outcomes whose probability increases with the subjective assessment by the public (citizens and lenders) of a lesser government's propensity to repay the debt. Furthermore, the probability of equilibrium political crises rises with citizens' subjective probability that the policymaker is distorted.

In Section 4, we consider ways to reduce cronyism so as to relieve taxpayers from the burden associated with excessive debt servicing. We first argue that policymakers must be opportunistic to fight this uphill battle and that economic hard times open windows of opportunity, as the implicit coalition between groups of cronies may break down. Along those lines, we then develop a model of political contagion of sovereign debt repudiation across countries. We highlight that a politico-financial crisis in a country may spread to other countries, as the public reappraises governments' inducement to service the debt. We then proceed to corporate governance reforms meant to halt the state capture by powerful economic interests. This agenda involves greater transparency, the establishment and enforcement of bankruptcy laws, as well as opening corporate financing to equity and bond markets.

The existing literature on the effect of crony capitalism on financial crises is scarce. Wei (2001) documents a positive relation between domestic cronyism and the ratio of international bank loans to foreign direct investment (FDI), and then highlights that such countries are exposed to the currency risk associated with fickle international capital flows, as opposed to less volatile FDI. This source of fragility has been evidenced to play a major role in the Asia crisis of 1997–1998. There are also ongoing works on the impact of cronyism on the fragility of the banking sector. Haslag and Pecchenino (2001) underscore that crony systems foster loan guarantees, which creates moral hazard, and thus financial fragility,

while Femminis and Ruggerone (2001) show how excessive government's subsidies to bank investment may exacerbate bank runs.

We will also show in this paper how a crisis in a country may spread to other countries, as the public reassesses policymakers' propensity to service the debt. In this respect, our paper relates to Drazen (2000), which features political contagion in a model of speculative attacks on currencies meant to provide an additional explanation for the spread of the crises of the European Exchange Rate Mechanism in 1992–1993. The possibility of contagious crises is based on incomplete information regarding governments' intentions about maintaining their currency within the system. A successful attack on a country leads speculators to reappraise the commitment of policymakers in other countries of the "club" to keep their exchange rate pegged.

The remainder of the paper is organized as follows. Section 2 builds the framework. Section 3 determines equilibria. Section 4 discusses reforms to reduce cronyism. Section 5 concludes and suggests follow-ups. For ease of exposition, proofs are in an Appendix.

## 2. A STYLIZED MODEL OF DEBT SERVICE WITH POLITICAL DISTORTION

In this section, we make the case for crony capitalism playing a crucial role in policymakers' decision to service the sovereign debt, and then we lay down a stylized model that captures the arguments put forward. The bottom line is that costs of default tend to be higher with cronyism, and that cronies are better off with debt repayment beyond what is socially optimal.

### *2.1. Cronyism Fosters Incentives not to Default on Sovereign Debt*

This subsection is devoted to highlighting the effects of crony capitalism on sovereign debt service. We first show that it increases financial fragility, thus the cost of repudiation, and then that the average citizen tends to suffer more from repaying the debt, whereas cronies are better off.

Crony capitalism tends to increase financial fragility because it entails weaknesses in the banking sector and high sovereign debt at the expense of foreign direct investment. As a matter of fact, funds are channeled to the economy through fickle international capital flows, as documented by Wei (2001). This takes place by means of international banking loans and purchase of sovereign bonds. The former contributes to a financing system heavily relying on banking, as opposed

to equity and bond markets, and to high corporate leverage. Together with implicit or explicit government guarantees given to banks for their loans to the corporate sector, and expectations of bailouts in case of trouble, this system is exposed to the risk of systemic effects. Besides, the purchase of sovereign bonds is a factor in high public debt, and this debt tends to be of short maturity due to lenders favoring the short run because of political uncertainty. As a result, such countries are more prone to crises and the cost of default is higher.

The average citizen pays a heavy tribute to debt servicing under clientelism. Incidentally, we focus here on tax issues and disregard other costs like social injustice, which would further nail that point. First, citizens pay heavy taxes to finance the debt service, with a debt higher than what it would be without cronyism, as seen above. Second, while citizens incur the debt burden, they may not reap the rewards of the loans that the debt service repays, since their proceeds are diverted by policymakers and their acquaintances. Third, international lenders are more likely to charge high interest rates due to aversion to ambiguity.

Cronies are, in general, better off with the debt not being repudiated because they take advantage of the status quo. Indeed, they are the main beneficiaries of the economic inefficiencies fostered by the system, such as inexpensive domestic credit in export-oriented countries. In addition, they are more likely than the average citizen to hold sovereign bonds. What is more, not repudiating the debt paves the way for the perpetuation of cronyism. Indeed, a contrario, defaulting entails subsequent politico-economic reforms, which may result in a system less favorable to cronies.

At this point, it should be clear that policymakers face a tradeoff about servicing the debt. On the one hand, they must account for the value of default, mainly in terms of fiscal pressure relief on citizens, which could be redirected to uses other than debt repayment, such as social expenses. Incidentally, policymakers who disregard that point run the risk of being overridden, even in corrupted economies. On the other hand, policymakers have to factor in the social costs of default, such as the systemic risk associated with financial fragility, which are higher with cronyism, as well as their personal costs, such as the incidence on their reputation or a fallout with their acquaintances.

We will now use a stylized model of debt servicing that captures these distortions.

### *2.2. A Model of Debt Service with Asymmetric Information on Costs of Default and Political Distortion*

This subsection sets up a framework of debt default in two steps. A financial stage features foreign lenders who assess their chances of being repaid before buying

the new debt issued by a country. In this respect, they must anticipate the outcomes of a political game. That political stage displays a non-cooperative Bayesian game between policymakers and citizens based on an informational advantage of the former over the latter regarding the social costs of sovereign default. Policymakers may not be benevolent and citizens have the power to dismiss them and overrule their decision to service the debt. This model is based on an ongoing work of Chang (2002), which brings a political dimension in the debt models of Calvo (1988) and Cole and Kehoe (1996).

A small open economy is populated with a representative agent and a policymaker. There are two periods and one good, which is freely traded and costs one unit of the world currency, which will be the numeraire and called "dollar." The first period is the "financial stage" and the second period is the "political stage," to which we now turn, successively.

The financial stage features new debt issued to foreign investors. At the beginning of the period, the economy has an investment opportunity that costs $I$ dollars in excess of the country initial reserves. The economy has a prior debt of $D_0$ dollars, due at the end of the period. The investment returns $R > 0$ dollars at the end of the period. Potential creditors are risk-neutral foreign lenders, which is consistent with the small size of the economy, and whose opportunity cost of funds is zero (the interest rate on the world capital market is zero). Hence, rational foreign investors will lend to the economy if and only if they are (credibly) promised an expected net return of zero.

To undertake this investment, the policymaker is instructed to sell claims to $D_1$ dollars, payable at the end of the first period, to foreign investors. Let $\omega$ be their *subjective probability* that the debt will be honored. Foreign lenders being rational and risk-neutral will buy claims such that $\omega D_1 = I$, that is, they require a gross yield of $1/\omega$. Hence, at the end of the period, the amount of reserves in the economy is $R$, the return on the investment, and the amount of debt due is $D = D_0 + I/\omega$. This ends the financial stage.

The political stage highlights the political nature of servicing the sovereign debt. Repudiating the debt is indeed a highly political decision, since it may entail overwhelming economic costs and because of political distortions.

The interesting case is $D > R$, condition that we assume, and thus repaying the debt requires collecting a tax $X = D - R$ from the representative agent. The cost, measured in dollars, of repaying the debt to the representative agent is $X + \psi(X)$, where $\psi$ is a non-decreasing function that captures the cost of distortionary taxation.

Repudiating the foreign debt is an option for the economy. Default is assumed an all-or-nothing decision. The value of default, $V$, results from that the representative citizen does not pay the tax and the economy keeps its reserves: $V = R + X + \psi(X)$. On the other hand, defaulting on the debt has a direct cost on the representative

agent, whose dollar value is denoted by $\chi$. It is assumed that $\chi$ is a Bernoulli random variable, which takes two values, a high value $\chi_H$, with probability $q \in ]0, 1[$, or a low value $\chi_L$, with probability $(1 - q)$, which satisfy: $\chi_L < \chi_H$.

We mainly think of the social cost of default as the extent of the crisis that would follow debt repudiation, as measured in terms of deviations of GDP growth from trends and of the cost of bank restructuring for public finances. The social cost of default captures the systemic risk associated with financial fragility, which in turn tends to be increasing in the extent of cronyism, as argued above.

The default decision is made by the policymaker on behalf of the representative agent. Nonetheless, the latter can overturn the former and overrule her decision, at some cost $\phi > 0$. The dismissal of the government constitutes a "political crisis" in the model.

**Assumption 1.** The policymaker has an information advantage over the representative agent and foreign lenders regarding costs of default. More specifically, the government observes the realization of $\chi$ before deciding whether or not to propose default. On the other hand, the representative agent chooses whether or not to retain the policymaker after observing the announcement of the policymaker, but not $\chi$. Hence, the representative agent makes a decision only on the basis of the prior distribution of $\chi$. So do foreign lenders as for buying the new debt issue.

Indeed, policymakers often obtain information regarding the pros and cons of default beforehand, in debt negotiations or through their economic research team, and this information is not generally available to average citizens or foreign lenders until there actually is default. In addition, this information may be costly to gather. This bias is further increased if we account for the opacity that surrounds crony capitalism.

**Assumption 2.** There are political distortions. The policymaker may incur personal costs if she proposes and implements a debt repudiation, in addition to the social cost of default. More precisely, she suffers a personal cost $\beta$ of either zero or $\gamma\chi$, with probabilities $p$ and $(1 - p)$, respectively. Thus, $p$ is the probability that she is "benevolent," and $(1 - p)$ the probability that she is "biased." In addition, the personal costs incurred by biased policymakers overshadow the social cost of default and the cost of dismissal in the following sense:

$$(1 + \gamma)\chi_L \geq \chi_H \tag{1}$$

and

$$\gamma\chi_L > \phi \tag{2}$$

In a strict interpretation, personal costs may translate into policymakers' loss of reputation or questioning about their abilities, which makes them "self-interested." On a broader register, political distortions capture any discrepancy between the fate of the average citizen and policymakers' objectives, such as catering for special groups. Reluctance to service the debt may induce a fallout with cronies, among other things. We stress that the public never observes whether policymakers have a bias or not, in contrast to clear-cut situations where the government in charge is either pro-business or benevolent. We also emphasize the distinction between being biased or not, which is independent of the social cost of default, and the personal cost incurred if distorted, which depends on that cost.

Condition (1) implies that, in the case: $\chi_L < V \leq \chi_H$, whereas a benevolent policymaker will propose to repay the debt only if the cost of default is high, a biased one will propose to repay even if that cost is low.

Condition (2) means that policymakers are more concerned about their personal fate than about the cost implied by being fired when proposing an action that does not suit the representative agent. That condition will imply that they may propose to service the debt while knowing that they will be dismissed in doing so. Technically, (1) and (2) allow to limit the number of equilibrium configurations.

We will refer in the sequel to the commitment of the policymaker to servicing the sovereign debt, as a catch-all that captures the social costs of default incurred by citizens, as well as the personal costs suffered by policymakers. As argued above, this commitment tends to be higher in crony systems. However, the policymaker must also account for the value of default. Indeed, if she disregards the fiscal pressure on the representative agent, she runs the risk of being overridden.

All in all, the government proposes to service the debt if the overall cost of default is higher than or equal to the taxation cost of debt service: $\chi + \beta \geq V$. If the policymaker is retained, her proposal is implemented. Otherwise, the representative agent learns the value of $\chi$, and chooses whether or not to default on the debt. This ends the political stage. Given this setup, we are now equipped to determine rational-expectations equilibria.

## 3. DEFAULT AND POLITICAL CRISIS IN EQUILIBRIUM

In this section, we determine rational-expectations equilibrium outcomes and derive two important results: first, lenders' expectations about the politico-financial outcome of the political game are self-fulfilling in that they can raise the likelihood of financial crises and can lead to political crises; second, debt crises are equilibrium outcomes whose likelihood increases with the subjective

assessment by the public of lesser government's incentives to service the debt. Furthermore, the probability of political crises in equilibrium rises with citizens' subjective probability that the policymaker is biased.

To do so, we will first concentrate on the political stage. In so doing, we will temporarily disregard foreign lenders' behavior, which reduces to thinking of the taxation cost of servicing the debt as an exogenous variable. We will then factor in lenders' expectations about being repaid, and derive the full equilibrium outcomes of the model.

### *3.1. Perfect Bayesian Equilibrium Outcomes of the Political Stage*

The restriction of the model to the political stage is a non-cooperative Bayesian game with private information between the policymaker and the representative agent. Its outcomes are given by its Perfect Bayesian Equilibria (PBE).

**Proposition 1.** PBE can be of five types:

Type i: If $V \leq \chi_L$, both types of policymakers always propose to service the debt and there is never political crisis;

Type ii: If $\chi_L < V \leq \chi_L + \phi/(1-z)$, a biased policymaker always proposes to service the debt, whereas a benevolent one proposes to do so if and only if the social cost of default is high; and the representative agent chooses not to dismiss the policymaker. Thus, the probability of default is $p(1-q)$, and the probability of political crisis is 0;

Type iii: If $\chi_L + \phi/(1-z) < V \leq \chi_H - \phi$, the policymaker follows the same strategy as in PBE Type ii, but she is overturned unless she proposes default. In addition, the representative agent defaults when firing a distorted policymaker and the cost of default is low; and services the debt in other cases. Therefore, the probability of default is $(1-q)$ and the probability of political crisis is $1 - p(1-q)$;

Type iv: If $\chi_H - \phi < V \leq \chi_H$, a benevolent policymaker proposes default regardless of $\chi$, which the representative agent accepts, while a biased one proposes to service the debt and is dismissed; in the latter case, the representative agent defaults if the social cost of default is low. Hence, the probability of default is $p + (1-p)(1-q)$ and the probability of political crisis is $1 - p$;

Type v: If $\chi_H < V$, a benevolent policymaker proposes default regardless of $\chi$, which the representative agent accepts, while a distorted one proposes to service the debt for both values of $\chi$ and is dismissed; in the latter case, the representative agent defaults regardless of $\chi$. So,

the probability of default is 1 and the probability of political crisis is $1-p$, where $z$ is the representative agent's posterior belief that the social cost of default is high, conditional on a debt service proposal by the policymaker, $z = P(\chi = \chi_H|$ policymaker proposes to repay the debt), and follows from Bayes' rule: $z = q/[q + (1-q)(1-p)]$.

Note that the condition for Type iii makes sense provided that $\phi$ and $z$ are sufficiently small relatively to the gap $[\chi_H - \chi_L]$, which is assumed.

*Proof:* See Appendix A. □

We have disregarded foreign lenders' behavior so far; we cope with this now.

### *3.2. Rational-Expectations Equilibrium Outcomes of the Two Stages*

In this subsection, we determine two-stage rational-expectations equilibria that match political-stage PBE types, by factoring in the yield required by rational foreign lenders for the new debt issue.

$D = D_0 + I/\omega$, where $\omega$ is foreign lenders' subjective probability that the debt will be honored. Rational lenders take account of the equilibrium outcomes of the political game when bidding a price for the new debt issued by the country. This impinges on the taxation cost of repaying the debt. To each previous PBE outcome of the political stage, corresponds a rational-expectations equilibrium, as follows.

**Proposition 2.** The rational-expectations equilibrium types matching the PBE outcomes are:

$$\text{Type i}: \; V = D_0 + I + \psi(D_0 + I - R) \leq \chi_L \tag{3a}$$

$$\text{Type ii}: \; \chi_L < D_0 + \frac{I}{1-p(1-q)} + \psi\left(D_0 + \frac{I}{1-p(1-q)} - R\right) \leq \chi_L + \frac{\phi}{1-z} \tag{3b}$$

$$\text{Type iii}: \; \chi_L + \frac{\phi}{1-z} < D_0 + \frac{I}{q} + \psi\left(D_0 + \frac{I}{q} - R\right) \leq \chi_H - \phi \tag{3c}$$

$$\text{Type iv}: \; \chi_H - \phi < D_0 + \frac{I}{q(1-p)} + \psi\left(D_0 + \frac{I}{q(1-p)} - R\right) \leq \chi_H \tag{3d}$$

$$\text{Type v}: \; \text{Foreign lenders bid } \omega = 0 \tag{3e}$$

*Proof:* It straightforwardly follows from Proposition 1. To illustrate, take Type ii. In the corresponding PBE outcome, the probability of default is: $p(1-q)$. It follows that rational lenders bid $\omega = [1-p(1-q)]$ to buy the new debt issued, which yields (3b). □

Importantly, multiple equilibria can arise, as we turn to next.

### *3.3. Determinants of Crises*

This subsection highlights the significance of the public's expectations in the materialization of financial and political crises. Those beliefs are about the PBE outcomes of the political game and its assessment of social costs of default and policymakers' personal costs.

**Corollary 1.** Foreign lenders' expectations about the PBE outcomes are self-fulfilling in that they can raise the likelihood of financial crises and lead to political crises.

*Proof:* Any two consecutive equilibrium types can concomitantly stand. To be concrete, take Types i and ii. If the parameters are such that Condition (3a) is an equality (or close to an equality), then (3b) will hold for realistic values of $p$ and $q$, as the first inequality of (3b) holds ($I/[1-p(1-q)] > I$) and the second inequality must hold for some parameter values). In that configuration, there are two equilibria, one without default, and one in which default takes place with positive probability. By the same token, Conditions (3b) and (3c) can simultaneously hold ($q < 1-p(1-q)$). In that configuration, there are two equilibria, one with no political crises, and one in which political crisis occurs with positive probability. □

This possibility of multiple equilibria means that both financial and political crises may result from foreign lenders' self-fulfilling prophecies. The underlying rationale is that, whenever two equilibrium outcomes coexist, if lenders hold adverse expectations about the PBE outcome that will eventually prevail, then they require higher interest rates on their loans, which magnifies the current account deficit ($X = D_0 + I/\omega - R$). In the end, the higher taxation cost of repaying the debt becomes compatible only with the PBE outcome that features more likely financial and political crises, therefore, validating lenders' adverse expectations. On the other hand, if they hold favorable beliefs about the outcome, they request lower interest rates and the taxation cost of debt service gets consistent with the PBE that displays less likely financial and political crises.

**Corollary 2.** Financial fragility increases with deteriorating fundamentals.

*Proof:* Bad fundamentals, in the sense of a higher initial debt $D_0$ or a smaller investment return $R$, are associated with a higher likelihood of financial crises, as captured by the transition from (3a) to (3b) or (3b) to (3c) and so on. □

This is merely because the taxation cost of debt service is higher, following the exacerbated current account deficit, and it actually materializes right from the political stage between policymakers and citizens. As for political crises, the relation is not monotonic. It is yet true that deteriorating fundamentals may lead to political crises, as showed by the transition from (3b) to (3c).

Whenever there are multiple equilibria, we need a mechanism to coordinate foreign creditors' expectations. We assume that there is a random variable that enables them to select a particular equilibrium. Incidentally, it may be the case that more than two types of equilibrium simultaneously arise. Yet, to keep notation to a minimum, we will only consider cases where two may concomitantly stand. And if so, we will bring in Bernoulli variables with weights of $1/2$, also for the sake of simplicity. This sunspots variable has no effects on costs of default. An unfavorable occurrence of sunspots can be equated with possibly unjustified but self-fulfilling adverse expectations.

Now that the coordination device is specified, the model determines the probability of financial and political crises equilibrium outcomes. To illustrate, suppose that the fundamentals are such that Conditions (3b) and (3c) simultaneously hold. With probability $1/2$, the equilibrium is reflected by (3b), and the probability of default is $p(1-q)$ while the probability of political crisis is 0. With probability $1/2$, the equilibrium is given by (3c), and the probability of default is $(1-q)$ while the probability of political crisis is $1-p(1-q)$. It follows that the probability of financial crisis $1/2(1+p)(1-q)$ and the probability of political crisis is $1/2(1-p(1-q))$. Likewise, we can compute these probabilities in other cases where two equilibria coexist; and in cases where only one equilibrium arises, those probabilities were determined in the subsection of PBE outcomes.

**Corollary 3.** The probability of financial crisis in equilibrium is decreasing in $q$ and $(1-p)$, the subjective probabilities that the social cost of default is high and that the government is biased; namely, with the perception by the public of a sharper government's propensity to service the debt. In addition, the probability of political crisis in equilibrium is increasing in $(1-p)$, i.e. with the likelihood of political distortions.

*Proof:* It straightforwardly follows from Proposition 2 and the aforementioned way of computing those probabilities in cases of multiple equilibria. □

This result underpins an explanation for contagion of crises as we will prove in the next section. Its rationale can be detailed as follows. That the probability of equilibrium financial crises decreases with a higher subjective probability by the public that the cost of default is large operates through two factors. First, a policymaker is more reluctant to default, whether or not she is distorted. That first factor is captured by the probability of equilibrium default being decreasing in $q$, thought of as the subjective assessment by the *representative agent* of the chances of a high cost of default, on whichever interval of value of default where $q$ is relevant. Second, with a higher subjective probability by *foreign lenders* of the cost of default being high, rational creditors expect default to be less likely (first factor) and hence require lower interest rates on their loans, as described in Corollary 1. The reasoning is analogous concerning the beliefs about the government type. The result for political crises is natural and does not warrant further comments.

So far, we have likened the subjective assessment by the public of the cost of default and the government type with their prior distributions, and have not thought of what may trigger expectational shifts. One possibility is electoral uncertainty. As a matter of fact, if international creditors anticipate the election of a populist or more benevolent government, they will charge higher interest rates, which may force a pro-business or biased government to default. Another possible reason for changes in expectations is a crisis in another country, as we will elaborate in the next section.

## 4. DISCUSSION

We saw that one of the main pitfalls associated with debt servicing under the pressure of clientelism is that it fosters an extra burden to the average citizen. It is therefore critical to attempt to reduce political distortions by pushing for governance-based reforms. This section first considers the timing of such reforms, and then envisages some specific measures to improve corporate governance.

### *4.1. Timing of Reforms*

In this subsection, it is first argued that policymakers must be opportunistic to fight the uphill battle against cronyism, and then that economic hard times may open such windows of opportunity. A model of international contagion of debt default is designed along those lines.

*4.1.1. Opportunism*

"Reform-mongering strategies" rely on obfuscation and opportunism. As pointed out by Navia and Velasco (2002), this entails taking advantage of "honeymoons," i.e. the strong political capital owned just after an election of outmost importance, such as a land-slide victory or a long-expected changeover of political power between parties (e.g. negotiate a tax increase with the conservative opposition while postponing tackling human rights conflicts). This also means being opportunistic (e.g. corruption scandals open windows of opportunity to reform bureaucracies or sectors with strong unions or other interest groups), or "grooming potential allies." The latter means arousing the interest of potential beneficiaries of a reform and helping them to organize so as to influentially voice their support against the reform opponents (e.g. as for reforming the public sector, creating pockets of good performance within the public sector, which can serve as examples for further reforms).

*4.1.2. Economic Hard Times Provide an Opportunity*

Periods of severe economic beatings may open the door to fundamental economic reforms in crony systems. Indeed, in times of turmoil, the opportunity cost of diverting resources necessary to economic restructuring is more likely to fall below the benefits that powerful groups may attain after reform, and the implicit coalition between cronies may break down as groups fear transformations induced unilaterally by other groups.

Tornell (2002) explains with this line of arguments the materialization of the reforms in Mexico in the 1980s and 1990s, which deregulated the economy and opened it up to foreign trade and investment, notwithstanding adverse effects on power holders. As underscored by Navia and Velasco (2002), reforms of the 1990s in Latin America seemed to be triggered by default or hyperinflation or any other severe economic beating, aside from Colombia that undertook deep policy changes not prompted by crises.

The question now is how to formalize the fact that hard times may impinge on the politico-economic equilibrium, and lead to reforms, eventually. Two contributions cope with this issue. In Drazen and Grilli (1993), the cost of inflation increases exogenously, and thus can speed up measures of stabilization, since procrastination is more costly. Velasco (1999) shows that an unfavorable shock to the government's revenue could cause the debt to accumulate more quickly and hence accelerate the implementation of fiscal reforms. We now propose a third model, based on international contagion of debt default.

*4.1.3. Contagion of Sovereign Debt Repudiation*

In this subsection, we substantiate that a politico-financial crisis in a country may spread to other countries through an informational channel, as the public reassesses

governments' propensity to service the debt, provided that costs of default and policymakers' personal costs are correlated across countries.

We first extend the framework of Section 2 to a two-country model. To do so, we specify the distributional relation across countries between social costs of default and policymakers' personal costs, and we pay attention to the sequential coordination of lenders' expectations.

We consider two small open economies, say, A and B, during two consecutive periods. Country A is the economy previously examined, and we re-label its parameters with Superscript A, while using Superscript B in the other country. The two countries have the same fundamental structure. The analysis in Country B is analogous to A, except for the crucial fact that the public (international lenders and the representative agent in B) knows whether or not a crisis has occurred in A when about to make a decision regarding buying the new debt issue and dismissing the policymaker in B, respectively. We mean to prove that a crisis in A impinges on the likelihood of a crisis in B due to this additional information. We first lay down two important assumptions.

**Assumption 3.** Policymakers' propensities to debt service are correlated across countries. Formally, random social costs of default $\chi^A$ and $\chi^B$ are positively correlated, as well as policymakers' personal costs $\beta^A$ and $\beta^B$.

This assumption is essential to political contagion. Groups of countries in emerging markets display clear-cut similarities relevant for social costs of default: The fragility of their financial systems, due to high corporate leverage or to the lack of diversification of financing sources, the weakness of bankruptcy laws, or the extent of their enforcement. This homogeneity entails social costs of default being correlated across these countries. Besides, together with that information acquisition is costly, it also implies that foreigners are likely to reappraise social costs of default should a crisis materialize in any of those countries.

An important additional argument for the previous correlation and reassessment is membership of those countries to "clubs," as pointed out by Drazen (2000). These clubs may be explicit (such as the former European Exchange Rate Mechanism) or implicit (more or less formal cooperative agreements) or ongoing (such as being part of the Free Trade Area of the Americas), and a failure of a member of the club may impinge on policymakers' inclination to service the debt. As a matter of fact, following a crisis in a country of the club, other countries may put less weight on meeting painful conditions, as they involve raising unpopular taxes on their citizens. This could result from commitment as being seen less important or reneging more acceptable, notably if it is an important member (a success story) of the group that failed. In addition, international financial institutions may end up more inclined to forbearance, thus, countries under scrutiny have less incentives to make efforts.

These membership effects may also affect policymakers' personal costs. Indeed, arguing to be part of clubs makes it easier obfuscating the true reasons of a stance or skews towards groups and vindicating unpopular decisions. Further, crony capitalism is a prime reason for similarities among certain groups of emerging markets regarding policymakers being self-interested or catering for special interests, as previously argued. This is magnified when the corporate sector is mainly funded by domestic banks in contrast with equity and bond markets. This homogeneity entails political distortions being correlated across those countries.

**Assumption 4.** Sunspot variables coordinating foreign lenders' expectations are independently and identically distributed across time and countries. This not only means that the way an equilibrium is selected in B is the same as in A when multiple equilibria exist, but also that the coordination mechanism in B is independent of what occurred in A.

This assumption clears up an ambiguity often seen in the literature of contagion. We rule out alterations in the coordination device of public's expectations following sovereign default in A. It follows that the vector of informational contagion is here the reassessment of costs of default and government types, which we formally prove next.

We now substantiate the possibility of contagion. A politico-financial crisis in a country may spread to other countries through an informational channel, as the public reassesses governments' propensity to service debt.

**Proposition 3.** There is contagion from Country A to Country B, that is to say, a crisis in A increases the likelihood of a crisis in B, and this infection is solely based on a Bayesian reassessment by the public of the inclination of B's government to service the debt. More specifically, the materialization of a crisis in A increases the likelihood that the cost of default is low and that policymakers are benevolent in Country B.
Denoting by $D^{\mathrm{A}}$ ($D^{\mathrm{B}}$, respectively) a crisis in A(B), and with $P(X|D^{\mathrm{A}})$ standing for the probability of the event $X$ conditional on $D^{\mathrm{A}}$, the previous statements write: $P(D^{\mathrm{B}}|D^{\mathrm{A}}) > P(D^{\mathrm{B}})$, $P(\chi^{\mathrm{B}} = \chi_{\mathrm{L}}^{\mathrm{B}}|D^{\mathrm{A}}) > P(\chi^{\mathrm{B}} = \chi_{\mathrm{L}}^{\mathrm{B}})$, and $P(\beta^{\mathrm{B}} = 0|D^{\mathrm{A}}) > P(\beta^{\mathrm{B}} = 0)$, respectively.

*Proof:* See Appendix B. □

The rationale goes as follows. In a nutshell, the public conditions its behavior, not on the unconditional probabilities of the social cost of default and of the political distortion in B, but on such probabilities conditional on whether or not there was a crisis in A. This opens the door for contagion, which can be further disentangled

as follows. First, the materialization of a crisis in A induces the public, both home and abroad, to downgrade the government's incentive to service the debt in that country. Indeed, in Corollary 3, the likelihood of crises was showed to be increasing in the prior subjective probabilities of the cost of default taking its low value and of the government being benevolent. Therefore, upon occurrence of a crisis, the *posterior* probabilities that the cost of default takes its low value and the government is benevolent rise, on the grounds of Bayes' rule. Second, those reassessments in the catalyst country in turn arouse a rise in the subjective probabilities that the cost of default and the government's personal cost take a low value in Country B, provided those costs are positively correlated across countries. And third, those higher probabilities in B consequently entail crises being more likely in that country, using again Corollary 3.

The idea behind this result is reminiscent of the political contagion of currency crises highlighted by Drazen (2000), in the context of the collapse of the European Exchange Rate Mechanism in 1993. To Drazen, membership effects can explain why a currency crisis in a member of the club may dampen the commitment of policymakers in other countries to keeping their exchange rate pegged.

At this point, we have proved the possibility of political contagion of financial crises, whether or not coupled with political crises, through a Bayesian reassessment by the public of Country-B policymakers' incentives to debt service.

It follows that in economic hard times, the risk of international contagion of sovereign default is real, and policymakers have more incentives to repudiate the debt, be they biased or not. And then, by reneging on debt servicing, they pave the way for reforms that may reduce the advantages of their acquaintances.

### *4.2. Governance-Based Reforms*

Improving corporate governance means dealing with the supply side of cronyism: the private sector. As a matter of fact, one of the key elements of an anti-corruption strategy is the creation of a competitive private sector. In turn, a key element to constrain the ability of powerful economic interests to capture the state is good corporate governance.

We opt to focus the discussion on the private sector for the sake of brevity. This does not mean that public governance is unimportant in this respect. Indeed, improving the institutions of democracy helps to dampen the political clout of cronies. For example, a suggestion by Keefer (2001) is to increase the number of elected veto players in the political decision process.

Weak institutions for corporate governance encourage corruption, as poorly governed managers often use their positions to extract favors from the state,

which they can later misappropriate, by embezzling or running their firms into bankruptcy, rather than reinvest those liberalities into restructuring their firms, to avoid sharing their gains with other stakeholders. In addition, adopting standards of transparency in coping with investors and creditors is a major benefit in that it helps to prevent systemic banking crises. Further, for countries seeking to attract financial capital, corporate governance does matter, as it bolsters the confidence of potential investors.

Good corporate governance involves in particular a better transparency in corporate transactions, in accounting and auditing procedures, or in purchasing deals. Examples of such measures are: public disclosure of share ownership and cross-holdings, strong penalties for insider trading, published independent audits of financial accounts based on standardized rules, the appointment of outsiders to boards of directors, or the establishment of an effective legal framework for the exercise of creditors' rights.

Making a step further and adopting bankruptcy procedures means dealing with business failures in a way fair to all stakeholders, including workers and creditors. On the other hand, in absence of enforcement systems, insiders can strip the remaining value out of an insolvent firm for their own benefits.

On a broader register, financial systems based on funding mainly provided by banks, on high corporate leverage, or on implicit or explicit governmental insurance to the banking sector, do not allow much transparency, and thus pave the way for cronyism. Therefore, a step in the right direction is reforming the banking sector and opening more room for equity and bond markets as providers of funds. In this respect, Dekle and Kletzer (2002) study institutional features of the banking systems in East Asia, namely, the extent of explicit or implicit government's guarantees, the pattern of prudential regulation and corporate reliance on bank credit. They contrast the cases of Thailand and South Korea that suffered crisis more severely, which rate poorly by those standards, and those of Singapore and Taiwan, which did not experience crisis.

All in all, good corporate governance involves better transparency, establishment and enforcement of bankruptcy laws, as well as opening corporate financing to equity and bond markets.

To conclude this section, we stress that international financial institutions (IFIs) can spearhead governance. Conditioning emergency aid on political reforms is a possibility. This means that IFIs must make clear that they might provide assistance in case of crisis only if vulnerable countries have undertaken such reforms, and this can be credible if IFIs have consistently implemented such a policy. This is in line with "aid selectivity" advocated by Drazen (1999) in the context of assistance in normal times, i.e. not linked to crises. A step in this direction has been made, particularly in the aftermath of the Asian crisis

of 1997–1998, with the development of international financial standards and codes of conduct, intended to improve the quality of financial supervision and to increase transparency and accountability of domestic policymakers.

## 5. CONCLUSION

This paper featured the decision to service sovereign debt through the lens of crony capitalism, which is quite a topical issue in Latin America. To do so, we laid down a stylized model that captures distortions implied by clientelism and determined rational-expectations equilibria.

Our main findings have been the following. First, cronyism provides policymakers with incentives not to default on the sovereign debt, and this, at the expense of the average citizen. Indeed, it increases financial fragility, and thus the costs of debt repudiation, and acquaintances are in general better off with the debt not being repudiated as they take advantage of the status quo, whereas the average citizen incurs the debt burden through high taxes.

Second, lenders' expectations about the politico-financial outcome of the political game are self-fulfilling in that they can increase the likelihood of financial crises and can lead to political crises. Indeed, if lenders hold adverse expectations about the outcome that will eventually prevail, then they require higher interest rates on their loans, which magnifies the current account deficit. In the end, the higher taxation cost of servicing the debt becomes compatible only with an outcome that features more likely financial and political crises, therefore, validating lenders' unfavorable prophecies.

Third, debt crises can arise in equilibrium and their probability increases with the subjective assessment by the public of lesser government's incentives to service the debt. More specifically, that probability is increasing in the subjective probabilities that the social cost of default is low and that the government is benevolent. Furthermore, the likelihood of equilibrium political crises rises with citizens' subjective appraisal that the policymaker is biased.

Fourth, economic hard times open windows of opportunity to implement reforms, since the implicit coalition between groups of cronies may break down. This may happen if a crisis materializes in another country with perceived similarities. As a matter of fact, a politico-financial crisis in a country may spread to other countries through a political channel, as the public reassesses governments' propensity to repay the debt, provided that costs of default and policymakers' personal costs are correlated across countries.

Fifth, corporate governance reforms can help to halt the state capture by powerful economic interests. This agenda involves greater transparency, the

establishment and enforcement of bankruptcy laws, as well as opening corporate financing to equity and bond markets.

A possible follow-up would be to feature the spread of bank panics while allowing for a political dimension. Indeed, the banking sector fragility and crony capitalism have separately been discussed as culprits for the turmoil in Asia of 1997–1998. A model combining both would be appropriate. Another possible continuation, motivated by the current events in Latin America, is analyzing the interaction between electoral uncertainty and financial fragility.

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# APPENDIX A

*Proof of Proposition 1*

To illustrate, we elaborate the derivation of PBE of Types ii and iii. The full proof can be found in Chang (2002).

We start with Type ii. First of all, the policymaker's strategy is optimal. This is clear if she is benevolent since $\chi_L < V$ and $V < \chi_H$. This is also clear if she is biased, making use of Condition (1): $(1+\gamma)\chi_L \geq \chi_H$, in Assumption 2 and of $V < \chi_H$.

Now, as for the representative agent, first, he has no incentives to overturn the policymaker if she proposes default. Indeed, given the policymaker's strategy, the representative agent infers that $\chi = \chi_L$ with probability one. Thus, default is socially optimal, and there is no reason to dismiss the policymaker. Second, he has no incentives either to fire the policymaker if she proposes to service the debt, since the cost of dismissal is greater than that of accepting the policymaker's proposal. To see that, the cost of retaining the policymaker is $V$, while the expected cost of firing her is $\phi + zV + (1-z)\chi_L$, with $z = P(\chi = \chi_H \mid$ policymaker proposes to repay). Indeed, the representative agent expects that he will himself service the debt with probability $z$ and will not with probability $(1-z)$. Finally, $V \leq \phi + zV + (1-z)\chi_L$ boils down to the right-hand inequality of the condition of Type ii.

It is easy to show that: $z = q/[q + (1-q)(1-p)]$ by means of Bayes' rule.

In PBE Type iii, a political crisis occurs unless the policymaker is benevolent and the social cost of default is low. The preceding reasoning implies that $\chi_L + \phi/(1-z) < V$ must hold for that the representative agent opts to dismiss the policymaker if she proposes to repay.

Now, as for the policymaker, we first consider the case where she is benevolent. It is optimal for her to propose default when the cost of default is low (since $\chi_L < V$). If the cost of default is high, the benevolent policymaker's cost from proposing to repay is $V + \phi$, as she knows that she will be fired following such an announcement, after which the representative agent will service the debt, eventually ($V < \chi_H$). On the other hand, by proposing default, the cost is $\chi_H$, as the political crisis will be avoided at the price of default. Hence, it is optimal for the benevolent policymaker to propose to repay if: $V \leq \chi_H - \phi$, when $\chi = \chi_H$.

We now consider the case where the policymaker is biased. First, when $\chi = \chi_H$, since $V \leq \chi_H - \phi$ holds, then $V \leq (1+\gamma)\chi_H - \phi$ holds, and it is optimal to propose to repay and be dismissed. Second, when $\chi = \chi_H$, proposing default means avoiding the political crisis, but the cost to the policymaker is $(1+\gamma)\chi_L$, whereas proposing to repay means dismissal, after which the representative agent won't service the debt since the cost of default is low, which yields a cost of $\chi_L + \phi$. It follows that proposing to repay is optimal for the policymaker, making use of Condition (2): $\gamma\chi_L > \phi$, in Assumption 2. This ends the derivation of PBE Type iii.

Deriving Type iv follows along similar lines, while Type i and v are easier to show.

## APPENDIX B

*Proof of Proposition 3*

Due to Corollary 3, it suffices to check that:

$$P(\chi^B = \chi_L^B | D^A) > P(\chi^B = \chi_L^B) \tag{B1}$$

and

$$P(\beta^B = 0 | D^A) > P(\beta^B = 0) \tag{B2}$$

While the economic intuition behind these inequalities is clear-cut and was sketched after Assumption 3, formally proving them involves coping with the different configurations displayed in Section 3.

First, we rewrite the PBE outcomes with set notation: Type i writes: $D^A = \varnothing$ and $P^A = \varnothing$; Type ii: $D^A = (\chi^A = \chi_L^A) \cap (\beta^A = 0)$ and $P^A = \varnothing$; Type iii: $D^A = (\chi^A = \chi_L^A)$ and $P^A = [(\chi^A = \chi_L^A) \cap (\beta^A = 0)]^C$; Type iv: $D^A = (\beta^A = 0) \cup [(\chi^A = \chi_L^A) \cap (\beta^A = 0)^C]$ and $P^A = (\beta^A = 0)^C$; and Type v: $D^A = \Omega$ and $P^A = (\beta^A = 0)^C$; where $P^A$ designates a political crisis in A, the symbol $S^C$ means the complementary set of $S$, the symbol $\cup$ designates the union of two disjoint sets, $\varnothing$ is the empty set, and $\Omega$ is the universe (sure event).

To alleviate notation, when discussing rational-expectations equilibria, we will refer to Types of PBE outcomes of the corresponding political stage, as we did in the text body.

A crisis in Country A means either there was only default or there were both default and political crisis. We will prove (B1) in one configuration of each case. Proving (B1) in other configurations would be analogous to either.

Now, only default means one of the three following configurations: Unique equilibrium: Type ii; or multiple equilibria: Types i and ii, and foreign lenders

coordinate on ii; or multiple equilibria: Types ii and iii, and foreign lenders coordinate on ii. For example, we show (B1) in the second configuration. We have:

$$D^{\mathrm{A}} = (\chi^{\mathrm{A}} = \chi_{\mathrm{L}}^{\mathrm{A}}) \cap (\beta^{\mathrm{A}} = 0) \cap (F_{\mathrm{i,ii}}^{\mathrm{A}} = 1) \tag{B3}$$

where $(F_{\mathrm{i,ii}}^{\mathrm{A}} = 1)$ means that foreign lenders coordinate on Type ii. Hence,

$$\begin{aligned} P(\chi^{\mathrm{B}} = \chi_{\mathrm{L}}^{\mathrm{B}} | D^{\mathrm{A}}) &= P(\chi^{\mathrm{B}} = \chi_{\mathrm{L}}^{\mathrm{B}} | (\chi^{\mathrm{A}} = \chi_{\mathrm{L}}^{\mathrm{A}}) \cap (\beta^{\mathrm{A}} = 0) \cap (F_{\mathrm{i,ii}}^{\mathrm{A}} = 1)) \\ &= P(\chi^{\mathrm{B}} = \chi_{\mathrm{L}}^{\mathrm{B}} | \chi^{\mathrm{A}} = \chi_{\mathrm{L}}^{\mathrm{A}}) > P(\chi^{\mathrm{B}} = \chi_{\mathrm{L}}^{\mathrm{B}}), \end{aligned} \tag{B4}$$

where the second equality follows from the assumption that whether or not the policymaker is benevolent is independent of the social cost of default, and uses that the sunspots variable is independent of the social cost of default and of being benevolent, and where the inequality follows from the assumption that social costs of default are positively correlated across countries. We have thus showed (B1) in this case. The derivation of (B2) follows similar lines, using the assumption that personal costs are positively correlated across countries.

We now prove (B1) and (B2) when there are both default and political crisis. Several such configurations are possible, some with a unique equilibrium, some with multiple equilibria. To illustrate, we take the most involved configuration: Type iii and Type iv arise, and then, foreign lenders coordinate on either, i.e.

$$\begin{aligned} D^{\mathrm{A}} = &\{(\chi^{\mathrm{A}} = \chi_{\mathrm{L}}^{\mathrm{A}}) \cap (F_{\mathrm{iii,iv}}^{\mathrm{A}} = 0)\} \\ &\times \cup \{[(\beta^{\mathrm{A}} = 0) \cup [(\chi^{\mathrm{A}} = \chi_{\mathrm{L}}^{\mathrm{A}}) \cap (\beta^{\mathrm{A}} \neq 0)]] \cap (F_{\mathrm{iii,iv}}^{\mathrm{A}} = 1)\}, \end{aligned} \tag{B5}$$

where $(F_{\mathrm{iii,iv}}^{\mathrm{A}} = 0)$ ($(F_{\mathrm{iii,iv}}^{\mathrm{A}} = 1)$, respectively) means that foreign lenders coordinate on Type iii (Type iv, respectively). Then,

$$\begin{aligned} &P((\chi^{\mathrm{B}} = \chi_{\mathrm{L}}^{\mathrm{B}}) | D^{\mathrm{A}}) \\ &= \frac{\begin{array}{l} P((\chi^{\mathrm{B}} = \chi_{\mathrm{L}}^{\mathrm{B}}) \cap (\chi^{\mathrm{A}} = \chi_{\mathrm{L}}^{\mathrm{A}}) \cap (F_{\mathrm{iii,iv}}^{\mathrm{A}} = 0)) \\ \quad + P((\chi^{\mathrm{B}} = \chi_{\mathrm{L}}^{\mathrm{B}}) \cap (\beta^{A} = 0) \cap (F_{\mathrm{iii,iv}}^{\mathrm{A}} = 1)) \\ \quad + P((\chi^{\mathrm{B}} = \chi_{\mathrm{L}}^{\mathrm{B}}) \cap (\chi^{\mathrm{A}} = \chi_{\mathrm{L}}^{\mathrm{A}}) \cap (\beta^{\mathrm{A}} \neq 0) \cap (F_{\mathrm{iii,iv}}^{\mathrm{A}} = 1)) \end{array}}{P(D^{\mathrm{A}})} \\ &= \frac{\begin{array}{l} P((\chi^{\mathrm{B}} = \chi_{\mathrm{L}}^{\mathrm{B}}) | (\chi^{\mathrm{A}} = \chi_{\mathrm{L}}^{\mathrm{A}})) P(\chi^{\mathrm{A}} = \chi_{\mathrm{L}}^{\mathrm{A}}) P(F_{\mathrm{iii,iv}}^{\mathrm{A}} = 0) \\ \quad + P((\chi^{\mathrm{B}} = \chi_{\mathrm{L}}^{\mathrm{B}}) P(\beta^{\mathrm{A}} = 0) P(F_{\mathrm{iii,iv}}^{\mathrm{A}} = 1) \\ \quad + P((\chi^{\mathrm{B}} = \chi_{\mathrm{L}}^{\mathrm{B}}) | (\chi^{\mathrm{A}} = \chi_{\mathrm{L}}^{\mathrm{A}})) P(\chi^{\mathrm{A}} = \chi_{\mathrm{L}}^{\mathrm{A}}) P(\beta^{\mathrm{A}} \neq 0) P(F_{\mathrm{iii,iv}}^{\mathrm{A}} = 1) \end{array}}{P(D^{\mathrm{A}})}, \end{aligned} \tag{B6}$$

where we use that sunspots do not affect costs of default nor being biased, and that social costs of default and being benevolent are independent.

Now, we make use of: $P((\chi^B = \chi_L^B)|(\chi^A = \chi_L^A)) > P(\chi^B = \chi_L^B)$, due to the positive correlation between $\chi^A$ and $\chi^B$, and we put $P(\chi^B = \chi_L^B)$ in factor in the right-hand side of (B6). Using again (B5), we then obtain (B1). This completes the proof of Proposition 3.

# OWNERSHIP PATTERNS AND THE SAUDI MARKET

Waleed Alajlan

## ABSTRACT

*This paper investigates the Saudi market and the ownership structures of listed firms within the Saudi context. This paper examines the historical phases of evolution of the Saudi market since the first flotation of a Saudi firm in 1935 to date. The data reveals high ownership by families and the government (30%) in the total companies listed. This paper also underscores the capacity of the Saudi market to develop into one of the leading stock exchange markets in the Middle East and East Asia. The discussion concludes that the Saudi market needs greater transparency, better legal frameworks, corporate governance codes, and more regulation, so as to realise its potential.*

## 1. INTRODUCTION

This paper examines the structure of the Saudi market and analyses the equity market and ownership structure of listed companies within the Saudi market. The first section provides a general description of the Saudi market and its firms. Section 2 analyses and presents insights into features that are more distinctive of the Saudi market, relative to other Western countries and regions. The Section 3 analyses the Saudi equity market and firms listed on the Saudi stock exchange. This section also presents a current review of Saudi listed companies in terms of their market capitalisation. Additionally, the market capitalisation of each sector in

**Corporate Governance**
**Advances in Financial Economics, Volume 9, 161–186**

**ISSN: 1569-3732/doi:10.1016/S1569-3732(04)09007-3**

the Saudi Market will be examined here. Finally, the paper concludes by reviewing available information on the ownership structure of Saudi listed companies.

## 2. GENERAL DESCRIPTION

Over the last century, control of capital has shifted from private financial institutions to public markets in western countries. The market for corporate control in developing countries is still dominated by financial institutions and is still far smaller in terms of market capitalisation than those in developed countries. The Arab world's 14 stock markets are very small, with a total capitalisation at the end of 2002 of around $288 billion – about 1% of the global stock market capitalization (Table 4). International investors have shown little interest in the Arab world. The region nets less than 1% of global foreign direct investment (FDI) and only about 4% of FDI flowing to the developing world (Abdelnour, 2003). Abdelnour (2003) shows that the main reason for this trend is the low return on investment in these countries. For instance, in April 2003, the World Bank reported that the Middle East and North Africa (MENA) had the lowest investment returns on FDI compared with other regions of the world.[1] Arab markets are poorly regulated, laws governing insider trading and financial disclosures simply are not thoroughly enforced. In addition, most Arab markets lack an adequate transparency and accountability. Thus, this paper examines and reveals some of the basics of the Saudi market in term its financial markets and ownership structures.

The Saudi Arabian market is the biggest in the Arab world, in which it represents 44% of the total market capitalisation of the 14 Arab World's stock markets (Fig. 1).

Moreover, according to the World Federation of Exchanges markets capitalisation statistics for 2002, the Saudi market ranks ninth among the world's major emerging stock markets by market capitalization. The Saudi market had climbed to eighth place in the rankings by the end of January 2003, when the successful Saudi Telecom Company's (STC) flotation boosted its market capitalization to U.S.$ 97 billion. In August 2003, with U.S.$ 149,649 billion worth in market capitalization, the Saudi market was just behind bourses such as Kuala Lumpur, and just ahead of Helsinki, and substantially ahead of Singapore, Mexico, Athens, Oslo, Thailand, Istanbul, and Jakarta (Fig. 2).

Thus, the Saudi market has the basic components to be one of the most successful markets in the Middle East and the Asia region. Although, like many Arab and developing stock markets, the Saudi market lacks sound regulations, transparency and the disclosure of financial information which is almost non-existent (Al-dukheil, 2003). This paper attempts to uncover and examine the nature of the Saudi stock market and investigates the ownership patterns in

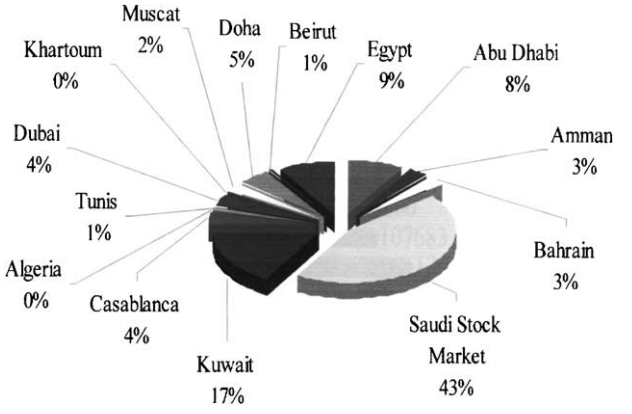


*Fig. 1.* Arab Market Cap – June 2003.

Saudi listed companies where it is not studied previously. The upcoming section examines the nature of Saudi companies as stated by the companies Act (1965) and examines the current listed companies by their legal status.

### *2.1. The Nature of Saudi Companies*

As of 2001, there were 9,248 firms owned solely by Saudi nationals and 1,324 "mixed" firms (i.e. firms where owners are both Saudi and non-Saudi nationals) within the Saudi economy (Ministry of Planning, 2001). These firms are legally registered with the ministry of commerce and industry in Saudi Arabia. However, some had not commenced business at the time of registration (Ministry of Planning, 2001).

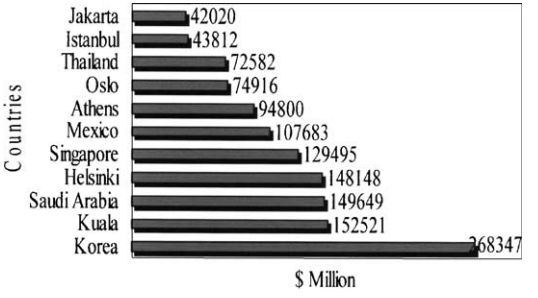


*Fig. 2.* Market Cap in some Selected Countries – August 2003.

***Table 1.*** Number of Different Registered Saudi Companies.

| Legal Status | Saudi | Mixed |
|---|---|---|
| Limited partnership | 1024 | 8 |
| Partnership Ltd. by share | 1 | – |
| General partnership Co. | 2511 | 19 |
| Limited liability par. | 5594 | 1296 |
| Joint stock Co. (including some non-trading firms) | 118 | 1 |
| Total | 9248 | 1324 |

*Source:* *Statistical Yearbook* (2001). Ministry of Planning.

The legally defined forms of companies in Saudi Arabia are: general partnership, partnership limited by shares, limited liability partnership, corporation (joint stock Company), joint venture companies, companies with variable capital[2] and corporative companies.[3]

The distribution of registered companies, operating in Saudi Arabia, by legal status is presented within Table 1.

The distribution of the top 100 companies in Saudi Arabia by turnover/sales, and further classification based on their legal status is presented in Table 2. Table 2 provides detail on the legal status of these firms (e.g. proprietorship, sole proprietorship etc.). Additionally, it displays their classification (as enterprises, i.e. owned by single persons or families) or alternative legal status.

Many firms operating in Saudi Arabia were proprietorships/sole proprietorship enterprises, in their early stages, but have later acquired new legal classifications.

***Table 2.*** Number of Different Legal Status in the Top 100 Saudi Companies (2002).

| Legal Status | Numbers |
|---|---|
| Traded joint stock | 37 |
| Non-traded joint stock | 1 |
| Limited liability | 46 |
| Sole proprietorship | 8 |
| Limited partnership | 2 |
| Partnership | 2 |
| Holding company | 3 |
| Proprietorship | 1 |
| Total | 100 |

*Source:* *Arab News* (2003).

***Table 3.*** Top 100 Saudi Companies 2002 (SAR Millions).

| Rank 2002 | Company | Turnover/ Sales | Assets | Rank Assets | Capital | Employees | Year | Activities | Legal Status |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Saudi Basic Industries Corp. (SABIC) | 29,382 | 89,236 | 2 | 15,000 | 15,000 | 1976 | Industrial | Joint Stock |
| 2 | Kingdom Holding Company | 29,200 | 78,300 | 3 | 71,200 | 32 | 1997 | Diversified | Limited Liability |
| 3 | Saudi Telecom Company | 19,781 | 39,170 | 11 | 12,000 | 24,703 | 1998 | Services | Joint Stock |
| 4 | Dallah Al-Baraka Group | 17,037 | 47,033 | 7 | 3,750 | 41,000 | 1969 | Diversified | Limited Liability |
| 5 | Saudi Electricity Co. | 15,480 | 90,609 | 1 | 38,288 | 30,070 | 2000 | Services | Joint Stock |
| 6 | Saudi Aramco Mobil Refinery (SAMREF) | 11,510 | 4,413 | 18 | 2,050 | 830 | 1981 | Industrial | Limited Liability |
| 7 | Saudi American Bank | 5,310 | 77,233 | 4 | 4,000 | 2,300 | 1980 | Banking | Joint Stock |
| 8 | Consolidated Contractors Int'l Co. S.A.L. | 4,929 | 3,473 | 22 | 375 | 49,523 | 1952 | Diversified | Limited Liability |
| 9 | Olayan Financing Company | 4,467 | 8,324 | 14 | 10 | 8,800 | 1947 | Diversified | Limited Liability |
| 10 | Riyad Bank | 4,456 | 67,160 | 5 | 4,000 | 3,389 | 1957 | Banking | Joint Stock |
| 11 | Al-Rajhi Banking & Investment Corp. | 3,522 | 51,742 | 6 | 2,250 | 5,800 | 1987 | Banking | Joint Stock |
| 12 | Savola Group | 3,500 | 3,600 | 21 | 629 | 5,200 | 1979 | Industrial | Joint Stock |
| 13 | The Saudi British Bank | 2,962 | 41,921 | 9 | 2,000 | 2,078 | 1978 | Banking | Joint Stock |
| 14 | Saad Trading & Construction Co. | 2,877 | 3,672 | 20 | 500 | 4,511 | 1986 | Diversified | Limited Liability |
| 15 | Al Faisalia Group | 2,500 | 1,645 | 30 | 375 | 4,500 | 1970 | Diversified | Limited Liability |
| 16 | Alsuwaiket Trading Contracting Group | 2,115 | 983 | 50 | 50 | 1,413 | 1947 | Diversified | Limited Liability |
| 17 | S.A. Al Rajhi Co. (Al Watania) | 1,815 | 4,152 | 19 | 498 | 8,314 | 1977 | Diversified | Sole Proprietorship |
| 18 | Saudi Hollandi Bank | 1,773 | 25,169 | 12 | 945 | 1,116 | 1976 | Banking | Joint Stock |
| 19 | Almarai Co. Ltd. | 1,650 | N/A | | 200 | 3,900 | 1976 | Agribusiness | Limited Liability |
| 20 | Saudi Research & Marketing Group | 1,587 | 1,479 | 36 | 600 | 2,800 | 2000 | Diversified | Limited Liability |
| 21 | Banque Saudi Fransi | 1,532 | 40,006 | 10 | 1,800 | 1,305 | 1977 | Banking | Joint Stock |
| 22 | Arab National Bank | 1,531 | 43,047 | 8 | 1,800 | 1,934 | 1980 | Banking | Joint Stock |
| 23 | Riyadh Cables Group of Cos | 1,505 | 1,437 | 37 | 868 | 1,550 | 1984 | Industrial | Limited Liability |

**Table 3.** (*Continued*)

| Rank 2002 | Company | Turnover/ Sales | Assets | Rank Assets | Capital | Employees | Year | Activities | Legal Status |
|---|---|---|---|---|---|---|---|---|---|
| 24 | Marie Bin Mahfouz Group & Co. Ltd. | 1,420 | 1,560 | 32 | 50 | 1,211 | 1970 | Diversified | Limited Liability |
| 25 | Al Seif Group | 1,345 | N/A | | N/A | 4,610 | 1951 | Diversified | Limited Liability |
| 26 | Al Tayyar Travel Group | 1,258 | 330 | 76 | 120 | 650 | 1983 | Services | Limited Liability |
| 27 | Zamil Industruial Investment Co. | 1,248 | 1,125 | 46 | 300 | 4,300 | 1998 | Industrial | Joint Stock |
| 28 | National Saudi Shipping Co. | 1,208 | 4,711 | 16 | 2,000 | 350 | 1979 | Services | Joint Stock |
| 29 | National Gas & Ind. Co. (GASCO) | 1,190 | 1,272 | 42 | 750 | 1,793 | 1976 | Industrial | Joint Stock |
| 30 | Jamjoom Corp. for Commerce & Ind. | 1,163 | 636 | 56 | 64 | 986 | 1971 | Diversified | Holding |
| 31 | Saudi Arabian Amiantit Co. | 1,123 | 1,801 | 28 | 550 | 1,440 | 1968 | Industrial | Joint Stock |
| 32 | Arab Supply & Trading Corp. (ASTRA) | 1,037 | 1,485 | 35 | 250 | 4,950 | 1976 | Diversified | Sole Proprietorship |
| 33 | The Saudi Investment Bank | 1,027 | 15,252 | 13 | 1,100 | 392 | 1977 | Banking | Joint Stock |
| 34 | Alhamrani Group of Companies | 1,025 | 1,108 | 47 | 90 | 2,820 | 1953 | Diversified | Partnership |
| 35 | National Co. for Cooperative Insurance (NCCI) | 1,023 | 1,535 | 33 | 500 | 421 | 1986 | Services | Joint Stock |
| 36 | Isam Kabbani Group of Cos | 993 | 707 | 54 | 12 | 2,800 | 1971 | Diversified | Limited Partnership |
| 37 | Al Esayi Trading Corp. | 992 | 156 | 86 | 100 | 924 | 1962 | Trading | Partnership |
| 38 | Haji Hussein Alireza & Co. Ltd. | 960 | N/A | | 150 | 1,250 | 1906 | Trading | Limited Liability |
| 39 | Saudi Cable Company | 938 | 1,346 | 39 | 500 | 1,050 | 1975 | Industrial | Joint Stock |
| 40 | Saudi Arabian Fertilizers Co. (SAFCO) | 930 | 4,455 | 17 | 2,000 | 947 | 1965 | Industrial | Joint Stock |
| 41 | Al Othaim Commercial Group | 875 | 505 | 59 | 10 | 2,719 | 1980 | Trading | Limited Liability |
| 42 | Gulf United Investment | 810 | 500 | 60 | N/A | 3,000 | 1971 | Industrial | Holding Company |
| 43 | Southern Province Cement Co. | 790 | 1,929 | 27 | 1,050 | 1,508 | 1978 | Industrial | Joint Stock |
| 44 | Saleh & Abdulaziz Abahsain Co. Ltd. | 782 | 713 | 53 | 50 | 2,000 | 1964 | Diversified | Limited Liability |
| 45 | Saudi Dairy Foodstuff (SADAFCO) | 753 | 823 | 51 | 325 | 2,197 | 1976 | Industrial | Joint Stock |
| 46 | Fursan Travel & Tourism | 744 | 12 | 93 | 0,300 | 450 | 1980 | Services | Sole Proprietorship |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 47 | Arabic Computer Systems Ltd. | 694 | 111 | 88 | 1 | 460 | 1984 | Diversified | Limited Liability |
| 48 | M. & A. Al Subaie for Exchange & Trading | 620 | 2,027 | 25 | 10 | 143 | 1934 | Diversified | Limited Liability |
| 49 | Yanbu Cement Co. | 616 | 2,026 | 26 | 1,050 | 950 | 1977 | Industrial | Joint Stock |
| 50 | Samama Group of Companies | 610 | 366 | 74 | 28 | 13,762 | 1980 | Services | Limited Liability |
| 51 | Saudi Catering & Contracting | 602 | 1,173 | 45 | 3 | 4,000 | 1966 | Services | Sole Proprietorship |
| 52 | Al Taher Group | 565 | N/A | | N/A | 1,399 | 1980 | Diversified | Limited Liability |
| 53 | Alsalam Aircraft Co. Ltd | 558 | 632 | 57 | 163 | 2,170 | 1988 | Diversified | Limited Liability |
| 54 | Saudi Public Transport Co. (SAPTCO) | 557 | 1,676 | 29 | 1,000 | 4,403 | 1979 | Services | Joint Stock |
| 55 | Abudul Ghani ElAjou & Sons Holding Trad Co. Ltd | 550 | 450 | 67 | 14 | 940 | 1975 | Diversified | Limited Liability |
| 56 | Yamama Saudi Cement Co. Ltd. | 547 | 2,993 | 23 | 450 | 1,073 | 1961 | Industrial | Joint Stock |
| 57 | Arabian Agricultural Services Co. (ARASCO) | 545 | 460 | 65 | 150 | 1,314 | 1985 | Diversified | Limited Liability |
| 58 | Abdulrahman Algosaibi G.T.B. | 541 | 734 | 52 | 0,750 | 999 | 1944 | Trading | Proprietorship |
| 59 | Arabian Cement Co. Ltd. | 529 | 1,345 | 40 | 600 | 790 | 1955 | Industrial | Joint Stock |
| 60 | AL Aujan Industries Co. | 524 | N/A | | 58 | 1,020 | 1905 | Diversified | Limited Liability |
| 61 | Al Alamiah Electronic Co. | 510 | 430 | 69 | 12 | 557 | 1972 | Diversified | Limited Liability |
| 62 | Mohammed Al Mojil Group | 500 | 1,290 | 41 | N/A | 4,500 | 1953 | Diversified | Sole Proprietorship |
| 63 | National Agricultural Development Co. (NADEC) | 477 | 1,076 | 48 | 400 | 3,200 | 1981 | Agribusiness | Joint Stock |
| 64 | Al Babtain Group | 471 | 680 | 55 | 239 | 2,570 | 1957 | Diversified | Limited Liability |
| 65 | Advanced Electronics Company | 464 | 412 | 71 | 111 | 391 | 1988 | Industrial | Limited Liability |
| 66 | The National Titanium Dioxide Co. (CRISTAL) | 463 | 1,065 | 49 | 175 | 600 | 1991 | Industrial | Limited Liability |
| 67 | Aluminium Products Co. Ltd. (ALUPCO) | 455 | 485 | 63 | 150 | 725 | 1975 | Industrial | Limited Liability |

***Table 3.*** (*Continued*)

| Rank 2002 | Company | Turnover/ Sales | Assets | Rank Assets | Capital | Employees | Year | Activities | Legal Status |
|---|---|---|---|---|---|---|---|---|---|
| 68 | Al Moshaikeh Group | 455 | N/A | | N/A | 1,800 | 1980 | Diversified | Sole Proprietorship |
| 69 | Jeddah Cable Company | 453 | 232 | 83 | 434 | 550 | 1988 | Industrial | Limited Liability |
| 70 | Al Tuwairqi Group of Companies | 443 | 499 | 62 | 156 | 773 | 1977 | Diversified | Sole Proprietorship |
| 71 | Mohammed Assad Aldrees & Sons Co. | 420 | 437 | 68 | 50 | 1,678 | 1962 | Diversified | Limited Partnership |
| 72 | Saudi Arabian Lubricating Oil Co. (Petrolube) | 413 | 382 | 72 | 110 | 417 | 1968 | Industrial | Joint Stock |
| 73 | ABB Electrical Industries Co. Ltd. | 407 | 318 | 78 | 59 | 434 | 1986 | Industrial | Limited Liability |
| 74 | Consolidated Contractors Co. Ltd. | 401 | 422 | 70 | 1 | 5,170 | 1952 | Contracting | Limited Liability |
| 75 | Trading & Industrial Holding Group | 400 | 500 | 61 | 10 | 1,500 | 1972 | Diversified | Holding |
| 76 | Saudi Pharmaceutical Industries & Medical Appliances | 394 | 1,595 | 31 | 600 | 314 | 1986 | Industrial | Joint Stock |
| 77 | Zahran Maintenance Co. | 376 | 293 | 79 | 1 | 14,500 | 1988 | Diversified | Limited Liability |
| 78 | Abdullah A.M. Al Khodari Sons Co. | 363 | 330 | 77 | 10 | 4,686 | 1955 | Diversified | Limited Partnership |
| 79 | Al Abdulkarim Trading | 360 | N/A | | N/A | 460 | 1974 | Diversified | Sole Proprietorship |
| 80 | Alhamrani Fuchs Petroleum SA Ltd. | 340 | 200 | 85 | 29 | 380 | 1978 | Industrial | Limited Liability |
| 81 | Arabian Drilling Company | 323 | 377 | 73 | 20 | 790 | 1979 | Services | Limited Liability |
| 82 | Mekkah Construction & Development Co. (MCDC) | 319 | 2,612 | 24 | 1,448 | 1,604 | 1989 | contracting | Joint Stock |
| 83 | Al Mawashi Al Mukairish United Co. | 306 | 1,206 | 43 | 1,200 | 87 | 1981 | Diversified | Joint Stock |
| 84 | Saudi Insurance Co. (METHAG) | 299 | 75 | 90 | 100 | 210 | 2000 | Services | Limited Liability |
| 85 | Arabian Gulf Factories Co. Ltd. | 275 | 356 | 75 | 70 | 1,200 | 1974 | Industrial | Limited Liability |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 86 | Saudi Guardian Int'l. Float Glass Co. Ltd. | 273 | 465 | 64 | 122 | 314 | 1995 | Industrial | Limited Liability |
| 87 | Arabian Geophysical & Surveying Co. (ARGAS) | 271 | 284 | 81 | 36 | 1,650 | 1966 | Industrial | Limited Liability |
| 88 | Aswad Group | 240 | 136 | 87 | 55 | 900 | 1977 | Diversified | Limited Liability |
| 89 | Almajal Service Master | 230 | 55 | 92 | 15 | 6,700 | 1980 | Services | Limited Liability |
| 90 | Samir Photographic Supplies | 229 | 100 | 89 | 33 | 475 | 1953 | Diversified | Limited Liability |
| 91 | National Industrialization Co. | 224 | 1,513 | 34 | 600 | 25 | 1985 | Industrial | Joint Stock |
| 92 | Saudi Ceramic Co. | 220 | 570 | 58 | 250 | 1,200 | 1978 | Industrial | Joint Stock |
| 93 | Al Jazira Bank | 197 | 5,110 | 15 | 600 | 370 | 1975 | Banking | Joint Stock |
| 94 | Tihama for Ad. Public Relations & Marketing | 191 | 286 | 80 | 150 | 120 | 1975 | Services | Joint Stock |
| 95 | Saudi Hotels & Resort Areas Co. | 164 | 1,379 | 38 | 500 | 1,235 | 1976 | Services | Joint Stock |
| 96 | Saudi Fisheries Company | 162 | 252 | 82 | 100 | 1,518 | 1980 | Agribusiness | Joint Stock |
| 97 | Hail Agricultural Dev. Co. | 153 | 453 | 66 | 300 | 1,385 | 1983 | Agribusiness | Joint Stock |
| 98 | Arabian Pipes Co. | 120 | 232 | 84 | 140 | 165 | 1991 | Industrial | Joint Stock |
| 99 | Modern Arab Construction Co. Ltd | 104 | 71 | 91 | 15 | 1,690 | 1967 | Contracting | Proprietorship & Limited Liability |
| 100 | Taiba Inv. & Real-estate Dev. Co. | 90 | 1,200 | 44 | 3 | 38 | 1988 | Diversified | Joint Stock |

*Source:* *Arab News* (2003) and Tadawul (the Saudi stock market).

The firms owned by a single person or a family, are most frequently registered as limited liability companies or holding companies.

### *2.2. Specific Characteristics of the Ownership Structure of Saudi Companies*

The most distinctive feature of the Saudi economy is probably the extensive prevalence of family ownership within business structures. Of the 10 biggest companies in the country (measured in terms of their turnover/sales), five are family owned. Including the second biggest company, Kingdom Holding Company, which is owned by one person, namely, Prince Al-Waleed Bin Talal and the fourth and ninth biggest companies namely the Dallah Al-Baraka Group and the Olayan Financing Company, which are owned by the Saleh Kamel and Olayan families respectively. Similarly, of the top 50 Saudi companies, 21 companies belong to one person or one family. Table 3 displays characteristics of the top 100 Saudi companies, with respect to their turnover/sales rank, actual amount of turnover/sales, assets, capital, number of employees, activities, year of establishment, legal status, and ownership (wherever available), as of 2002 (*Arab News*, 2003).

Another distinct feature of the Saudi business composition is the spread of cross-holding and pyramid ownership structures. These structures are difficult to trace, as under the current Companies Act (1965), firms are not required to disclose ownership structure and/or the identity of major owners to the public or investors. Anecdotal evidence, however, illuminates this issue to some extent. According to informal sources, the Olayan Financing Company (which holds and manages all of the Olayan Group's businesses and investments in Saudi Arabia and the Middle East), the ninth biggest company in the country, holds about 20% of the Saudi British bank (which is 13th among the top 100 Saudi companies). The Olayan Financing Company has also recently purchased 16% of the Saudi Hollandi Bank; thereby, becoming the biggest investor in that bank (*Alwatan Newspaper*, 8 March 2003). Similarly, the Kingdom Holding Company, the second biggest company in the country, owned by Prince Al-Waleed bin Talal, is one of the major shareholders of the Saudi American Bank. What is also notable is that only 71 companies in Saudi Arabia are listed to trade on the Saudi stock exchange (as of April 2004).

## 3. OVERVIEW OF THE SAUDI EQUITY MARKET

The stock markets in Arab countries are less sophisticated than in developed countries. The history of the Saudi Arabian joint stock companies traces back

to 1935, when the shares of Arabian Automobile companies (subsequently liquidated), were floated to handle the then rising importance of automobiles (Banafe, 1993). In 1954, Saudi Cement companies went public, followed by the privatization of three electricity companies. Following such economic development, more companies were established.

The Saudi Stock Market (SSM) began to emerge at the end of the 1970s (after the oil boom in 1973), when many companies were listed in the market; this number then increased considerably. Moreover, in the 1970s, the government nationalised (Saudized)[4] foreign banks operating in Saudi Arabia, 60% was Saudi public ownership and 40% was retained by foreign banks. Thus, 60% of shares were offered to Saudi nationals. Banafe (1993) argues that the government's policy of the Saudiization of foreign banks, initiated in the mid-1970s, served as a catalyst for channelling private liquidity into joint companies. In 1975 there were only 14 companies operating in the Saudi market, these consisted mainly of cement and electricity firms.

However, due to the lack of trading regulation at that time, stock trading was fairly limited through to the early 1980s when oil prices were increasing, which in turn resulted in an increase in both volume of trading and market capitalisation. In 1985, the Saudi government placed all stock trading under the supervision and control of the Saudi Arabian Monetary Agency (SAMA) and discontinued the existing broker-based stock trading system. The government then authorised domestic commercial banks to act as brokers in order to protect the market against the adverse effects of speculation and to help it develop and mature. This was also done so that the stock market could develop in a manner that would contribute to national development and was consistent with its policy of greater private sector participation. A ministerial committee, comprising the Minister of Finance, the Minister of Commerce and the Governor of the Saudi Arabian Monetary Agency (SAMA), was formed by the Royal Decree in 1984. Following that, the Securities Supervisory Committee, comprising senior representatives of the two Ministries and SAMA, was established and reported directly to the Ministerial Committee. The Securities Supervisory Committee supervises and issues regulations governing the securities market. The Regulations for Companies were issued in 1965 and have been amended several times. On November 23, 1984, Royal Decree No. 1230/8 was issued to establish the Saudi Share Registration Company (SSRC), which was to be sponsored by local commercial banks under the supervision of SAMA. The SSRC is in charge of managing the records of shareholders and share certificates, as well as providing support facilities for transactions and transferring and registering ownership of transactions automatically. This was the beginning of a new era for establishing a specific regulatory system for electronic share trading.

The second major development in trading on the SSM post-market-regulation was the establishment of an electronic trading system, known as ESIS (Electronic Security Information System). The system aims to centralise the fragmented market, narrow price spreads and improve market liquidity. After the start-up of ESIS in August 1990, the banks established 12 Central Trading Units (CTUs). All CTUs are connected to the central system at the Central Bank (SAMA). In October 2001, the Saudi stock exchange adopted a new mechanism called TADAWUL that replaced the ESIS system. SAMA, through its Securities Control Department, is responsible for the day-to-day operation and regulation of the market. However, the Ministry of Commerce is directly responsible for primary market offerings and regulation and supervision of joint stock companies.

However, the Saudi equity market has some constraints that regulate the sector both in terms of investment and registration. For instance, with the exception of investment funds, where only 5% of each company's shares are available to each citizen, there are no limits on Saudi citizens trading shares of Saudi joint stock companies. Although, prior to 1999, foreigners (except citizens of Gulf Countries Corporations – GCC) were not allowed to invest directly in Saudi firms, except through closed investment banks. In November 1999, Saudi Arabia announced that foreigners, whether residents of Saudi Arabia or not, could invest in the Kingdom's stock market through the purchase and sale of mutual funds that trade in Saudi Arabia. Prior to this, the only option available to foreigners who wanted to invest in Saudi stock was a single closed-end mutual fund, the Saudi Arabia Investment Fund (SAIF), traded in London (Bourland, 1999). This was a big step forward in the development of the largest stock market in the Arab world in terms of market capitalisation and the value traded in the market. Table 4 shows the number of listed companies, market capitalisation, the value traded and the shares traded in the Arab world markets.

Currently 71 companies, with a market capitalisation[5] of SAR701,410 Million (U.S.$ 187,042 Million) are listed and eligible for trading in Saudi Arabia. Trading each day is broken into two, 2 hour sessions, Saturday to Wednesday, and one 2 hour session on Thursday. Table 5 presents the listed Saudi companies with their market capitalisations.

Thus, a number of factors, such as the increasing number of listed companies and their development, the rise in the Saudi GDP, the development of local infrastructure and the expansion of the regulatory framework have helped the relative development of the Saudi stock market. However, more disclosure of financial information, additional transparency, and an extra enforcement of corporate governance regulations, without doubt, can develop the Saudi stock market to be one of the top markets in the Middle East and Asia. The upcoming section will highlight the ownership structure in Saudi companies as

***Table 4.*** Arab Stock Markets (June 2003).

| Market | Market Cap. ($ Millions) | No. of Listed Companies | Value Traded ($Millions) |
|---|---|---|---|
| Abu Dhabi Securities Market | 24,287.1141 | 28 | 68.1321 |
| Amman Stock Exchange | 8,306.3470 | 159 | 217.4894 |
| Bahrain Stock Exchange | 8,059.1737 | 41 | 18.6926 |
| Saudi Stock Market | 127,239.2521 | 69 | 20,328.7420 |
| Kuwait Stock Exchange | 48,362.0286 | 101 | 6,973.4320 |
| Casablanca Stock Exchange | 11,010.4064 | 53 | 51.6425 |
| Algeria Stock Exchange | 132.6903 | 3 | 0.0124 |
| Tunis Stock Exchange | 2,202.8078 | 45 | 18.7780 |
| Dubai Stock Exchange | 11,209.6313 | 13 | 39.1017 |
| Khartoum Stock Exchange | 632.9800 | 47 | 9.1602 |
| Muscat Stock Exchange | 6,232.7273 | 136 | 153.9974 |
| Doha Stock Exchange | 14,672.5484 | 27 | 309.5085 |
| Beirut Stock Exchange | 1,534.4700 | 13 | 25.5992 |
| Egypt Stock Market | 24,728.8889 | 1122 | 849.3169 |
| Total | 288,611.0660 | 1857 | 29,063.6049 |

*Source:* Arab Monetary Fund (2003), AMDB.

an important element of studying the mechanism of corporate governance in Saudi Arabia.

Listed companies in Saudi Arabia formulate seven industries within which firms are operated. Like many other countries around the world, there exists a significant variance between these sectors in terms of market capitalisation. For instance nine agriculture companies compose only less than 1% of the total market capitalisation, while one company (Saudi Telecom Co.) makes up 22% of the market capitalisation and the electricity company is about 12% of the market capitalisation. Likewise, in the banking industry (nine banks) in Saudi Arabia, build up to about 29% of the total market capitalisation. Figure 3 illustrates the market capitalisation by sector in Saudi Arabia as 1st of April 2004.

Companies in Saudi Arabia are organised and controlled by the Companies' Act issued under Royal Degree no M/6 on 20 July 1965. The Companies' Act applies to eight categories of firms, these are: general partnerships, limited partnerships, joint venture, corporations, partnership limited by shares, limited liability partnership, companies with variable capital, and co-operative companies. According to the Act the minimum capital of corporations that offer stocks for public subscription should be no less than SAR10 million ($1 = SAR3.75) and for others be no less than SAR2 million. However, it is estimated that the total number of firms (inclusive of all categories) was 27,120[6] in 1997. The next section examines the ownership structure in the Kingdom of Saudi Arabia.

***Table 5.*** Saudi Listed Companies with their Market Capitalisation (as of 28 August 2003).

| Company | Market Cap. (SAR Millions) | In Percent |
|---|---|---|
| Banking (9 companies) | | |
| 1. Riyad Bank | 30,480 | 4.3 |
| 2. Bank Al Jazira | 3,225 | 0.5 |
| 3. The Saudi Investment Bank (SAIB) | 9,048 | 1.3 |
| 4. Saudi Hollandi Bank (SHB) | 11,397 | 1.6 |
| 5. Banque Saudi Fransi (BSF) | 20,295 | 2.9 |
| 6. The Saudi British Bank (SABB) | 24,725 | 3.5 |
| 7. Arab National Bank (ANB) | 18,240 | 2.6 |
| 8. Saudi American Bank (SAMBA) | 38,400 | 5.5 |
| 9. Al Rajhi Banking & Investment Corp. | 48,375 | 6.9 |
| Industrial (25 companies) | | |
| 10. Saudi Basic Industries Corp. (SABIC) | 137,025 | 9.5 |
| 11. Saudi Arabian Fertilisers Co. (SAFCO) | 12,670 | 1.8 |
| 12. Saudi Arabian Refineries Co. (SARCO) | 262 | 0.0 |
| 13. Saudi Ceramic Co. | 1,349 | 0.2 |
| 14. Savola Group | 6,812 | 1.0 |
| 15. National Industrialisation Co. (NIC) | 4,086 | 0.6 |
| 16. Saudi Pharm. Indus. & Med. Appliances Corp. (SPIMACO) | 2,124 | 0.3 |
| 17. National Gas & Industrialisation Co. (GASCO) | 2,700 | 0.4 |
| 18. National Gypsum Co. | 1,873 | 0.3 |
| 19. Food Products Co. | 297 | 0.0 |
| 20. Saudi Cable Co. | 1,040 | 0.1 |
| 21. Saudi Advanced Industries Co. | 157 | 0.0 |
| 22. Saudi Indus. Development Co. (SIDC) | 616 | 0.1 |
| 23. Al Ahsa Development Co. | 650 | 0.1 |
| 24. The National Co. for Glass Ind. (ZOUJAJ) | 664 | 0.1 |
| 25. Saudi Arabian Amiantit Co. | 3,304 | 0.5 |
| 26. Alujain Corporation | 410 | 0.1 |
| 27. Filling & Packing Materials Mfg. Co. (FIPCO) | 238 | 0.0 |
| 28. Saudi Industrial Services Co. (SISCO) | 381 | 0.1 |
| 29. Arabian Pipe Company (PIPECO) | 351 | 0.1 |
| 30. Arabian Industrial Development Company (NAMA) | 486 | 0.1 |
| 31. National Metal Manufacturing & Casting Co. (MADNIAH) | 240 | 0.0 |
| 32. Saudi Chemical Co. | 1,688 | 0.2 |
| 33. Zamil Industrial Investment Co. | 1,704 | 0.2 |
| 34. Saudi Industrial Investment Group | 5,160 | 0.7 |
| Cement (8 companies) | | |
| 35. Arabian Cement Co. Ltd. | 3,696 | 0.5 |
| 36. Yamamah Saudi Cement Co. Ltd. | 6,048 | 0.9 |
| 37. Saudi Cement Co. | 6,875 | 1.0 |
| 38. The Qassim Cement Co. | 3,902 | 0.6 |

***Table 5.*** (*Continued*)

| Company | Market Cap. (SAR Millions) | In Percent |
|---|---|---|
| 39. Southern Province Cement Co. | 8,463 | 1.2 |
| 40. Yanbu Cement Co. | 7,025 | 1.0 |
| 41. Eastern Province Cement Co. | 4,399 | 0.6 |
| 42. Tabouk Cement Co. | 2,793 | 0.4 |
| Services (18 companies) | | |
| 43. Saudi Hotels & Resort Areas Co. | 1,180 | 0.2 |
| 44. Saudi Real Estate Co. | 3,036 | 0.4 |
| 45. The National Shipping Co. of Saudi Arabia (NSCSA) | 5,054 | 0.7 |
| 46. Saudi Public Transport Co. (SAPTCO) | 2,185 | 0.3 |
| 47. Saudi Automotive Services Co. (SASCO) | 573 | 0.1 |
| 48. Al Mawashi Al Mukairish United Co. | 1,212 | 0.2 |
| 49. Tihama Advt. & Pub. Relations Co. | 264 | 0.0 |
| 50. Assir Trading, Tourism & Manufacturing Co. | 975 | 0.1 |
| 51. Taiba Investment & Real Estate Dev. Co. | 2,434 | 0.3 |
| 52. Makkah Constr. & Development Co. | 5,863 | 0.8 |
| 53. Saudi Land Transport Co. (MUBARRAD) | 479 | 0.1 |
| 54. Al Baha for Development & Investment Co. | 179 | 0.0 |
| 55. Saudi Industrial Export Co. | 152 | 0.0 |
| 56. Arriyadh Development Co. | 2,530 | 0.4 |
| 57. National Agr. Marketing Co. (THIMAR) | 112 | 0.0 |
| 58. Tourism Enterprises Co. (SHAMS) | 150 | 0.0 |
| 59. Ahmed Hasan Fitaihi & Co. | 635 | 0.1 |
| 60. Jarir Marketing Co. | 1,742 | 0.2 |
| Telecom (1 company) | | |
| 61. Saudi Telecom Company (STC) | 148,125 | 21.1 |
| Electricity (1 company) | | |
| 62. Saudi Electricity Company (SEC) | 87,290 | 12.4 |
| Agricultural (9 companies) | | |
| 63. National Agricultural Development Co. (NADEC) | 1,028 | 0.1 |
| 64. Gassim Agricultural Co. (GACO) | 350 | 0.0 |
| 65. Hail Agricultural Development Co. (HADCO) | 579 | 0.1 |
| 66. Tabouk Agricultural Development Co. (TADCO) | 428 | 0.1 |
| 67. Saudi Fisheries Co. | 263 | 0.0 |
| 68. Ash Sharqiyah Agricultural Development Co. (SHADCO) | 120 | 0.0 |
| 69. Al Jouf Agricultural Development Co. (JADCO) | 389 | 0.1 |
| 70. Beshah Agricultural Development Co. | 32 | 0.0 |
| 71. Jazan Agricultural Development Co. (JAZADCO) | 383 | 0.1 |
| Total market capitalisation of the Saudi listed companies | 701,410 | 100 |

*Source:* Bakheet Financial Advisors (2004).

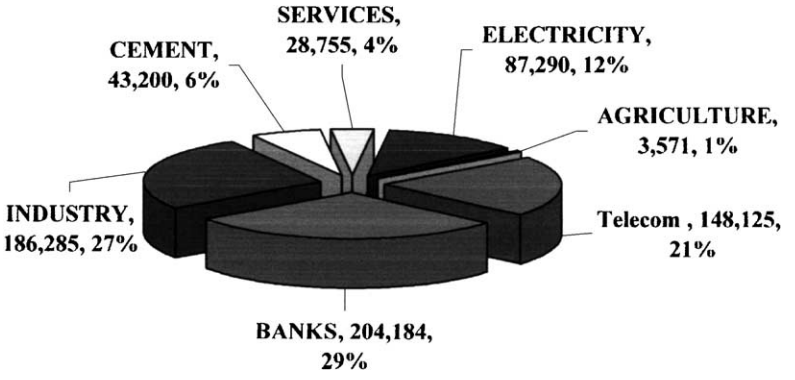


*Fig. 3.* Saudi Market Capitilisation by Sector (1st April 2004).

## 4. OWNERSHIP STRUCTURE IN SAUDI ARABIA

Information about business ownership and structure is often not available in developing countries (La Porta et al., 1999; Nam et al., 2001). For instance, Nam et al. (2001) suggest that it is a difficult task to analyse cross-country corporate ownership structures in Asian countries. This is "due in part to the lack of proper disclosure requirements on ownership, information on ownership structure concentration and distribution [being] scarce and sometimes not reliable. Also, ownership patterns are very complicated, involving indirect holdings through holding companies and cross holding (interlocking holding)" (Nam et al., 2001, p. 113). Thus, Nam et al. (2001) concluded that evaluating the magnitude of the ultimate ownership and control by a single owner requires information on each firm's ownership and organisation, and unfortunately, such information is not available. This conclusion is applicable to most Arab countries where transparency about ownership structure is weak. In most Arab countries investors are not constrained by regulations to disclose ownership structure within firms (except for official use). The underdevelopment of these markets leaves some gaps in terms of market disclosure and transparency in these countries. For example, La Porta et al. (1999) have studied ownership structure in 27 countries around the world and have excluded some Arab states (Saudi Arabia, Kuwait, and UAE) as they do not have sufficient market information. In addition, Claessens et al. (2000) show that companies in Thailand and Singapore are not required to disclose the identity of their major shareholders, i.e. direct ownership information is not reported by regulation.

In Saudi Arabia, apart from foreign ownership in publicly traded companies, information about the largest owners (principle shareholders) is not available to

the public and cannot be found for any firms. Moreover, like in many developing countries, systematic data about the different ownership structures (individual, government, institutions, etc.) is not available to outsiders and researchers alike. Every effort has been made to retrieve systematic data on ownership structures in Saudi Arabia, including by making contact with official departments, libraries, research centres, and financial advisory centres. For instance, the researcher tried contacting one of the major financial advisories in the country in an attempt to obtain information about major shareholders of Saudi firms. Not surprisingly, the reply was that this information was confidential and was difficult if not impossible for outsiders to obtain. However, Table 6 does highlight some information regarding different ownership structures in Saudi Arabia that was available for listed companies. These include some annual reports for these firms, Asasi financial analyses and other unofficial resources. However, it must be kept in mind that this information is not completely accurate, as some of these sources were not up to date.

From Table 6 observations can be made to distinguish between listed companies in the Saudi Market. Government ownership is evident among a number of these firms; about 35% (24 out of 71) of the listed companies in the Saudi market are government owned, which implies that total government ownership among listed companies accounts for about 30% of the total. Moreover, in the case of about 13% of these firms the government is represented as a major shareholder of these companies (government ownership being 30% and above). This proportion of government ownership observed in the Saudi market is comparable with many developing and East Asian countries. For instance, the State ownership of large publicly traded firms in Singapore is 45% (La Porta et al., 1999). Similarly, State ownership in New Zealand, Norway, and Spain is 25, 35, and 30% respectively. On the contrary, government ownership of large publicly traded firms in many developed western countries such as U.S., U.K., Canada, and Ireland is zero (Table 7).

Further, Table 7 shows that family ownership in large publicly traded firms is profound in countries such as Argentina (65%), Hong Kong (70%), and Singapore (30%), whereas it is less obvious in countries like Canada (25%), Norway (25%), Spain (15%), and U.S. (20%). Foreign ownership is apparent in the banking industry where six out of nine of the traded banks have foreign ownership (ranging from 20 to 40%, with the exception of Bank Al Jazira where foreign ownership is only about 5.83%). However, it should be noted in Table 6 that foreign ownership in most firms (with an exception to the SAMBA) is not accompanied with government ownership. This can be explained by the fact that the government is keen to encourage the development of the private sector and limit its ownership in firms that have large capital and do not attract normal investors. Additionally, prior to

***Table 6.*** Ownership Structure of the Saudi Listed Companies.

| Company | Government (%) | Private (%) | Foreign (%) | Companies (%) |
|---|---|---|---|---|
| Banking (9 companies) | | | | |
| 1. Riyad Bank | 29 | 71 | | |
| 2. Bank Al Jazira | | 94.17 | 5.83 | |
| 3. The Saudi Investment Bank (SAIB) | | | | |
| 4. Saudi Hollandi Bank (SHB) | | 60 | 40 | |
| 5. Banque Saudi Fransi (BSF) | | 68.9 | 31.1 | |
| 6. The Saudi British Bank (SABB) | | 60 | 40 | |
| 7. Arab National Bank (ANB) | | 60 | 40 | |
| 8. Saudi American Bank (SAMBA) | 73.61 Gov & private | | 20 | |
| 9. Al Rajhi Banking & Investment Corp | | 98.92 | 1.08 | |
| Industrial (24 companies) | | | | |
| 10. Saudi Basic Industries Corp. (SABIC) | 70 | 30 | | |
| 11. Saudi Arabian Fertilisers Co. (SAFCO) | 57 | 43 | | |
| 12. Saudi Arabian Refineries Co. (SARCO) | | 100 | | |
| 13. Saudi Ceramic Co. | 21 | 79 | | |
| 14. Savola Group | 7.44 | 92.56 | | |
| 15. National Industrialisation Co. (NIC) | | 100 | | |
| 16. Saudi Pharm. Indus. & Med. Appliances Corp. (SPIMACO) | | 80 | 20 | |
| 17. National Gas & Industrialisation Co. (GASCO) | 15.5 | 84.5 | | |
| 18. National Gypsum Co. | | 100 | | |
| 19. Food Products Co. | | 100 | | |
| 20. Saudi Cable Co. | | 100 | | |
| 21. Saudi Advanced Industries Co. | | 5 | | 95 |
| 22. Saudi Indus. Development Co. (SIDC) | | 52.9 | | 47.1 |
| 23. Al Ahsa Development Co. | NA | NA | NA | NA |

| | | | | |
|---|---|---|---|---|
| 24. The National Co. for Glass Ind. (ZOUJAJ) | | 100 | | |
| 25. Saudi Arabian Amiantit Co. | NA | NA | NA | NA |
| 26. Alujain Corporation | | 100 | | |
| 27. Filling & Packing Materials Mfg. Co. (FIPCO) | | 100 | | |
| 28. Saudi Industrial Services Co. (SISCO) | | 100 | | |
| 29. Arabian Pipe Company (PIPECO) | | 100 | | |
| 30. Arabian Industrial Development Company (NAMA) | | 100 | | |
| 31. National Metal Manufacturing & Casting Co. (MADNIAH) | | 100 | | |
| 32. Saudi Chemical Co. | | 5 | | 95 |
| 33. Zamil Industrial Investment Co. | | 100 | | |
| Cement (8 companies) | | | | |
| 34. Arabian Cement Co. Ltd. | | 100 | | |
| 35. Yamamah Saudi Cement Co. Ltd. | 0.94 | 84.53 | 14.53 | |
| 36. Saudi Cement Co. | | 100 | | |
| 37. The Qassim Cement Co. | 37 | 63 | | |
| 38. Southern Province Cement Co. | 40 | 60 | | |
| 39. Yanbu Cement Co. | 21.1 | 78.9 | | |
| 40. Eastern Province Cement Co. | 30 | 70 | | |
| 41. Tabouk Cement Co. | | 100 | | |
| Services (17 companies) | | | | |
| 42. Saudi Hotels & Resort Areas Co. | 40 | 52 | | 8 |
| 43. Saudi Real Estate Co. | 72.9 | 27.1 | | |
| 44. The National Shipping Co. of Saudi Arabia (NSCSA) | 28.8 | 71.2 | | |
| 45. Saudi Public Transport Co. (SAPTCO) | 30 | 70 | | |
| 46. Saudi Automotive Services Co. (SASCO) | | 65 | | 35 |
| 47. Al Mawashi Al Mukairish United Co. | | 100 | | |
| 48. Tihama Advt. & Pub. Relations Co. | | 92.63 | | 7.37 |

**Table 6.** (*Continued*)

| Company | Government (%) | Private (%) | Foreign (%) | Companies (%) |
|---|---|---|---|---|
| 49. Assir Trading, Tourism & Manufacturing Co. | | 100 | | |
| 50. Taiba Investment & Real Estate Dev. Co. | 11 | 81 | | 8 |
| 51. Makkah Constr. & Development Co. | 6.89 | 88.36 | | 4.75 |
| 52. Saudi Land Transport Co. (MUBARRAD) | | 100 | | |
| 53. Al Baha for Development & Investment Co. | | 100 | | |
| 54. Saudi Industrial Export Co. | | 43.61 | | 56.39 |
| 55. Arriyadh Development Co. | | 100 | | |
| 56. National Agr. Marketing Co. (THIMAR) | | 85 | | 15 |
| 57. Tourism Enterprises Co. (SHAMS) | | 100 | | |
| 58. Ahmed Hasan Fitaihi & Co. | | 78.5 Fitaihi family and 21.5 Co. | | |
| Telecom (1 company) | | | | |
| 59. Saudi Telecom Company (STC) | 70 | 30 | | |
| Electricity (1 company) | | | | |
| 60. Saudi Electricity Company (SEC) | NA | NA | NA | NA |
| Agricultural (9 companies) | | | | |
| 61. National Agricultural Development Co. (NADEC) | 20 | 80 | | |
| 62. Gassim Agricultural Co. (GACO) | | 100 | | |
| 63. Hail Agricultural Development Co. (HADCO) | | 100 | | |
| 64. Tabouk Agricultural Development Co. (TADCO) | 8.18 | 91.8 | | |
| 65. Saudi Fisheries Co. | 40 | 60 | | |
| 66. Ash Sharqiyah Agricultural Development Co. (SHADCO) | | 100 | | |
| 67. Al Jouf Agricultural Development Co. (JADCO) | 1.5 | 98.5 | | |
| 68. Beshah Agricultural Development Co. | 0.44 | 99.56 | | |
| 69. Jazan Agricultural Development Co. (JAZADCO) | | 100 | | |

*Source:* Asasi (2003).

***Table 7.*** Control of Large Publicly Traded Firms in Selective Countries.

| Country | Widely Held | Family | State | Widely Held Financial | Widely Held Corporation | Miscellaneous |
|---|---|---|---|---|---|---|
| Argentina | 0.00 | 0.65 | 0.15 | 0.05 | 0.15 | 0.00 |
| Australia | 0.65 | 0.05 | 0.05 | 0.00 | 0.25 | 0.00 |
| Canada | 0.60 | 0.25 | 0.00 | 0.00 | 0.15 | 0.00 |
| Hong Kong | 0.10 | 0.70 | 0.05 | 0.05 | 0.00 | 0.10 |
| Ireland | 0.65 | 0.10 | 0.00 | 0.00 | 0.10 | 0.15 |
| Japan | 0.90 | 0.05 | 0.05 | 0.00 | 0.00 | 0.00 |
| New Zealand | 0.30 | 0.25 | 0.25 | 0.00 | 0.20 | 0.00 |
| Norway | 0.25 | 0.25 | 0.35 | 0.05 | 0.00 | 0.10 |
| Singapore | 0.15 | 0.30 | 0.45 | 0.05 | 0.05 | 0.00 |
| Spain | 0.35 | 0.15 | 0.30 | 0.10 | 0.10 | 0.00 |
| U.K. | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| USA | 0.80 | 0.20 | 0.00 | 0.00 | 0.00 | 0.00 |

*Source:* Extracted from La Porta et al. (1999).

1990s due to under-development of the Saudi market and the corresponding need to facilitate growth, the government increased it shares in many firms. Thus, the participation of the government in these firms strengthened the position of these companies in the market. Although, the government and foreign ownership in many listed firms raised questions about corporate governance issues regarding the role of different institutions and the way in which they were managed. Moreover, other non-listed local companies (family, private owned) also represent a fair proportion of total ownership in banks. However, most of ownership is classified as private, including classification entailed in most institutions and among major shareholders and smaller shareholders. Thus, due to the lack of information disclosure a clear distinction between proportions of ownership within structures cannot be made.

Family ownership is a global phenomenon among privately owned firms, but it is also dominant among publicly traded firms. In many countries around the globe including, Western Europe, South and East Asia, the Middle East, Latin America, and Africa, the vast majority of publicly traded firms are family controlled (Burkart et al., 2003; Claessens et al., 2000; La Porta et al., 1998; La Porta et al., 1999). Family firm succession is an important enterprise sustainability issue. The succession within family-owned firms in most countries, is a debatable issue among practitioners and academics. Many family firm-owners are concerned about how management control can be transferred to the next generation (Westhead, 2003). However, Cliffe (1998) shows that the two-thirds of family-owned firms in the USA fail to plan for generational succession. Such findings are consistent with empirical

evidence provided by Ward (1987) in which he documents that about 30% of family businesses are transferred to second generation family ownership, and only 13% of family-owned firms survive to the third generation of family ownership. Supporting this viewpoint, Smyrnios and Romano (1994) show that in Australia 11% of family firms survive to the third generation, and only 6% to the fourth generation.

In Saudi Arabia, the fact that most family owned firms are new, must be taken into account. The separation of management and ownership in most family firms is unusual. Management professionalism is under-developed in the context of family run firms. Management of these firms is still in the hands of company founders, and in some instances, in the hands of the next generation. Thus, the problem of leadership succession is not profound for many people at present, as the founder or his oldest son is most likely the one in control. However, potential problems do concern many prospective investors, practitioners, and managers of firms within the country. According to a study by the centre of management qualified preparation, about 70% of the volume of existing firms within the Saudi economy are family-owned firms (*Alriyadh Newspaper*, 28/3/2004). Succession within the family, the appointment of non-family members to the board of directors and decisions to become a publicly traded company are major issues that concern many managers, investors, and practitioners in Saudi Arabia. However, some level of awareness regarding problems of succession and other related problems have recently increased in these firms, although, not enough. As a consequence many have resorted to changing their legal status to joint stock companies in the first instance to become a publicly traded-quoted firm. For instance, Ahmed Fetiahi and Co (closed listed at the Saudi stock exchange) has recently modified its legal status to closed joint stock company as a first step in becoming a traded joint stock firm. Likewise, in April 2000, Jarir (established as a family firm in 1974) sold approximately 40% of their shares in a private placement to a selected number of investors including institutions and high net worth individuals. At the same time, the company applied for conversion to (closed) joint stock company status. Jarir was converted to (closed) joint stock company in October, 2000. On 11 March 2003, the Ministry of Commerce gave Jarir permission to list its shares on the Saudi Stock Market. Such steps formulate a cornerstone in the development of corporate governance issues for firms in Saudi Arabia, so as to become one of the leading economies in the region. There is also great emphasis on the part of regulators, academics, and practitioners to help firms overcome problems of survival. For instance, Astrachan and Tutterbow (1996) underscore all the costs associated with methods of intergenerational succession within families during the lifetime of owners/CEOs (i.e. consultants and lawyers, accountants, and alike). Meanwhile, the risk of raising the transaction cost is also an issue that many family firms are trying to avoid. In some cases, owners of family firms fail to separate “family concerns”

from "business issues" (Birley et al., 1999). This has profound impact on the Saudi economy, as cultural and local dimensions influence the management of many firms in which business issues are mixed with family concerns. Thus, in addition to augmenting awareness regarding these issues, a concerted effort is required on the part of regulators, academics, and practitioners alike, to create changes which will ultimately serve to strengthen the local economy.

## 5. CONCLUSION

It is apparent that the Saudi stock market is one of the most rapidly developing markets in the Middle East and Asia. As an emerging market which is growing rapidly both in terms of companies and volume, the Saudi market encompasses tremendous potential to become a leader. Yet to realize its position in the world stock market, it needs to overcome some challenges that presently rid the system.

In 1975, there were only 14 firms operating in the Saudi market. The 1980s witnessed developments in the market after the increase in the oil prices (in 1973), followed by the establishment of the Saudi registration company (SSRC) to manage the recodes of shareholders and share certificates. Such development has continued through the 1990s to the present. Recently, based on World Federation of Exchange 2002 market capitalisation statistics, the Saudi stock market ranked ninth in the global emerging market. In 2003, the Saudi market recoded some positive appearances.

Currently, the Saudi stock market is undergoing a transition, particularly since the government floated 30% of the Saudi Telecom Company (STC) raising the market capitalization to U.S.$ 701,410 billion in April 2004. The Saudi Arabian stock market is the largest in the Arab world. In terms of market capitalization, the Saudi market equals 79% of all 13 Arab stock markets, and is ahead of many Asian and developing bourses such as Singapore, Mexico, Athens, Oslo, Thailand, Istanbul, and Jakarta.

However, as in many Arab and other developing countries, the Saudi market presently lacks sound frameworks for regulation, transparency, and disclosure of financial information which are very essential for the development of any stock exchange. Further the Saudi stock market is not used to raising capital. Currently only 71 firms are listed on the stock market. Moreover, listed firms in the Saudi market are divergent. Many firms are small compared to the top Saudi companies. For instance, the top six Saudi listed firms (Saudi Basic Industries Coro, Saudi Telecom Co., Saudi Electricity Co., Al Rajhi Banking and investment Corp, Saudi American bank, and Riyad Bank) represent about 71% of the total

Saudi market capitalization. The government owns a large portion of companies traded. Family ownership is also evident among many firms. Although, the Saudi market suffers from problems, such as liquidity being concentrated in the hands of a few – influential shareholders, institutions, or the government, it is clear that it demonstrates significant potential to attain world status. In addition, family ownership constitutes 70% of the volume of existing firms within the Saudi economy. Thus, some careful development, regulation enforcement, and progress are necessary to improve the current system in order to attract further foreign investment to the country.

The advantages of the Saudi market are distinctive. The Saudi stock market has demonstrated the ability to lead stock markets in the Middle East and East Asia. The figure of the Arab investment abroad is a potential opportunity for the Saudi market to attract. Estimates of Arab money invested abroad range from as high as $2,400 billion to as low as $500 billion (Nafie, 2002). However, some Western sources estimate that the volume of Arab investments in the West, alone in 2001, stood at $1,300 billion, of which $750 billion came from Saudi Arabia (Nafie, 2002). Share transactions are conducted on the spot and high liquidity is available. A good regulatory framework, corporate governance code for best practice, transparency, and greater accountability, which formulate the core foundation of a sound stock market, are initiatives required to further develop the Saudi market and to help in the settlement of the local investment aboard and to attract Arab and foreign investment participation. Challenges resulting from inadequate transparency, under-developed regulatory frameworks, and weak financial disclosure (which make firm classification information difficult to retrieve) need to be addressed before the Saudi market attains its status in the world market.

## NOTES

1. Foreign Investment, Remittances Outpace Debt As Sources of Finance For Developing Countries, The World Bank, 2 April 2003.

2. Companies within this category may provide a memorandum of association or bylaws stating that capital can be increased by way of new payments, by the (original) partners or by the admission of new partners or be reduced by the partners' recovering their shares from capital. If such provision is made, it must be published in the manner of publication prescribed for the form of company involved.

3. The companies' Act defines a corporative company as a corporation or a limited liability partnership formed in accordance with corporative principals if it aims at (the attainment of) the following objects for the benefit and through the joint efforts of the members: (1) reduction of the cost, purchase, or sale price of certain products or services, by engaging in producers' or brokers' business; and (2) improvement of the quality of

products or standards of services provided by the company to its members, or by the latter to consumers (Companies Act 1965, Ministry of Commerce).

4. Sudiization a term used in which replacement of foreign (money or manpower) by Saudis.
5. As of 1st of April, 2004.
6. Ministry of Commerce and industry.

## ACKNOWLEDGMENTS

The author would like to express his appreciation to Dr. Olga Suhomlinova and Dr. M. Shahid Ebrahim for their constructive and valuable comments on the first draft of this paper.

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# DIVIDEND PAYMENT AND OWNERSHIP STRUCTURE IN CHINA

Jim Gang Wei, Weiguo Zhang and Jason ZeZhong Xiao

## ABSTRACT

*Using 3,994 observations of Chinese listed firms from 1995 to 2001, we find a significantly positive correlation between state ownership and cash dividend payment, and a significantly positive relation between private ownership and stock dividend payment. In particular, we find that the relation between dividend payment level and ownership structure is nonlinear. The higher the proportion of state ownership, the higher the cash dividend rate. The higher the proportion of private ownership, the higher the stock dividend rate. We conclude that the managers of Chinese listed companies are likely to cater for the preference of different shareholders.*

## 1. INTRODUCTION

The purpose of this paper is to examine the effect of ownership structure on dividend payment policy in Chinese listed companies. This topic is attractive because of state ownership dominance in China and because China adopts a different corporate governance system compared with those operating elsewhere. On November 6, 2000, Fu-Chun Fan, Vice Chairman of the China Securities Regulatory Commission (CSRC), declared that the authorities were considering whether or not to pay cash dividends as a necessary condition for listed companies to refinance capital from the market. Although his announcement has not

**Corporate Governance**
**Advances in Financial Economics, Volume 9, 187–219**

**ISSN: 1569-3732/doi:10.1016/S1569-3732(04)09008-5**

become a regulation of the CSRC, it clearly indicates that dividend payment policy of Chinese listed companies has attracted the attention of the public and regulatory authorities.

To date, the dividend literature has proposed a host of explanations of the so-called dividend puzzle (Black, 1976). Of those, signaling theory and agency cost theory are particularly popular. The former argues that firms can convey information about future profitability and cash flow to the market by paying dividends (see for example, Asquith & Mullins, 1983; Healy & Palepu, 1988; Kao & Wu, 1994; Kato et al., 2002; Miller & Rock 1985; Nissim & Ziv, 2001). However, the evidence on the relation between dividends and earnings is mixed, since a change in dividend payout does not necessarily mean a change in the company's future earnings (e.g. Allen & Michaely, 1995; Benartzi et al., 1997; DeAngelo et al., 1996, 2000, 2002; Gunasekarage & Power, 2002; Watts, 1973).

Agency cost theory focuses on different incentives of inside managers and outside shareholders (Jensen, 1986; La Porta et al., 2000). According to the theory, in order to reduce the amount of free cash flow, which may be wasted by insiders or committed to unprofitable projects, firms should pay dividends to shareholders. As a result, the shareholders prefer dividends to retained earnings. It also predicts that dividend change announcements should be positively (negatively) associated with stock returns because a higher (lower) dividend level reduces (increases) managers' tendency to divert free cash flows.

In China, the dividend puzzle is even more complicated because of its unique ownership patterns in listed firms. According to Xu and Wang (1999), the ownership of most Chinese listed companies is heavily concentrated in the hands of the government. Under such circumstances, it may be problematic to apply signaling theory to explain the dividend payout policy of Chinese listed firms for two reasons. First, the level of interaction between managers and large shareholders is much more intense in China than in the U.S., because share ownership in China is rather more concentrated than in the U.S. The large shareholders in China can almost freely obtain constant inside information about the firm from insider managers who are usually their representatives. Second, according to the regulations of China, shares owned by the state are not publicly tradable.[1] Thus, the majority shareholders are forced to have long investment horizons. Therefore, they are less interested in short-term dividend signals to boost current prices.

On the other hand, application of the agency cost model to Chinese listed firms is also problematic. The basic assumption underlying the model that dividend payout can act as a necessary tool to supervise insider managers seems less relevant in China since the discipline of financial markets hardly exits. Furthermore, the problem of free rider is more serious in China than in the U.S. because

the vast majority of Chinese individual investors are small shareholders and their interests are not well protected (Wei, 2002). They are in a disadvantageous position due to the lack of proxy voting procedures. For those individuals in the top 10 shareholders, their holdings are extremely small, normally less than 0.5% (Xu & Wang, 1999). Considering the large shares held by the state, this small proportion held by a single individual is negligible for the company. Furthermore, almost no individual shareholders are on the board of directors, or on the supervisory board. Because small investors have neither the incentive nor the capability to monitor insider managers, the latter do not need to pay dividends in order to reduce agency costs of their firms.

Based on a sample of 3,994 observations of Chinese listed firms from 1995 to 2001, we find that firms with more state ownership pay more cash dividends and that firms with more individual ownership pay more stock dividends. In particular, the relationship between dividend payment and ownership structure is non-linear. The higher the proportion of state ownership, the higher the cash dividends rate. The higher the proportion of private ownership, the higher the stock dividends rate. In addition, we find that larger firms are less likely to pay stock dividends and that firm's debt level appears to significantly restrict the level of cash dividend payment. The results also show that firms with better investment opportunities are less likely to pay cash dividends, but they are more likely to pay stock dividends. Finally, we find that more profitable firms are more likely to pay cash dividends.

The remainder of this paper is organized as follows. In Section 2, we review the prior literature. In Section 3, we describe the institutional background of China. In Section 4, we detail our sample, data and variables. Section 5 reports our empirical findings. In Section 6, we perform sensitivity tests. Section 7 concludes the paper.

## 2. PRIOR LITERATURE

A few prior studies have examined the relation between dividend payment and ownership structure. Kang (1999) uses U.S. companies in the textile industry from 1983–1992 as a sample and finds that firms with earlier-generation (generations one to three) family shareholders had higher levels of dividend payout, and that firms with later-generation (generations four through seven) family shareholders had lower levels of dividend payout. However, firms with later-generation family owners that had very large ownership stakes experienced higher levels of dividend payout. These results suggest that early-generation family owners are more effective in corporate governance, that later-generation family owners

may be particularly ineffective in shaping dividend policy, and that powerful later-generation family owners may use their power to receive financial benefits.

DeAngelo and DeAngelo (2000) have done a very interesting clinical study of Times Mirror Company (TM), one of NYSE-listed Fortune 500 firms. They find that TM's dividend policy reflects the cash distribution preference of the controlling family. As a clinical study, however, this paper does not have much generalizability.

Faccio et al. (2001) analyze expropriation from the perspective of dividends, and find that: (1) group-affiliated corporations in Europe pay higher dividends than in Asia; (2) loosely-affiliated groups whose control links all exceed 10% but do not exceed 20% do not pay higher dividends; and (3) a wider discrepancy between ownership and control is associated with lower dividend rates. This evidence indicates that different ownership structure does affect the dividend payment level.

More closely related to our study is Maury and Pajuste (2002) who find that the ownership and control structure significantly affects the dividend policy in Finnish listed firms. The authors report that the dividend payout ratio is negatively related to the control stake of the controlling shareholder. In addition, the presence of another large shareholder also affects the payout ratio negatively.

Few prior studies have examined dividend policy in China. Wei (1998) reports a significantly negative market reaction to cash dividend payout and a significantly positive reaction to stock dividend payout. In a follow-up study, Wei (1999), based on a sample of 1,376 observations of 389 Chinese listed companies during the period of 1993–1997, reports a concurrent link between earnings and dividend changes and a minimum predictive value of changes in dividends. Interestingly, Wei finds that dividend-omissions signal an increase in future earnings and that dividend-increasing firms are less likely to have subsequent earnings increases compared with firms that do not change their dividends. Wei (2002) also attempts to use the agency cost hypothesis to explain the dividend policy of Chinese listed firms based on a sample of 2,985 observations from 1995 through 1999. Applying the agent-principle model of Jensen and Meckling (1976), Wei uses the shareholding proportion of the biggest shareholder to measure agency costs. The author reports that the higher shareholding proportion of the biggest shareholder, the higher cash dividend payment. These findings contradict the agency theory arguments that the more concentrated ownership, the lower the agency cost, and the lower probability that firms would pay cash dividends.

This present study contributes to the literature by examining the correlation between dividend payout and ownership structure using Chinese listed companies as observations. In particular, based on a classification of dividends into cash dividends and stock dividends, we find that different types of dividend are related to different types of shareholder, such as the state shareholder and individual shareholder.

# 3. INSTITUTIONAL BACKGROUND OF CHINA

## *3.1. Dividend Policy*

### *3.1.1. Stock Dividends and Cash Dividends*

During the first few years after the stock markets were reestablished in China, listed companies preferred to pay stock dividends rather than cash dividends. In 1992 and 1993, 96.23 and 94.54% firms paid stock dividends respectively (Table 1). Over 50% firms paid stock dividends from 1994 to 1996. However, the percentage of firms that paid stock dividends decreased from 1996. In 2000, only 11.25% firms paid stock dividends. On average, 44.74% firms paid stock dividends from 1992 to 2001. From 1992 to 2001, on average, 53.5% firms paid cash dividends. This ratio is comparable to that in the U.S. It should be noted that it is not mandatory for listed firms to pay dividends in China.[2]

In theory, stock dividends can be paid out of retained earnings, capital surplus, or both. However, the CSRC stipulated in 1996 that listed firms should explicitly show the source of dividend in their annual reports. In consequence, there is no stock dividend that is paid from a combination of retained earnings and capital surplus in China because dividends paid from the former are called stock dividends while those from the latter called stock transferred from capital surplus.

### *3.1.2. Disappearing Dividends and Dividends Omission*

According to Lintner (1956), firms are reluctant to cut dividends or to reduce the growth rate of dividends. However, after four decades, Fama and French (1999) observe that fewer U.S. corporations are paying dividends; while 90% of firms in the 1950s paid dividends, the proportion dropped to just 20% at the end of the 1990s.[3] Buchanan (2000) finds an interesting trend in G7 countries that a substantial proportion of firms do not make a dividend payment.

The phenomenon of non-dividend payout also exists in China. The percentage of non-payer has increased year by year as shown in Table 1 from 3.77% in 1992, to 59.01% in 1999, and 38.75% in 38.75%.

## *3.2. Ownership Structure and Dividend Policy*

### *3.2.1. Concentrated Ownership and Large Shareholders*

According to Shleifer and Vishny (1997), majority ownership is relatively uncommon in the U.S. and U.K. By contrast, large commercial banks often control major companies in Germany and Japan. Firms are typically controlled by families in most continental European countries (e.g. Italy, Finland and Sweden), as well as

***Table 1.*** Payers and Non-Payers of Different Types of Divdends in China.

| | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | Average 1992–2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Stock dividend payers | 51 | 173 | 149 | 184 | 302 | 228 | 178 | 134 | 159 | 130 | |
| As percent of total listed firms | 96.23 | 94.54 | 51.20 | 56.97 | 56.98 | 30.60 | 20.92 | 14.12 | 14.61 | 11.25 | 44.74 |
| Cash dividend payers | 39 | 147 | 233 | 173 | 175 | 220 | 250 | 335 | 682 | 666 | |
| As percent of total listed firms | 73.58 | 80.33 | 80.07 | 53.56 | 33.02 | 29.53 | 29.38 | 35.30 | 62.68 | 57.61 | 53.51 |
| No-dividend payers | 2 | 10 | 24 | 77 | 139 | 374 | 485 | 560 | 385 | 448 | |
| As percent of total listed firms | 3.77 | 5.46 | 8.25 | 23.84 | 26.23 | 50.20 | 56.99 | 59.01 | 35.39 | 38.75 | 30.79 |
| Total listed firms | 53 | 183 | 291 | 323 | 530 | 745 | 851 | 949 | 1088 | 1156 | |

*Note:* This table reports counts and percentages of payers and non-payers of different types of dividend from 1992 to 2001. In China, some firms pay stock dividends and cash dividend at the same time, some only pay stock dividends, and some only pay cash dividends. Stock dividend payers in this table only include those who pay stock dividends from retained earnings.

*Source:* Genius database.

in those of Latin America, Southeast Asia, and Africa. Faccio et al. (2001) find that the level of government shareholding is well below family shareholding in stock-market-driven economies, bank-driven economies, and the crony capitalistic economies.

China is a socialist country where the interests of the state are paramount. An essential goal to establish stock markets is to fund the restructuring of state-owned enterprises (SOEs). Unavoidably, most listed companies in China are state-owned. According to Yuan (1999), the government has more than 10% direct and indirect voting rights in 43.8% listed firms. With more than 50% voting rights, the government absolutely controls 31.4% listed companies. Panel A in Table 2 shows a highly concentrated ownership structure. The five largest shareholders account for 59.47% total capital, compared with 24.5% in the U.S. and 33.1% in Japan (Prowse, 1998). More strikingly, the largest shareholders hold about 45% in China. Panel B in Table 2 shows that the average state shareholding accounts for 35.13% total capital in 2001. Therefore, state shareholders are more influential than that indicated by their voting rights under the supreme interests of the state. They have enormous discretion over dividend payout policies.

In China, state shareholders always send their representatives to shareholder meetings with all expenses covered by employers. Small shareholders rarely participate in shareholder meetings because they have to cover their own expenses and because of free-rider problems and their opportunistic behavior. According to an estimate of the CSRC (1999), the average number of shareholders attending annual shareholder meetings is approximately 100, whereas the number of shareholders in listed companies ranges from 3,000 to 100,000.

In the U.S., more and more institutional shareholders actively participate in corporate governance (Wahal, 1996). According to one estimate, institutional investors hold up to 46.5% outstanding common stocks of U.S. corporations.[4] However, the size of institutional investors, such as mutual funds, is very small in China compared with their counterparts in the U.S. According to regulations of the CSRC, market capitalization of tradable shares of any listed firm held by a fund cannot exceed 10% of the fund's net assets. This restriction makes it very difficult for a fund to exercise an effective corporate governance function. Other institutional investors, such as pension funds and insurance companies, are not allowed to directly invest in the stock markets at present. As a result, state shareholders can completely control the shareholder meeting. Important policies (such as dividend payout) proposed by the board of directors are always successfully approved at the shareholder meeting. As Stalin said, "it is important not how people vote, but who counts the votes." In China, it is the state shareholders who count the votes. Therefore, dividend payout policies are at their mercy.

***Table 2.*** Shareholding Structures of Chinese Listed Companies.

Panel A: Shareholding Fractions of the Largest 10 Shareholders

| | 1st | 2nd | 3rd | 4th | 5th | 6th | 7th | 8th | 9th | 10th |
|---|---|---|---|---|---|---|---|---|---|---|
| Mean (%) | 44.92 | 8.32 | 3.27 | 1.79 | 1.16 | 0.80 | 0.60 | 0.47 | 0.40 | 0.34 |
| Median (%) | 44.52 | 4.95 | 1.86 | 0.95 | 0.65 | 0.44 | 0.35 | 0.29 | 0.25 | 0.22 |
| Standard deviation (%) | 317.72 | 72.34 | 14.88 | 4.73 | 1.94 | 0.87 | 0.48 | 0.29 | 0.20 | 0.14 |
| Minimum (%) | 0.41 | 0.03 | 0.03 | 0.02 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Maximum (%) | 88.58 | 37.05 | 26.07 | 16.70 | 11.50 | 6.70 | 5.20 | 5.20 | 4.28 | 3.76 |

Panel B: Average Ownership Structures of Listed Companies from 1992 to 2001

| | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|
| Non-tradable share | 69.25 | 72.18 | 66.99 | 64.47 | 64.75 | 65.44 | 65.89 | 65.02 | 64.11 | 64.02 |
| State owned share | 41.38 | 49.06 | 43.32 | 38.74 | 35.42 | 31.52 | 34.25 | 36.16 | 39.09 | 35.13 |
| Domestic legal person owned share | 22.56 | 19.61 | 21.43 | 23.23 | 25.95 | 29.36 | 26.93 | 25.29 | 22.23 | 26.39 |
| Foreign person owned share | 4.07 | 1.05 | 1.10 | 1.40 | 1.23 | 1.34 | 1.42 | 1.31 | 1.22 | 1.17 |
| Inside employee share | 1.23 | 2.40 | 0.98 | 0.36 | 1.20 | 2.04 | 2.05 | 1.19 | 0.64 | 0.16 |
| Other share | 0.00 | 0.05 | 0.16 | 0.74 | 0.95 | 1.18 | 1.25 | 1.08 | 0.93 | 1.17 |
| Tradable share | 30.75 | 27.82 | 33.01 | 35.53 | 35.25 | 34.56 | 34.11 | 34.98 | 35.89 | 35.98 |
| A share | 15.87 | 15.82 | 20.99 | 21.21 | 21.92 | 22.79 | 24.06 | 26.34 | 28.57 | 30.15 |
| B share | 14.88 | 6.37 | 6.06 | 6.66 | 6.45 | 6.04 | 5.30 | 4.60 | 4.02 | 3.78 |
| H share | 0.00 | 5.63 | 5.96 | 7.66 | 6.88 | 5.74 | 4.75 | 4.03 | 3.30 | 2.05 |
| Total | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

*Note:* This table reports descriptive statistics of shareholding fractions of top 10 shareholders of 1156 Chinese listed firms in 2001.

This table reports descriptive statistics about ownership structures of Chinese listed firms. The statistics are based on 53 firms in 1992, 183 firms in 1993, 291 firms in 1994, 323 firms in 1995, 530 firms in 1996, 745 firms in 1997, 851 firms in 1998, 949 firms in 1999, 1088 firms in 2000, and 1156 firms in 2001.

*Source:* Genius database.

*3.2.2. Private Shareholders and Their Preferences*

As noted above, small individual investors have neither the incentive nor the capability to collect information and to monitor the management. What they care about is appreciation or depreciation of shares they own. They count on short run share capital gains rather than cash dividend gains. According to Xu and Wang (1999), the turnover ratios of the Chinese stock exchanges are over 200%, as compared with 67% in the U.S. Because average tradable shares account for 35.98% total capital in 2000 (Panel B in Table 2), the effective turnover ratio may range from 700 to 1000%. In other words, the average holding period in China is about one to two months, whereas it is 18 months in the U.S. (Xu & Wang, 1999). Apparently, Chinese individual investors are seeking short term trading profits rather than cash dividend income or long-term growth. Therefore, it seems that, when the proportion of private shareholding is high, managers may cater for their preference for stock dividend in order to raise more capital.

## 4. SAMPLE, VARIABLES AND DATA DESCRIPTION

### *4.1. Sample*

The sample is drawn from all Chinese firms listed on the Shanghai Securities Exchange (SHSE) and Shenzhen Securities Exchange (SZSE) from 1995 to 2001. The following types of firm are excluded from the sample.

(a) Financial firms are excluded because their operations are distinctly different from other firms.
(b) Firms that issue B shares to foreign investors are excluded because they use accounting standards different from those adopted by other firms that issue shares to domestic investors and because their corporate governance is also different from that of their counterparts.
(c) Firms that experience reorganization during the sample period are excluded because reorganization results in changes in ownership, corporate governance, and performance.

Having excluded these firms, we obtain a final sample of 3,994 firm-year observations across seven years. We divide the sample into three sub-samples according to state ownership. There are 1,721 observations for state ownership below 20%, 1,192 observations for state ownership above 20% and below 50%, 1081 observations for state ownership above 50%. Similarly, we divide the sample

into three sub-samples according to private ownership. There are 566 observations for private ownership below 20%, 2,983 observations for private ownership above 20% and below 50%, 445 observations for private ownership above 50%. We allocated each observation to a particular year if a current dividend was declared in the interim of that year, or in the first quarter of the following fiscal year. However, the number of firms that paid interim dividends is very small in China.

### *4.2. Variables*

The key variables of interest are measures of dividend payout level and ownership structure. Several additional variables are used to control for their effect on dividend payout level not captured by the ownership variables.

The level of dividend payment is measured by three ratios:[5]

(1) DPS, dividends per share;
(2) DPS/Earnings, where earnings are measured after tax and interest but before extraordinary items; and
(3) DPS/Sales, where sales are net sales.

Following Faccio et al. (2001), we adjust each observation's dividend rate for industry effects by subtracting the industry median dividend rate.

All ownership data are extracted from the annual reports of the sample firms. State ownership (STATE) is measured as the percentage of equity shares owned by the central government, local governments, or their wholly owned institutions at the accounting year end. Private ownership (PRIVATE) is measured as the percentage of equity shares owned by private shareholders. It is possible that the dividend policy of firms is a non-linear function of ownership structure. Therefore, we consider effects of different ownership levels. In this paper, we use two cut off levels: 50 and 20%.[6]

Table 3 explains the construction of the control variables used in our regression. The variables included are ownership concentration ratio, firm size, firm debt, firm cash, investment opportunity, history of listing, firm performance, previous dividend payout record, and foreign ownership. The ownership concentration ratio is defined as percentage of shares controlled by top 10 shareholders (T10). In line with Faccio et al. (2001) and Fama and French (2001), we include firm size as a control variable. This variable, SIZE, is defined as the logarithm of book value of total assets at the accounting year end.

The variable DEBT is defined as the ratio of total debts to total assets at the accounting year end. A firm's debts potentially affect dividend payout. In the debt

***Table 3.*** The Variables.

| Variable | Description |
|---|---|
| Cash dividends per share (CDPS) | Cash dividends paid to common shareholders per share in each fiscal year from 1995 to 2001. Source: Genius database. |
| IA-cash dividends per share (CDPS) | Industry-adjusted cash dividends per share for a firm. We calculate IA-cash dividends per share as the difference between the firm's cash dividends per share and the median cash dividends per share for the firm's industry. We use a firm's primary industry code of China Securities Regulatory Committee (CSRC) to define the following six broad industries: (1) agriculture; (2) manufacturing; (3) retail and hotel; (4) real estate; (5) public utility; and (6) conglomerate. Source: Genius database, Cninfo database, and www.csrc.gov.cn. |
| Cash-dividend-to-earnings (CD/Earnings) | Cash dividend as a percentage of earnings in each fiscal year from 1995 to 2001. Earnings are measured before extraordinary items, subsidies from local government and income tax. Source: Genius database and Cninfo database. |
| IA-cash-dividend-to-earnings (CD/Earnings) | Industry-adjusted cash-dividend-to-earnings for a firm. Its calculation and data sources are the same as those for CDPS above. |
| Cash-dividend-to-sales (CD/Sale) | Cash dividend as a percentage of net sales in each fiscal year from 1995 to 2001. Source: Genius database and Cninfo database. |
| IA-cash-dividend-to-sales (CD/Sale) | Industry-adjusted cash-dividend-to-sales for a firm. Its calculation and data sources are the same as those for CDPS above. |
| Stock dividends per share (SDPS) | Stock dividends paid to common shareholders per share in each fiscal year from 1995 to 2001, where stock dividends are allocated from distributable earnings and/or capital surplus of a firm. Source: Genius database. |
| IA-stock dividends per share (SDPS) | Industry-adjusted stock dividends per share for a firm. Its calculation and data sources are the same as those for CDPS above. |
| Stock-dividend-to-earnings (SD/Earnings) | Stock dividend as a percentage of earnings in each fiscal year from 1995 to 2001. Earnings are measured before extraordinary items, subsidies from local government and income tax. Source: Genius database and Cninfo database. |
| IA-stock-dividend-to-earnings (SD/Earnings) | Industry-adjusted stock-dividend-to-earnings for a firm. Its calculation and data sources are the same as those for CDPS above. |
| Stock-dividend-to-sales (SD/Sale) | Stock dividend as a percentage of sales in each fiscal year from 1995 to 2001, where sales are net sales. Source: Genius database and Cninfo database. |

***Table 3.*** (*Continued*)

| Variable | Description |
|---|---|
| IA-stock-dividend-to-sales (SD/Sale) | Industry-adjusted stock-dividend-to-sales for a firm. Its calculation and data sources are the same as those for CDPS above. |
| State ownership (STATE) | State ownership is measured as the percentage of equity shares owned by the central government, local government or their wholly owned economic institutions at the accounting year end from 1995 to 2001. Source: Genius database. |
| Private ownership (PRIVATE) | Private ownership measured as the percentage of equity shares owned by private shareholders at the accounting year end from 1995 to 2001. Source: Genius database. |
| Ownership concentration (T10) | Ownership concentration is measured as the percentage of equity shares owned by the top 10 shareholders of a firm at the accounting year end from 1995 to 2001. Source: Genius database and Cninfo database. |
| Firm size (SIZE) | Firm size is defined as the logarithm of book value of total assets at the accounting year end from 1995 to 2001. Source: Genius database. |
| Capital structure (DEBT) | Capital structure is defined as Debt/Asset ratio, of total debt to total assets at the accounting year end from 1995 to 2001. Source: Genius database. |
| Cash balance (LCASH) | Cash balance is defined as the logarithm of total cash balance at the accounting year end from 1995 to 2001. Source: Genius database. |
| Investment opportunities (INVEST) | Investment opportunities are defined as a firm's rate of growth of total assets. Source: Genius database. |
| Listing time (LTIME) | Listing time is defined as number of years from 1994. Source: Genius database. |
| Return on assets (ROA) | Return on assets is the ratio of earnings to total assets, where earnings are measured profit before extraordinary items, subsidies from local government and income tax. Source: Genius database and Cninfo database. |
| Foreign ownership (FOREIGN) | Foreign ownership is measured as the percentage of equity shares owned by foreign entities at the accounting year end from 1995 to 2001. Source: Genius database. |
| Previous cash dividends per share (PCDPS) | Cash dividends per share paid in year $t-1$. Source: Genius database. |
| Previous stock dividends per share (PSDPS) | Stock dividends per share paid in year $t-1$. Source: Genius database. |

*Note:* This table describes the variables used in this study. The first column gives the names of the variables, the second column describes the variables and provides the sources of data for the variables.

covenants, debt holders usually exert significant influence over the time and level of dividend payout (Kalay, 1982; Stiglitz, 1985).

The potential impact of the firm's cash availability on the payout level of cash dividends is controlled for by including the logarithm of total cash balance at the accounting year end (LCASH). The more free cash flows a firm owns, the more possible it pays cash dividends. We also include investment opportunities as a control variable (INVEST) because Smith and Warner (1992) argue that firms without profitable opportunities should pay higher dividends rather than undertake projects with a negative net present value. In other words, firms with high growth opportunities are likely to pay lower dividends since they have lower free cash flows and less flexibility in their dividend policy. Following Fama and French (2001), we use a firm's asset growth rate as the proxy for investment opportunities.[7] According to Wei (2002), the longer the listing time of a Chinese company, the worse its performance. Therefore, we include the number of years that a firm had been listed from 1994 as a control variable (LTIME). We also include profitability as a control variable, proxied by return on assets (ROA). In order to control the effect of the firm's previous dividend payout record, we use dummy variables cash dividend in year $t-1$ (PCDPS) and stock dividends per share in year $t-1$ (PSDPS). Finally, we introduce foreign ownership (FOREIGN) to control its effect on the dividend payment policy.

### *4.3. Data Description*

Table 4 presents the characteristics of cash dividend payout level, stock dividend payout level, state ownership, private ownership, and control variables, including minimum, maximum, mean and standard deviation. The average cash (stock) dividends per share is 0.064 (0.072). The maximum state shareholding is 89% with a mean value of 28.8%. The average individual shareholding is 33.7%.

Table 4 shows that our data are highly skewed and are not normally distributed as the ratios of kurtosis and skewness to standard errors are significantly beyond the range between $-2$ and $+2$. In order to improve the estimation accuracy of regression and exclude the effect of outliers, following Kane and Meade (1998), Zou et al. (2003), we rank-transform the independent and dependent variables and replace them with the rank equivalents in our analysis.[8] For example, for the cash dividend payout level (CASH) for year $t$, which is defined as the ratio of cash dividends per share to the earnings per share, we replace each value of $\text{CASH}_t$ with its corresponding rank divided by $n + 1$.

Table 5 provides the correlation statistics of independent variables. There is a significantly positive relationship between cash balance (LCASH) and firm size

***Table 4.*** Descriptive Statistics for the Full Sample.

| | Mean | Median | Standard Deviation | Minimum | Maximum | Skewness | Ratio of Skewness to Standard Error | Kurtosis | Ratio of Kurtosis to Standard Error |
|---|---|---|---|---|---|---|---|---|---|
| CDPS | 0.064 | 0.000 | 0.098 | 0.000 | 0.800 | 2.205 | 56.538 | 6.721 | 87.286 |
| CD/Earnings | 0.180 | 0.000 | 1.540 | −93.860 | 11.120 | −56.920 | −1459.487 | 3485.066 | 45260.597 |
| CD/Sales | 0.038 | 0.000 | 0.167 | 0.000 | 5.840 | 24.933 | 639.308 | 780.120 | 10131.429 |
| SDPS | 0.072 | 0.000 | 0.186 | 0.000 | 1.000 | 3.009 | 77.154 | 9.015 | 117.078 |
| SD/Earnings | 0.297 | 0.000 | 2.574 | −16.850 | 109.070 | 28.276 | 725.026 | 1009.647 | 13112.299 |
| SD/Sales | 0.048 | 0.000 | 0.552 | 0.000 | 32.680 | 52.762 | 1352.872 | 3071.274 | 39886.675 |
| IA-CDPS | 0.036 | 0.000 | 0.097 | −0.160 | 0.800 | 2.151 | 55.154 | 6.973 | 89.397 |
| IA-CD/Earnings | 0.065 | 0.000 | 1.538 | −93.860 | 10.690 | −56.958 | −1460.462 | 3487.430 | 45291.299 |
| IA-CD/Sales | 0.024 | 0.000 | 0.165 | −0.120 | 5.820 | 25.521 | 654.385 | 812.831 | 10556.247 |
| IA-SDPS | 0.064 | 0.000 | 0.183 | −0.310 | 1.000 | 3.063 | 78.538 | 9.521 | 122.064 |
| IA-SD/Earnings | 0.272 | 0.000 | 2.569 | −16.850 | 108.840 | 28.288 | 725.333 | 1009.865 | 13115.130 |
| IA-SD/Sales | 0.045 | 0.000 | 0.550 | −0.190 | 32.550 | 52.755 | 1352.692 | 3070.013 | 39870.299 |
| STATE | 0.288 | 0.291 | 0.262 | 0.000 | 0.890 | 0.263 | 6.744 | −1.346 | −17.481 |
| PRIVATE | 0.337 | 0.320 | 0.144 | 0.010 | 1.000 | 0.773 | 19.821 | 2.543 | 33.026 |
| T10 | 0.601 | 0.618 | 0.175 | 0.000 | 5.100 | 3.721 | 95.410 | 113.083 | 1468.610 |
| SIZE | 5.032 | 5.011 | 0.374 | 3.770 | 6.760 | 0.415 | 10.641 | 0.412 | 5.351 |
| DEBT | 0.458 | 0.438 | 0.316 | 0.010 | 9.240 | 12.986 | 332.974 | 297.311 | 3861.182 |
| LCASH | 3.966 | 4.030 | 0.624 | −0.400 | 5.550 | −0.888 | −22.769 | 2.371 | 30.792 |
| INVEST | 0.185 | 0.114 | 0.380 | −0.840 | 5.890 | 4.770 | 122.308 | 45.489 | 590.766 |
| LTIME | 3.622 | 3.000 | 2.159 | 1.000 | 15.000 | 0.728 | 18.667 | 0.066 | 0.857 |
| ROA | 0.035 | 0.051 | 0.192 | −8.550 | 0.440 | −27.165 | −696.538 | 1078.255 | 14003.312 |
| FOREIGN | 0.013 | 0.000 | 0.058 | 0.000 | 0.460 | 5.023 | 128.795 | 26.061 | 338.455 |

*Note:* This table presents descriptive statistics for the full sample that consists of listed firms in Shanghai Stock Exchange and Shenzhen Stock Exchange for the years 1995–2001. The observations are 3,994: (1) CDPS, cash dividends per share; (2) CD/Earnings, cash-dividend-to-earnings; (3) CD/Sales, cash-dividend-to-sales; (4) SDPS, stock dividends per share; (5) SD/Earnings, stock-dividend-to-earnings; (6) SD/Sales, stock-dividend-to-sales; (7) IA-CDPS, Industry adjusted cash dividends per share; (8) IA-CD/Earnings, Industry adjusted cash-dividend-to-earnings; (9) IA-CD/Sales, Industry adjusted cash-dividend-to-sales; (10) IA-SDPS, Industry adjusted stock dividends per share; (11) IA-SD/Earnings, Industry adjusted stock-dividend-to-earnings; (12) IA-SD/Sales, Industry adjusted stock-dividend-to-sales; (13) STATE, state ownership; (14) PRIVATE, private ownership; (15) T10, ownership concentration; (16) SIZE, firm size; (17) DEBT, capital structure; (18) LCASH, cash balance; (19) INVEST, investment opportunities; (20) LTIME, listing time; (21) ROA, return on assets; (22) PCDPS, previous cash dividends per share; (23) PSDPS, previous stock dividends per share; and (24) FOREIGN, foreign ownership.

***Table 5.*** Correlations Statistics for the Full Sample.

| | STATE | PRIVATE | T10 | SIZE | DEBT | LCASH | INVEST | LTIME | ROA | PCDPS | PSDPS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| STATE | 1 | | | | | | | | | | |
| PRIVATE | −0.194*** | 1 | | | | | | | | | |
| T10 | 0.191*** | −0.502*** | 1 | | | | | | | | |
| SIZE | 0.145*** | −0.166*** | 0.041*** | 1 | | | | | | | |
| DEBT | −0.007 | 0.059*** | −0.074*** | −0.014 | 1 | | | | | | |
| LCASH | 0.105*** | −0.081*** | 0.024 | 0.685*** | −0.172*** | 1 | | | | | |
| INVEST | −0.06*** | 0.094*** | −0.015 | 0.116*** | −0.105*** | 0.195*** | 1 | | | | |
| LTIME | −0.096*** | 0.205*** | −0.22*** | 0.127*** | 0.181*** | 0.06*** | −0.099*** | 1 | | | |
| ROA | 0.022 | −0.051*** | 0.063*** | 0.097*** | −0.705*** | 0.201*** | 0.209*** | −0.155*** | 1 | | |
| PCDPS | 0.056*** | −0.07*** | 0.013 | 0.18*** | −0.113*** | 0.215*** | 0.004 | −0.154*** | 0.116*** | 1 | |
| PSDPS | −0.042*** | 0.032** | 0 | −0.064*** | −0.056*** | −0.015 | 0.138*** | −0.162*** | 0.099*** | −0.09*** | 1 |
| FOREIGN | −0.169*** | −0.103*** | 0.101*** | 0.005 | 0.028 | −0.025 | −0.027 | 0.066*** | −0.027 | 0.016 | 0.012 |

*Note:* This table reports the Pearson correlation statistics for the full sample that consists of listed firms in Shanghai Stock Exchange and Shenzhen Stock Exchange during 1995–2001. There are 3,994 observations: (1) STATE, state ownership; (2) PRIVATE, private ownership; (3) T10, ownership concentration; (4) SIZE, firm size; (5) DEBT, capital structure; (6) LCASH, cash balance; (7) INVEST, investment opportunities; (8) LTIME, listing time; (9) ROA, return on assets; (10) PCDPS, previous cash dividends per share; (11) PSDPS, previous stock dividends per share; and (12) FOREIGN, foreign ownership.

** Significant at the 0.05 level (2-tailed).

*** Significant at the 0.01 level (2-tailed).

(SIZE). The correlation coefficient is 0.685. It is possible that larger firms usually have more cash balance.

## 5. REGRESSION RESULTS

The regression analyses are conducted in two stages. The first stage consists of a series of OLS regressions and uses the pooled cross-sectional time-series data. The second stage consists of a series of logit regressions. We only report the regression results using the rank-transformed data.

### *5.1. OLS Regressions*

Table 6 presents the results of OLS regressions based on the three measures of dividends for the full sample when cash dividend rates are used as dependent variables. Panel A shows the regression results before industry adjustment. All regressions show that dividend payment level is positively related to state ownership (STATE) and negatively associated with private ownership PRIVATE. Two out of three coefficients for STATE are significant, namely, in the models for cash dividends per share (CDPS) and cash – dividend-to-earnings (CDPS/Earnings). Panel B shows that after industry adjustment there still exists a positive correlation between dividend rates and state ownership although the coefficients are not statistically significant.

Table 7 presents the results of OLS regressions based on the three measures of dividends for the full sample when stock dividend rates are used as dependent variables. In Panel A, there is a significantly positive relationship between the stock dividend rate and private ownership when stock dividends per share (SDPS) and stock-dividend-to-sales (SDPS/Sales) before industry adjustment are used as dependent variables. After industry adjustment, Panel B shows that a significantly positive correlation exists only when stock-dividend-to-sales (SDPS/Sales) is used as the dependent variable. Interestingly, we find a negative relationship between the stock dividend rates and state ownership before and after industry adjustment. Overall, we have evidence to support our expectation that state ownership is significantly and positively associated with cash dividend rates while private ownership is significantly and positively correlated with stock dividend rates. We conclude that corporate managers are likely to cater for the preference of shareholders for different kinds of dividend.

It is possible that the dividend policy of firms is a non-linear function of ownership structure. Therefore, we perform further tests on the relationship between

***Table 6.*** OLS Regression Results for Cash Dividends – The Full Sample.

Panel A

| | CDPS | | CD/Earnings | | CD/Sales | |
|---|---|---|---|---|---|---|
| | Coefficients | *t* | Coefficients | *t* | Coefficients | *t* |
| STATE | 0.023 | 1.653* | 0.035 | 2.308*** | 0.023 | 1.582 |
| PRIVATE | −0.011 | −0.616 | −0.022 | −1.177 | −0.021 | −1.184 |
| T10 | 0.004 | 0.226 | 0.023 | 1.237 | 0.023 | 1.276 |
| SIZE | 0.091 | 4.654*** | 0.035 | 1.683* | 0.055 | 2.753*** |
| DEBT | 0.002 | 0.133 | −0.091 | −5.330*** | −0.11 | −6.734*** |
| LCASH | 0.142 | 7.114*** | 0.159 | 7.428*** | 0.135 | 6.582*** |
| INVEST | 0.001 | 0.067 | 0.008 | 0.49 | 0.004 | 0.227 |
| LTIME | −0.057 | −3.949*** | −0.062 | −4.011*** | −0.05 | −3.317*** |
| ROA | 0.353 | 20.421*** | 0.177 | 9.518*** | 0.279 | 15.613*** |
| PCDPS | 0.207 | 14.160*** | 0.178 | 11.374*** | 0.161 | 10.677*** |
| PSDPS | −0.040 | −2.915*** | −0.043 | −2.912*** | −0.031 | −2.172** |
| FOREIGN | 0.033 | 2.433*** | 0.023 | 1.546 | 0.022 | 1.539 |
| Adj-$R^2$ | 0.322 | | 0.206 | | 0.266 | |
| *F* | 156.324 | | 87.138 | | 121.528 | |

Panel B

| | IA-CDPS | | IA-CD/Earnings | | IA-CD/Sales | |
|---|---|---|---|---|---|---|
| | Coefficients | *t* | Coefficients | *t* | Coefficients | *t* |
| STATE | 0.010 | 0.727 | 0.019 | 1.220 | 0.014 | 0.92 |
| PRIVATE | 0.009 | 0.501 | 0.004 | 0.232 | −0.011 | −0.581 |
| T10 | 0.002 | 0.115 | 0.027 | 1.378 | 0.003 | 0.153 |
| SIZE | 0.089 | 4.391*** | 0.031 | 1.414 | 0.025 | 1.194 |
| DEBT | 0.033 | 2.000** | −0.061 | −3.445*** | −0.088 | −5.161*** |
| LCASH | 0.128 | 6.247*** | 0.153 | 6.927*** | 0.126 | 5.893*** |
| INVEST | 0.001 | 0.054 | 0.010 | 0.585 | 0.002 | 0.104 |
| LTIME | −0.042 | −2.830*** | −0.049 | −3.046*** | −0.035 | −2.22** |
| ROA | 0.347 | 19.412*** | 0.159 | 8.272*** | 0.257 | 13.773*** |
| PCDPS | 0.194 | 12.848*** | 0.155 | 9.586*** | 0.147 | 9.344*** |
| PSDPS | −0.030 | −2.109*** | −0.035 | −2.269** | −0.028 | −1.852* |
| FOREIGN | 0.051 | 3.556*** | 0.039 | 2.529*** | 0.031 | 2.108** |
| Adj-$R^2$ | 0.277 | | 0.155 | | 0.202 | |
| *F* | 126.431 | | 61.875 | | 84.954 | |

*Note:* This table reports the regression result of the full sample. The sample consists of 3,994 firms listed in the Shanghai Stock Exchange (SHSE) and the Shenzhen Stock Exchange (SZSE) for the period 1995–2001. The dependent variables are cash dividends per share (CDPS), cash-dividend-to-earnings (CD/Earnings), and cash-dividend-to-sales (CD/Sales) in Panel A, and IA-cash dividends per share (IA-CDPS), IA-cash-dividend-to-earnings (IA-CD/Earnings), and IA-cash-dividend-to-sales (IA-CD/Sales) in Panel B respectively. The independent variables are: (1) STATE, state ownership; (2) PRIVATE, private ownership; (3) T10, ownership concentration; (4) SIZE, firm size; (5) DEBT, capital structure; (6) LCASH, cash balance; (7) INVEST, investment opportunities; (8) LTIME, listing time; (9) ROA, return on assets; (10) PCDPS, previous cash dividends per share; (11) PSDPS, previous stock dividends per share; and (12) FOREIGN, foreign ownership.

*Significance at the 10% level (two-tailed).

**Significance at the 5% level (two-tailed).

***Significance at the 1% level (two-tailed).

***Table 7.*** OLS Regression Results for Stock Dividends – The Full Sample.

Panel A

| | SDPS | | SD/Earnings | | SD/Sales | |
|---|---|---|---|---|---|---|
| | Coefficients | *t* | Coefficients | *t* | Coefficients | *t* |
| STATE | −0.007 | −0.415 | −0.009 | −0.529 | −0.011 | −0.687 |
| PRIVATE | 0.033 | 1.678* | 0.023 | 1.133 | 0.038 | 1.900** |
| T10 | −0.014 | −0.694 | −0.016 | −0.799 | −0.008 | −0.411 |
| SIZE | −0.046 | −2.010** | −0.062 | −2.710*** | −0.042 | −1.832* |
| DEBT | 0.053 | 2.905 | 0.03 | 1.613* | 0.017 | 0.929 |
| LCASH | 0.015 | 0.633 | 0.015 | 0.631 | 0.003 | 0.149 |
| INVEST | 0.146 | 8.249*** | 0.146 | 8.186*** | 0.139 | 7.825*** |
| LTIME | 0.007 | 0.402 | 0.008 | 0.443 | 0.019 | 1.113 |
| ROA | 0.190 | 9.468*** | 0.144 | 7.117*** | 0.168 | 8.312*** |
| PCDPS | −0.038 | −2.258** | −0.047 | −2.733*** | −0.054 | −3.186*** |
| PSDPS | 0.007 | 0.424 | −0.003 | −0.164 | 0.004 | 0.262 |
| FOREIGN | 0.032 | 2.028** | 0.014 | 0.887 | 0.032 | 2.013** |
| Adj-$R^2$ | 0.071 | | 0.054 | | 0.062 | |
| *F* | 26.472 | | 20.071 | | 22.825 | |

Panel B

| | IA-SDPS | | IA-SD/Earnings | | IA-SD/Sales | |
|---|---|---|---|---|---|---|
| | Coefficients | *t* | Coefficients | *t* | Coefficients | *t* |
| STATE | −0.003 | −0.193 | −0.005 | −0.284 | −0.007 | −0.430 |
| PRIVATE | 0.030 | 1.500 | 0.018 | 0.910 | 0.034 | 1.710* |
| T10 | −0.004 | −0.183 | −0.009 | −0.438 | −0.011 | −0.530 |
| SIZE | −0.040 | −1.760* | −0.057 | −2.492*** | −0.047 | −2.058** |
| DEBT | 0.053 | 2.863*** | 0.027 | 1.441 | 0.013 | 0.717 |
| LCASH | 0.014 | 0.599 | 0.014 | 0.612 | 0.006 | 0.272 |
| INVEST | 0.150 | 8.453*** | 0.150 | 8.401*** | 0.146 | 8.199*** |
| LTIME | 0.014 | 0.852 | 0.015 | 0.875 | 0.020 | 1.166 |
| ROA | 0.188 | 9.333*** | 0.140 | 6.894*** | 0.162 | 8.038*** |
| PCDPS | −0.039 | −2.322** | −0.048 | −2.795*** | −0.051 | −2.969*** |
| PSDPS | 0.007 | 0.424 | −0.002 | −0.112 | 0.001 | 0.093 |
| FOREIGN | 0.033 | 2.032** | 0.014 | 0.887 | 0.030 | 1.897* |
| Adj-$R^2$ | 0.070 | | 0.053 | | 0.062 | |
| *F* | 25.903 | | 19.443 | | 22.875 | |

*Note:* This table reports the regression result of the full sample. The sample consists of 3,994 firms listed in Shanghai Stock Exchange (SHSE) and Shenzhen Stock Exchange (SZSE) for the period 1995–2001. The dependent variables are stock dividends per share (SDPS), stock-dividend-to-earnings (SD/Earnings) and stock-dividend-to-sales (SD/Sales) in Panel A, and IA-stock dividends per share (IA-SDPS), IA-stock-dividend-to-earnings (IA-SD/Earnings) and IA-stock-dividend-to-sales (IA-SD/Sales) in Panel B respectively. The independent variables are: (1) STATE, state ownership; (2) PRIVATE, private ownership; (3) T10, ownership concentration; (4) SIZE, firm size; (5) DEBT, capital structure; (6) LCASH, cash balance; (7) INVEST, investment opportunities; (8) LTIME, listing time; (9) ROA, return on assets; (10) PCDPS, previous cash dividends per share; (11) PSDPS, previous stock dividends per share; and (12) FOREIGN, foreign ownership. The stock dividends data in the sample include stock dividends from distributable earnings and/or capital surplus. We also use pooled stock dividends only from distributable earnings and obtain qualitatively similar results.

*Significance at the 10% level (two-tailed).

**Significance at the 5% level (two-tailed).

***Significance at the 1% level (two-tailed).

dividend rates and different ownership types. Table 8 presents the OLS regression results of three state ownership sub-samples that are obtained by dividing the full sample by two cut off percent levels (50 and 20%) using cash dividend rates. Panel A shows that when state ownership is above 50%, there are significantly positive correlations between dividend rates and state ownership when cash dividends per share (CDPS) and cash-dividend-to-earnings (CD/Earnings) are used as dependent variables. After industry adjustment, Panel B shows similar results.

Panel A of Table 9 reports that, at the 20% level of control, state ownership has a significantly positive effect on the stock dividend rates. When the control is above 50%, there is a significantly negative correlation between state ownership and the stock dividend rates. These results provide some confirmation of the negative impact of state shareholders on stock dividend rates, reported in Table 8. However, Panel B shows that after industry adjustment, we cannot find evidence to support that at the 20% level of control there is a positive relation between state ownership and stock dividends.

In Table 10, we test the relation between cash dividend rates and different private ownership groups. Panel A shows that there is a negative relation between private ownership and cash dividends rates when private ownership is greater than 20%. In particular, the coefficients of PRIAVTE are significant for all three regressions when private ownership is greater than 20% but less than 50%. The industry adjustment does not affect these results (see Panel B).

Table 11 reports the OLS regression results of three private ownership sub-samples using stock dividend rates. Panel A shows that there is a positive relationship between private ownership and stock dividend rates when private ownership is more than 20%. Especially, at the 50% level of control, private ownership has a significantly positive effect on stock dividend rates, and state ownership has a significantly negative effect on stock dividend rates. Similarly, Panel B shows that the industry adjustment does not qualitatively change these results. Thus, we have evidence that the relationship between dividend rates and ownership structure is non-linear. The higher the proportion of state ownership, the higher the cash dividend rate. The higher the proportion of private ownership, the higher the stock dividend rate. We conclude that the managers of Chinese listed companies are likely to cater for the preference of different shareholders.

As expected, the level of a firm's cash balance significantly affects cash dividend rates; the coefficients for the variable LCASH are all significantly positive at the 1% level (see Tables 6, 8 and 10). However, we cannot find any conclusive evidence that ownership concentration has any significant effect on dividend rates. As for debt, we find that it has a significantly negative correlation with cash dividend rates (see Tables 6, 8, and 10). It seems that debt covenants of

***Table 8.*** OLS Regression Results for Cash Dividends – State Ownership.

| Panel A | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | [0%, 20%) | | | [20%, 50%) | | | [50%, 100%) | | |
| | CDPS | CD/Earnings | CD/Sales | CDPS | CD/Earnings | CD/Sales | CDPS | CD/Earnings | CD/Sales |
| STATE | 0.021 | 0.034 | 0.019 | 0.022 | −0.019 | −0.004 | 0.041 | 0.048 | 0.034 |
| | (1.027) | (1.569) | (0.914) | (−0.872) | (−0.699) | (−0.134) | (1.871)* | (2.287)** | (1.025) |
| PRIVATE | −0.068 | −0.065 | −0.081 | 0.029 | 0.003 | 0.034 | 0.018 | 0.007 | 0.002 |
| | (−2.565)*** | (−2.284)** | (−2.919)*** | (1.019) | (0.110) | (1.143) | (0.557) | (0.205) | (0.048) |
| T10 | 0.012 | 0.040 | 0.001 | −0.029 | −0.007 | 0.017 | −0.010 | 0.012 | 0.021 |
| | (0.438) | (1.380) | (0.046) | (−0.977) | (−0.205) | (0.530) | (−0.288) | (0.322) | (0.589) |
| SIZE | 0.135 | 0.053 | 0.069 | 0.040 | 0.009 | 0.042 | 0.047 | 0.044 | 0.034 |
| | (4.729)*** | (1.712)* | (2.315)** | (1.083) | (−0.236) | (1.089) | (1.200) | (1.059) | (0.857) |
| DEBT | −0.010 | −0.101 | −0.107 | 0.046 | −0.028 | −0.085 | −0.003 | −0.130 | −0.135 |
| | (−0.438) | (−4.001)*** | (−4.360)*** | (1.520) | (−0.881) | (−2.715)*** | (−0.099) | (−3.827)*** | (−4.195)*** |
| LCASH | 0.145 | 0.171 | 0.149 | 0.153 | 0.177 | 0.130 | 0.145 | 0.130 | 0.133 |
| | (4.947)*** | (5.392)*** | (4.857)*** | (3.964)*** | (4.287)*** | (3.257)*** | (3.799)*** | (3.180)*** | (3.423)*** |
| INVEST | 0.016 | 0.021 | 0.019 | 0.011 | 0.005 | −0.008 | −0.006 | −0.006 | 0.002 |
| | (0.703) | (0.874) | (0.814) | (−0.382) | (0.154) | (−0.271) | (−0.217) | (−0.179) | (0.070) |
| LTIME | −0.067 | −0.071 | −0.058 | −0.027 | −0.032 | −0.056 | −0.050 | −0.068 | −0.015 |
| | (−3.028)*** | (−2.999)*** | (−2.536)** | (−1.025) | (−1.117) | (−2.042)** | (−1.734)* | (−2.208)** | (−0.510) |
| ROA | 0.303 | 0.142 | 0.251 | 0.402 | 0.232 | 0.306 | 0.381 | 0.169 | 0.296 |
| | (11.898)*** | (5.182)*** | (9.443)*** | (12.176)*** | (6.531)*** | (8.905)*** | (11.289)*** | (4.626)*** | (8.548)*** |
| PCDPS | 0.213 | 0.187 | 0.169 | 0.167 | 0.136 | 0.108 | 0.204 | 0.186 | 0.183 |
| | (9.607)*** | (7.860)*** | (7.344)*** | (6.089)*** | (4.603)*** | (3.754)*** | (7.294)*** | (6.191)*** | (6.402)*** |
| PSDPS | −0.035 | −0.038 | −0.030 | −0.035 | −0.031 | −0.014 | −0.052 | −0.060 | −0.050 |
| | (−1.692)* | (−1.707)* | (−1.375) | (−1.330) | (−1.114) | (−0.501) | (−1.920)* | (−2.075)** | (−1.827)* |
| FOREIGN | 0.041 | 0.027 | 0.024 | 0.019 | 0.010 | 0.021 | 0.003 | 0.018 | −0.008 |
| | (1.967)** | (1.192) | (1.131) | (0.753) | (0.369) | (0.808) | (0.112) | (0.622) | (−0.305) |
| Adj-$R^2$ | 0.346 | 0.231 | 0.280 | 0.288 | 0.163 | 0.217 | 0.319 | 0.197 | 0.278 |
| *F* | 75.404 | 44.101 | 56.668 | 40.434 | 20.302 | 28.459 | 42.454 | 23.092 | 35.613 |

Panel B

| | [0%, 20%) | | | [20%, 50%) | | | [50%, 100%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | IA-CDPS | IA-CD/Earnings | IA-CD/Sales | IA-CDPS | IA-CD/Earnings | IA-CD/Sales | IA-CDPS | IA-CD/Earnings | IA-CD/Sales |
| STATE | 0.012 | 0.012 | 0.009 | 0.001 | 0.001 | −0.015 | 0.053 | 0.043 | 0.031 |
| | (0.557) | (0.516) | (0.420) | (0.037) | (0.037) | (−0.547) | (1.874)* | (1.673)* | (0.909) |
| PRIVATE | −0.032 | −0.014 | −0.043 | 0.034 | 0.034 | 0.026 | 0.028 | 0.016 | −0.004 |
| | (−1.155) | (−0.471) | (−1.488) | (1.155) | (1.155) | (0.858) | (0.810) | (0.423) | (−0.121) |
| T10 | 0.003 | 0.046 | −0.009 | −0.030 | −0.030 | −0.030 | −0.020 | −0.001 | 0.019 |
| | (0.118) | (1.525) | (−0.287) | (−0.982) | (−0.982) | (−0.928) | (−0.538) | (−0.020) | (0.498) |
| SIZE | 0.124 | 0.035 | 0.046 | 0.070 | 0.070 | 0.003 | 0.032 | 0.024 | −0.005 |
| | (4.120)*** | (1.092) | (1.461) | (1.841)* | (1.841)* | (0.066) | (0.805) | (0.566) | (−0.126) |
| DEBT | 0.021 | −0.070 | −0.086 | 0.071 | 0.071 | −0.055 | 0.031 | −0.091 | −0.117 |
| | (0.847) | (−2.635)*** | (−3.317)*** | (2.339) | (2.339)** | (−1.716)* | (0.944) | (−2.588)*** | (−3.506)*** |
| LCASH | 0.140 | 0.169 | 0.138 | 0.126 | 0.126 | 0.142 | 0.121 | 0.121 | 0.107 |
| | (4.535)*** | (5.097)*** | (4.268)*** | (3.222)*** | (3.222)*** | (3.457)*** | (3.090)*** | (2.856)*** | (2.671)*** |
| INVEST | 0.019 | 0.025 | 0.014 | −0.012 | −0.012 | −0.016 | −0.013 | −0.009 | 0.014 |
| | (0.806) | (0.988) | (0.559) | (−0.424) | (−0.424) | (−0.506) | (−0.439) | (−0.277) | (0.447) |
| LTIME | −0.054 | −0.049 | −0.056 | −0.015 | −0.015 | −0.051 | −0.030 | −0.061 | 0.031 |
| | (−2.358)** | (−1.976)** | (−2.322)** | (−0.577) | (−0.577) | (−1.802)* | (−0.990) | (−1.883)* | (1.023) |
| ROA | 0.282 | 0.110 | 0.209 | 0.414 | 0.414 | 0.296 | 0.386 | 0.143 | 0.290 |
| | (10.602)*** | (3.847)*** | (7.467)*** | (12.348)*** | (12.348)*** | (8.388)*** | (10.908)*** | (3.783)*** | (8.093)*** |
| PCDPS | 0.205 | 0.166 | 0.153 | 0.153 | 0.153 | 0.083 | 0.190 | 0.168 | 0.177 |
| | (8.878)*** | (6.663)*** | (6.267)*** | (5.480)*** | (5.480)*** | (2.836)*** | (6.537)*** | (5.373)*** | (5.988)*** |
| PSDPS | −0.021 | −0.026 | −0.023 | −0.029 | −0.029 | −0.012 | −0.047 | −0.048 | −0.053 |
| | (−0.998) | (−1.122) | (−1.021) | (−1.093) | (−1.093) | (−0.433) | (−1.668)** | (−1.602) | (−1.849)* |

*Note:* This table reports the regression result of the three State ownership sub-samples according to different shareholding percentage. The dependent variables are cash dividends per share (CDPS), cash-dividend-to-earnings (CDPS/Earnings) and cash-dividend-to-sales (CDPS/Sales) in Panel A, and IA-cash dividends per share (IA-CDPS), IA-cash-dividend-to-earnings (IA-CDPS/Earnings) and IA-cash-dividend-to-sales (IA-CDPS/Sales) in Panel B respectively. The independent variables are: (1) STATE, state ownership; (2) PRIVATE, private ownership; (3) T10, ownership concentration; (4) SIZE, firm size; (5) DEBT, capital structure; (6) LCASH, cash balance; (7) INVEST, investment opportunities; (8) LTIME, listing time; (9) ROA, return on assets; (10) PCDPS, previous cash dividends per share; (11) PSDPS, previous stock dividends per share; and (12) FOREIGN, foreign ownership. *T*-statistics are put in parentheses.

*Significance at the 10% level (two-tailed).

**Significance at the 5% level (two-tailed).

***Significance at the 1% level (two-tailed).

***Table 9.*** OLS Regression Results for Stock Dividends – State Ownership.

| Panel A | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | [0%, 20%) | | | [20%, 50%) | | | [50%, 100%) | | |
| | SDPS | SD/Earnings | SD/Sales | SDPS | SD/Earnings | SD/Sales | SDPS | SD/Earnings | SD/Sales |
| STATE | 0.046 | 0.054 | 0.041 | 0.004 | −0.003 | −0.004 | −0.108 | −0.091 | −0.088 |
| | (1.936)** | (2.254)** | (1.696)* | (0.121) | (−0.100) | (−0.144) | (−2.857)*** | (−2.382)** | (−2.320)** |
| PRIVATE | 0.085 | 0.067 | 0.087 | −0.010 | −0.014 | 0.007 | 0.017 | 0.017 | 0.011 |
| | (2.742)*** | (2.125)** | (2.784)*** | (−0.304) | (−0.425) | (0.197) | (0.454) | (0.432) | (0.292) |
| T10 | 0.008 | 0.000 | 0.000 | 0.006 | 0.026 | 0.026 | 0.042 | 0.030 | 0.041 |
| | (0.240) | (0.015) | (0.007) | (0.184) | (0.750) | (0.750) | (1.041) | (0.736) | (0.993) |
| SIZE | −0.030 | −0.049 | −0.026 | −0.005 | −0.004 | 0.001 | −0.094 | −0.121 | −0.097 |
| | (−0.883) | (−1.431) | (−0.759) | (−0.115) | (−0.085) | (0.034) | (−2.091)** | (−2.682)*** | (−2.143)** |
| DEBT | 0.030 | −0.001 | −0.006 | 0.080 | 0.051 | 0.044 | 0.052 | 0.045 | 0.012 |
| | (1.093) | (−0.046) | (−0.213) | (2.339)*** | (1.478) | (1.269) | (1.437) | (1.225) | (.335) |
| LCASH | 0.030 | 0.026 | 0.014 | 0.002 | −0.006 | −0.013 | −0.003 | 0.017 | −0.002 |
| | (0.879) | (0.757) | (0.413) | (0.041) | (−0.127) | (−0.287) | (−0.075) | (0.383) | (−0.035) |
| INVEST | 0.175 | 0.175 | 0.170 | 0.123 | 0.119 | 0.108 | 0.106 | 0.112 | 0.111 |
| | (6.529)*** | (6.493)*** | (6.326)*** | (3.736)*** | (3.557)*** | (3.244)*** | (3.108)*** | (3.256)*** | (3.213)*** |
| LTIME | 0.008 | 0.011 | 0.013 | −0.042 | −0.041 | −0.033 | 0.035 | 0.032 | 0.062 |
| | (0.300) | (0.421) | (0.488) | (−1.386) | (−1.340) | (−1.102) | (1.053) | (0.953) | (1.857)* |
| ROA | 0.184 | 0.154 | 0.165 | 0.202 | 0.141 | 0.186 | 0.210 | 0.154 | 0.173 |
| | (6.137)*** | (5.104)*** | (5.474)*** | (5.362)*** | (3.700)*** | (4.907)*** | (5.369)*** | (3.900)*** | (4.392)*** |
| PCDPS | −0.027 | −0.038 | −0.043 | −0.050 | −0.053 | −0.072 | −0.041 | −0.045 | −0.045 |
| | (−1.023) | (−1.469) | (−1.666)* | (−1.608) | (−1.658)* | (−2.296)** | (−1.269) | (−1.393) | (−1.390) |
| PSDPS | −0.034 | −0.046 | −0.039 | −0.001 | −0.007 | 0.003 | 0.062 | 0.056 | 0.060 |
| | (−1.384) | (−1.894)* | (−1.590) | (−0.049) | (−0.221) | (0.100) | (1.993)** | (1.782)* | (1.900)* |
| FOREIGN | 0.076 | 0.052 | 0.080 | −0.037 | −0.046 | −0.041 | 0.002 | −0.007 | −0.002 |
| | (3.116)*** | (2.107)** | (3.284)*** | (−1.277) | (−1.577) | (−1.420) | (0.068) | (0.237) | (0.065) |
| Adj-$R^2$ | 0.085 | 0.071 | 0.076 | 0.060 | 0.037 | 0.049 | 0.074 | 0.057 | 0.060 |
| *F* | 14.323 | 12.028 | 12.822 | 7.298 | 4.799 | 6.084 | 8.165 | 6.452 | 6.749 |

Panel B

| | [0%, 20%) | | | [20%, 50%) | | | [50%, 100%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | IA-SDPS | IA-SD/Earnings | IA-SD/Sales | IA-SDPS | IA-SD/Earnings | IA-SD/Sales | IA-SDPS | IA-SD/Earnings | IA-SD/Sales |
| STATE | 0.051 | 0.057 | 0.047 | 0.020 | 0.007 | −0.011 | −0.116 | −0.102 | −0.100 |
| | (2.129)** | (2.369)** | (1.943)*** | (0.696) | (0.248) | (−0.368) | (−3.085)*** | (−2.685)*** | (−2.644)*** |
| PRIVATE | 0.076 | 0.061 | 0.081 | −0.005 | −0.013 | 0.008 | 0.009 | 0.006 | 0.002 |
| | (2.453)*** | (1.948)** | (2.586)*** | (−0.166) | (−0.401) | (0.238) | (0.248) | (0.151) | (0.061) |
| T10 | 0.014 | 0.004 | −0.001 | 0.020 | 0.033 | 0.025 | 0.041 | 0.036 | 0.047 |
| | (0.437) | (0.112) | (−0.028) | (0.574) | (0.958) | (0.722) | (1.009) | (0.871) | (1.134) |
| SIZE | −0.028 | −0.052 | −0.026 | 0.009 | 0.007 | −0.003 | −0.093 | −0.112 | −0.112 |
| | (−0.846) | (−1.525) | (−0.767) | (0.221) | (0.151) | (−0.065) | (−2.069)** | (−2.478)*** | (−2.477)*** |
| DEBT | 0.031 | −0.006 | −0.012 | 0.077 | 0.048 | 0.040 | 0.052 | 0.043 | 0.009 |
| | (1.117) | (−0.214) | (−0.425) | (2.230)** | (1.366) | (1.150) | (1.422) | (1.154) | (0.245) |
| LCASH | 0.033 | 0.030 | 0.017 | −0.021 | −0.023 | −0.024 | 0.013 | 0.028 | 0.019 |
| | (0.960) | (0.869) | (0.478) | (−0.477) | (−0.515) | (−0.545) | (0.285) | (0.624) | (0.435) |
| INVEST | 0.180 | 0.178 | 0.177 | 0.127 | 0.124 | 0.112 | 0.112 | 0.123 | 0.123 |
| | (6.727)*** | (6.591)*** | (6.586)*** | (3.853)*** | (3.700)*** | (3.391)*** | (3.270)*** | (3.566)*** | (3.582)*** |
| LTIME | 0.013 | 0.015 | 0.013 | −0.033 | −0.031 | −0.032 | 0.046 | 0.042 | 0.063 |
| | (0.493) | (0.582) | (0.486) | (−1.079) | (−1.017) | (−1.064) | (1.383) | (1.262) | (1.884)** |
| ROA | 0.183 | 0.151 | 0.160 | 0.192 | 0.129 | 0.181 | 0.215 | 0.157 | 0.167 |
| | (6.108)*** | (4.993)*** | (5.312)*** | (5.074)*** | (3.364)*** | (4.767)*** | (5.482)*** | (3.971)*** | (4.232)*** |
| PCDPS | −0.029 | −0.041 | −0.044 | −0.045 | −0.045 | −0.061 | −0.045 | −0.051 | −0.045 |
| | (−1.104) | (−1.564) | (−1.706)* | (−1.430) | (−1.407) | (−1.921)** | (−1.383) | (−1.559) | (−1.370) |
| PSDPS | −0.032 | −0.049 | −0.042 | 0.007 | 0.006 | 0.008 | 0.050 | 0.050 | 0.048 |
| | (−1.319) | (−1.997)** | (−1.728)* | (0.236) | (0.190) | (0.270) | (1.607) | (1.584) | (1.531) |
| FOREIGN | 0.076 | 0.053 | 0.080 | −0.034 | −0.044 | −0.048 | −0.006 | −0.013 | −0.002 |
| | (3.143)** | (2.164)** | (3.273)*** | (−1.176) | (−1.486) | (−1.649)* | (−0.189) | (−0.417) | (−0.066) |
| Adj-$R^2$ | 0.086 | 0.071 | 0.078 | 0.055 | 0.034 | 0.049 | 0.073 | 0.058 | 0.062 |
| *F* | 14.494 | 12.011 | 13.043 | 6.806 | 4.463 | 6.104 | 8.099 | 6.476 | 6.891 |
| *N* | | 1721 | | | 1192 | | | 1081 | |

*Note:* This table reports the regression result of the three State ownership sub-samples according to different shareholding percentage. The dependent variables are stock dividends per share (SDPS), stock-dividend-to-earnings (SDPS/Earnings) and stock-dividend-to-sales (SDPS/Sales) in Panel A, and IA-stock dividends per share (IA-SDPS), IA-stock-dividend-to-earnings (IA-SDPS/Earnings) and IA-stock-dividend-to-sales (IA-SDPS/Sales) in Panel B respectively. The independent variables are: (1) STATE, state ownership; (2) PRIVATE, private ownership; (3) T10, ownership concentration; (4) SIZE, firm size; (5) DEBT, capital structure; (6) LCASH, cash balance; (7) INVEST, investment opportunities; (8) LTIME, listing time; (9) ROA, return on assets; (10) PCDPS, previous cash dividends per share; (11) PSDPS, previous stock dividends per share; (12) FOREIGN, foreign ownership. The stock dividends data in the sample include stock dividends from distributable earnings and/or capital surplus. We also use pooled stock dividends only from distributable earnings and obtain qualitatively similar results.

*Significance at the 10% level (two-tailed).

**Significance at the 5% level (two-tailed).

***Significance at the 1% level (two-tailed).

***Table 10.*** OLS Regression Results for Cash Dividends – Private Ownership.

Panel A

| | [0%, 20%) | | | [20%, 50%) | | | [50%, 100%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | CDPS | CD/Earnings | CD/Sales | CDPS | CD/Earnings | CD/Sales | CDPS | CD/Earnings | CD/Sales |
| STATE | −0.044 | −0.026 | −0.039 | 0.034 | 0.044 | 0.038 | 0.042 | 0.052 | −0.006 |
| | (−1.208) | (−0.636) | (−1.023) | (2.080)** | (2.566)*** | (2.246)** | (1.038) | (1.165) | (−0.134) |
| PRIVATE | 0.044 | 0.037 | 0.079 | −0.038 | −0.046 | −0.034 | −0.052 | −0.072 | −0.059 |
| | (1.304) | (0.979) | (2.265)** | (−2.062)** | (−2.313)** | (−1.761)* | (−1.027) | (−1.303) | (−1.085) |
| T10 | 0.031 | 0.074 | 0.074 | −0.009 | 0.000 | 0.002 | 0.041 | 0.032 | 0.032 |
| | (0.926) | (1.965)** | (2.096)** | (−0.451) | (−0.010) | (0.090) | (0.784) | (0.565) | (0.570) |
| SIZE | 0.101 | 0.036 | 0.039 | 0.088 | 0.040 | 0.051 | 0.081 | −0.021 | 0.039 |
| | (2.134)** | (0.683) | (0.808) | (3.954)*** | (1.704) | (2.227)** | (1.432) | (−0.342) | (0.639) |
| DEBT | 0.014 | −0.107 | −0.115 | −0.002 | −0.089 | −0.105 | 0.048 | −0.053 | −0.098 |
| | (0.353) | (−2.501)*** | (−2.901)*** | (−0.096) | (−4.394)*** | (−5.374)*** | (1.051) | (−1.076) | (−2.024)** |
| LCASH | 0.061 | 0.099 | 0.111 | 0.159 | 0.166 | 0.136 | 0.181 | 0.238 | 0.222 |
| | (1.265) | (1.844)* | (2.227)** | (6.918)*** | (6.788)*** | (5.742)*** | (3.049)*** | (3.649)*** | (3.480)*** |
| INVEST | −0.006 | −0.025 | −0.026 | −0.017 | −0.003 | −0.004 | 0.060 | 0.072 | 0.057 |
| | (−0.147) | (−0.603) | (−0.665) | (−0.930) | (−0.174) | (−0.230) | (1.227) | (1.338) | (1.083) |
| LTIME | −0.021 | −0.046 | −0.004 | −0.044 | −0.048 | −0.045 | −0.083 | −0.073 | −0.107 |
| | (−0.588) | (−1.165) | (−0.118) | (−2.568)*** | (−2.649)*** | (−2.544)*** | (−2.048)** | (−1.639)* | (−2.449)** |
| ROA | 0.413 | 0.210 | 0.344 | 0.338 | 0.165 | 0.267 | 0.343 | 0.190 | 0.254 |
| | (9.485)*** | (4.304)*** | (7.611)*** | (16.762)*** | (7.658)*** | (12.848)*** | (6.682)*** | (3.398)*** | (4.633)*** |
| PCDPS | 0.285 | 0.260 | 0.226 | 0.181 | 0.157 | 0.148 | 0.236 | 0.186 | 0.121 |
| | (7.312)*** | (5.995)*** | (5.618)*** | (10.625)*** | (8.604)*** | (8.426)*** | (5.577)*** | (4.026)*** | (2.674)*** |
| PSDPS | −0.009 | −0.024 | −0.036 | −0.038 | −0.038 | −0.024 | −0.101 | −0.100 | −0.065 |
| | (−0.253) | (−0.612) | (−0.979) | (−2.360)** | (−2.179)** | (−1.421) | (−2.561)** | (−2.328)** | (−1.532) |
| FOREIGN | 0.062 | 0.043 | 0.009 | 0.017 | 0.010 | 0.016 | 0.027 | 0.024 | 0.051 |
| | (1.746)* | (1.077) | (0.239) | (1.044) | (0.555) | (0.946) | (0.692) | (0.571) | (1.222) |
| Adj-$R^2$ | 0.423 | 0.270 | 0.369 | 0.296 | 0.184 | 0.240 | 0.385 | 0.258 | 0.288 |
| *F* | 34.920 | 18.397 | 28.580 | 103.567 | 56.854 | 79.307 | 23.813 | 13.850 | 15.935 |

Panel B

| | [0%, 20%) | | | [20%, 50%) | | | [50%, 100%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | IA-CDPS | IA-CD/Earnings | IA-CD/Sales | IA-CDPS | IA-CD/Earnings | IA-CD/Sales | IA-CDPS | IA-CD/Earnings | IA-CD/Sales |
| STATE | −0.008 | −0.011 | −0.017 | 0.017 | 0.029 | 0.027 | −0.007 | −0.008 | −0.036 |
| | (−0.199) | (−0.265) | (−0.409) | (1.018) | (1.641)* | (1.538) | (−0.156) | (−0.174) | (−0.767) |
| PRIVATE | 0.060 | 0.034 | 0.064 | −0.042 | −0.046 | −0.046 | −0.052 | −0.070 | −0.055 |
| | (1.666)* | (0.853) | (1.697)* | (−2.182)** | (−2.285)*** | (−2.308)** | (−0.985) | (−1.221) | (−0.949) |
| T10 | 0.017 | 0.075 | 0.050 | −0.007 | 0.003 | −0.011 | 0.020 | 0.030 | −0.022 |
| | (0.486) | (1.871)* | (1.318) | (−0.339) | (0.166) | (−0.551) | (0.364) | (0.513) | (−0.365) |
| SIZE | 0.122 | 0.055 | 0.028 | 0.079 | 0.027 | 0.017 | 0.100 | 0.025 | 0.011 |
| | (2.447)** | (0.990) | (0.533) | (3.488)*** | (1.101) | (0.725) | (1.680)* | (0.388) | (0.171) |
| DEBT | 0.050 | −0.054 | −0.093 | 0.028 | −0.062 | −0.085 | 0.040 | −0.057 | −0.094 |
| | (1.212) | (−1.199) | (−2.192)** | (1.423) | (−3.017)*** | (−4.221)*** | (0.854) | (−1.101) | (−1.817)*** |
| LCASH | 0.053 | 0.099 | 0.115 | 0.139 | 0.155 | 0.122 | 0.195 | 0.219 | 0.205 |
| | (1.037) | (1.750)* | (2.165)** | (5.921)*** | (6.164)*** | (5.004)*** | (3.101)*** | (3.229)*** | (3.008)*** |
| INVEST | −0.016 | −0.041 | −0.025 | −0.012 | 0.002 | 0.001 | 0.056 | 0.093 | 0.041 |
| | (−0.417) | (−0.922) | (−0.610) | (−0.685) | (0.094) | (0.059) | (1.081) | (1.650)* | (0.726) |
| LTIME | −0.009 | −0.048 | −0.018 | −0.029 | −0.035 | −0.022 | −0.072 | −0.045 | −0.120 |
| | (−0.236) | (−1.159) | (−0.451) | (−1.670)* | (−1.907)* | (−1.206) | (−1.687)* | (−0.976) | (−2.590)*** |
| ROA | 0.391 | 0.159 | 0.293 | 0.340 | 0.158 | 0.254 | 0.294 | 0.132 | 0.196 |
| | (8.440)*** | (3.094)*** | (6.048)*** | (16.375)*** | (7.148)*** | (11.832)*** | (5.505)*** | (2.263)** | (3.350)*** |
| PCDPS | 0.261 | 0.228 | 0.201 | 0.174 | 0.139 | 0.138 | 0.212 | 0.144 | 0.104 |
| | (6.345)*** | (4.987)*** | (4.665)*** | (9.930)*** | (7.437)*** | (7.582)*** | (4.761)*** | (2.979)*** | (2.161)** |
| PSDPS | −0.003 | −0.025 | −0.053 | −0.032 | −0.032 | −0.021 | −0.081 | −0.079 | −0.042 |
| | (−0.068) | (−0.594) | (−1.349) | (−1.924)* | (−1.832)* | (−1.209) | (−1.936)*** | (−1.755)* | (−0.940) |
| FOREIGN | 0.074 | 0.061 | 0.013 | 0.040 | 0.030 | 0.030 | 0.065 | 0.054 | 0.086 |
| | (1.942)** | (1.447) | (0.321) | (2.428)*** | (1.697)* | (1.749)* | (1.610)* | (1.218) | |
| Adj-$R^2$ | 0.349 | 0.187 | 0.276 | 0.260 | 0.145 | 0.189 | 0.327 | 0.192 | 0.190 |
| *F* | 25.840 | 11.801 | 18.966 | 86.580 | 42.921 | 58.938 | 18.667 | 9.789 | 9.651 |
| *N* | | 566 | | | 2983 | | | 445 | |

*Note:* This table reports the regression result of the three Private ownership sub-samples according to different shareholding percentage. The dependent variables are cash dividends per share (CDPS), cash-dividend-to-earnings (CDPS/Earnings) and cash-dividend-to-sales (CDPS/Sales) in Panel A, and IA-cash dividends per share (IA-CDPS), IA-cash-dividend-to-earnings (IA-CDPS/Earnings) and IA-cash-dividend-to-sales (IA-CDPS/Sales) in Panel B respectively. The independent variables are: (1) STATE, state ownership; (2) PRIVATE, private ownership; (3) T10, ownership concentration; (4) SIZE, firm size; (5) DEBT, capital structure; (6) LCASH, cash balance; (7) INVEST, investment opportunities; (8) LTIME, listing time; (9) ROA, return on assets; (10) PCDPS, previous cash dividends per share; (11) PSDPS, previous stock dividends per share; (12) FOREIGN, foreign ownership. *T*-statistics are placed in parentheses.

*Significance at the 10% level (two-tailed).

**Significance at the 5% level (two-tailed).

***Significance at the 1% level (two-tailed).

***Table 11.*** OLS Regression Results for Cash Dividends – Private Ownership.

Panel A

| | [0%, 20%) | | | [20%, 50%) | | | [50%, 100%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | SDPS | SD/Earnings | SD/Sales | SDPS | SD/Earnings | SD/Sales | SDPS | SD/Earnings | SD/Sales |
| STATE | 0.024 | 0.021 | 0.035 | 0.001 | −0.002 | −0.005 | −0.132 | −0.124 | −0.141 |
| | (0.504) | (0.439) | (0.728) | (0.053) | (−0.105) | (−0.244) | (−2.813)*** | (−2.621)*** | (−3.026)*** |
| PRIVATE | −0.033 | −0.047 | 0.011 | 0.020 | 0.022 | 0.034 | 0.158 | 0.158 | 0.169 |
| | (0.755) | (−1.071) | (0.252) | (0.960) | (1.022) | (1.585) | (2.696)*** | (2.677)*** | (2.911)*** |
| T10 | −0.111 | −0.123 | −0.111 | 0.012 | 0.014 | 0.021 | 0.065 | 0.076 | 0.061 |
| | (−2.540)*** | (−2.814)*** | (−2.516)*** | (0.556) | (0.641) | (0.979) | (1.083) | (1.262) | (1.017) |
| SIZE | 0.014 | −0.001 | 0.032 | −0.049 | −0.065 | −0.050 | 0.026 | 0.014 | 0.018 |
| | (0.235) | (−0.021) | (0.516) | (−1.914)* | (−2.556)*** | (−1.975)** | (0.396) | (0.209) | (0.281) |
| DEBT | 0.084 | 0.010 | −0.001 | 0.052 | 0.037 | 0.024 | 0.008 | 0.008 | −0.014 |
| | (1.708)* | (0.210) | (−0.017) | (2.418)** | (1.691)* | (1.084) | (0.160) | (0.147) | (−0.264) |
| LCASH | −0.045 | −0.048 | −0.052 | 0.010 | 0.011 | −0.005 | 0.042 | 0.031 | 0.042 |
| | (−0.725) | (−0.780) | (−0.833) | (0.375) | (0.427) | (−0.199) | (0.612) | (0.446) | (0.609) |
| INVEST | 0.133 | 0.137 | 0.096 | 0.137 | 0.136 | 0.133 | 0.141 | 0.135 | 0.154 |
| | (2.773)*** | (2.829)*** | (1.987)** | (6.734)*** | (6.619)*** | (6.500)*** | (2.465)** | (2.345)** | (2.711)*** |
| LTIME | 0.022 | 0.039 | 0.032 | 0.005 | −0.001 | 0.009 | −0.036 | −0.027 | −0.030 |
| | (0.479) | (0.849) | (0.689) | (0.247) | (−0.049) | (0.482) | (−0.769) | (−0.579) | (−0.651) |
| ROA | 0.073 | −0.010 | 0.033 | 0.195 | 0.154 | 0.177 | 0.282 | 0.263 | 0.259 |
| | (1.312) | (0.173) | (0.575) | (8.434)*** | (6.595)*** | (7.613)*** | (4.750)*** | (4.402)*** | (4.388)*** |
| PCDPS | 0.039 | 0.029 | −0.012 | −0.030 | −0.041 | −0.040 | −0.145 | −0.138 | −0.160 |
| | (0.791) | (0.569) | (−0.229) | (−1.521) | (−2.101)** | (−2.023)** | (−2.968)*** | (−2.802)*** | (−3.291)*** |
| PSDPS | 0.062 | 0.024 | 0.044 | 0.000 | −0.009 | −0.004 | −0.048 | −0.036 | −0.029 |
| | (1.378) | (0.518) | (0.967) | (−0.005) | (−0.464) | (−0.203) | (−1.052) | (−0.782) | (−0.643) |
| FOREIGN | 0.066 | 0.034 | 0.050 | 0.028 | 0.018 | 0.033 | 0.036 | −0.058 | 0.031 |
| | (1.438) | (0.743) | (1.071) | (1.529) | (0.956) | (1.808)* | (0.799) | (−1.282) | (0.688) |
| Adj-$R^2$ | 0.036 | 0.021 | 0.013 | 0.062 | 0.048 | 0.055 | 0.166 | 0.153 | 0.176 |
| *F* | 2.764 | 2.013 | 1.635 | 17.548 | 13.513 | 15.591 | 8.331 | 7.647 | 8.886 |

Panel B

| | [0%, 20%) | | | [20%, 50%) | | | [50%, 100%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | IA-SDPS | IA-SD/Earnings | IA-SD/Sales | IA-SDPS | IA-SD/Earnings | IA-SD/Sales | IA-SDPS | IA-SD/Earnings | IA-SD/Sales |
| STATE | 0.029 | 0.041 | 0.032 | 0.004 | 0.000 | −0.001 | −0.113 | −0.110 | −0.121 |
| | (0.615) | (0.871) | (0.680) | (0.203) | (−0.003) | (−0.037) | (−2.387)** | (−2.300)*** | (−2.588)*** |
| PRIVATE | 0.006 | −0.022 | 0.012 | 0.020 | 0.021 | 0.034 | 0.178 | 0.170 | 0.189 |
| | (0.132) | (−0.503) | (0.278) | (0.954) | (0.990) | (1.577) | (3.009)*** | (2.874)*** | (3.237)*** |
| T10 | −0.083 | −0.107 | −0.101 | 0.018 | 0.019 | 0.016 | 0.091 | 0.091 | 0.079 |
| | (−1.915)* | (−2.449)*** | (−2.292)** | (0.832) | (0.847) | (0.746) | (1.515) | (1.506) | (1.319) |
| SIZE | −0.012 | −0.024 | 0.000 | −0.042 | −0.061 | −0.054 | 0.033 | 0.025 | 0.025 |
| | (−0.204) | (−0.402) | (0.005) | (−1.630)* | (−2.359)** | (−2.124)** | (0.500) | (0.376) | (0.378) |
| DEBT | 0.092 | 0.007 | −0.001 | 0.054 | 0.036 | 0.021 | −0.011 | −0.007 | −0.020 |
| | (1.882)* | (0.139) | (−0.030) | (2.506)*** | (1.664)* | (0.944) | (−0.209) | (−0.130) | (−0.389) |
| LCASH | −0.018 | −0.025 | −0.016 | 0.007 | 0.009 | −0.005 | 0.025 | 0.010 | 0.015 |
| | (−0.292) | (−0.410) | (−0.256) | (0.253) | (0.342) | (−0.178) | (0.359) | (0.143) | (0.214) |
| INVEST | 0.178 | 0.180 | 0.117 | 0.133 | 0.133 | 0.136 | 0.166 | 0.158 | 0.180 |
| | (3.735)*** | (3.743)*** | (2.417)** | (6.534)*** | (6.474)*** | (6.644)*** | (2.899)*** | (2.742)*** | (3.175)*** |
| LTIME | 0.023 | 0.033 | 0.033 | 0.007 | 0.002 | 0.007 | −0.019 | −0.008 | −0.021 |
| | (0.512) | (0.721) | (0.717) | (0.363) | (0.092) | (0.354) | (−0.401) | (−0.169) | (−0.455) |
| ROA | 0.080 | −0.003 | 0.039 | 0.194 | 0.150 | 0.172 | 0.246 | 0.227 | 0.235 |
| | (1.433) | (−0.058) | (0.685) | (8.381)*** | (6.424)*** | (7.403)*** | (4.131)*** | (3.769)*** | (3.977)*** |
| PCDPS | 0.037 | 0.033 | −0.009 | −0.031 | −0.045 | −0.037 | −0.148 | −0.135 | −0.155 |
| | (0.756) | (0.665) | (−0.172) | (−1.587) | (−2.273)** | (−1.877)* | (−3.005)*** | (−2.730)*** | (−3.167)*** |
| PSDPS | 0.057 | 0.003 | 0.036 | 0.001 | −0.005 | −0.006 | −0.041 | −0.022 | −0.022 |
| | (1.282) | (0.072) | (0.790) | (0.040) | (−0.282) | (−0.336) | (−0.899) | (−0.481) | (−0.476) |
| FOREIGN | 0.060 | 0.033 | 0.041 | 0.029 | 0.019 | 0.032 | 0.035 | −0.061 | 0.030 |
| | (1.326) | (0.714) | (0.888) | (1.582) | (1.031) | (1.759)* | (0.778) | (−1.336) | (0.661) |
| Adj-$R^2$ | 0.050 | 0.028 | 0.015 | 0.060 | 0.046 | 0.055 | 0.158 | 0.144 | 0.171 |
| *F* | 3.467 | 2.332 | 1.734 | 16.867 | 12.850 | 15.386 | 7.931 | 7.221 | 8.638 |
| *N* | | 566 | | | 2983 | | | 445 | |

*Note:* This table reports the regression result of the three Private ownership sub-samples according to different shareholding percentage. The dependent variables are stock dividends per share (SDPS), stock-dividend-to-earnings (SDPS/Earnings) and stock-dividend-to-sales (SDPS/Sales) in Panel A, and IA-stock dividends per share (IA-SDPS), IA-stock-dividend-to-earnings (IA-SDPS/Earnings) and IA-stock-dividend-to-sales (IA-SDPS/Sales) in Panel B respectively. The independent variables are: (1) STATE, state ownership; (2) PRIVATE, private ownership; (3) T10, ownership concentration; (4) SIZE, firm size; (5) DEBT, capital structure; (6) LCASH, cash balance; (7) INVEST, investment opportunities; (8) LTIME, listing time; (9) ROA, return on assets; (10) PCDPS, previous cash dividends per share; (11) PSDPS, previous stock dividends per share; and (12) FOREIGN, foreign ownership. The stock dividends data in the sample include stock dividends from distributable earnings and/or capital surplus. We also use pooled stock dividends only from distributable earnings and obtain qualitatively similar results.

*Significance at the 10% level (two-tailed).

**Significance at the 5% level (two-tailed).

***Significance at the 1% level (two-tailed).

Chinese listed firms exert some influence over the level of cash dividend payout. Interestingly, firm size has different influences on dividend rates. Tables 6, 8, and 10 show significantly positive correlations between firm size and cash dividend rates. In contrast, Tables 7, 9, and 11 show that firm size has a significantly negative effect on stock dividend rates.

We also do not find any evidence that investment opportunities have any negative effects on cash dividend rates. Unexpectedly, we observe a significantly positive relation between investment opportunities and stock dividend payout rates (see Tables 7, 9, and 11). The results show that firms with good investment opportunities are more likely to pay more stock dividends. As we know, cash dividend payment means real outflow of cash from firms, and stock dividend payout just means transferring the par value of the newly issued shares out of retained earnings into capital stock (thus no real cash outflows from firms). Firms with greater investment opportunities have lower cash flows, and they need channels to raise money to fund their investment. In China, firms that paid large stock dividends usually planned to issues new equity shares in the near future (Yuan, 1999), and the share prices of these firms began to rise a month before and a week after the announcement of large stock dividend payout (Wei, 1998). Therefore, firms with more investment opportunities can raise more cash from the market through issuing new equity shares after paying stock dividends.

Tables 6-11 show that there is a highly significantly positive relation between level of cash and stock dividend payout. The coefficients for firm performance ROA are always statistically significant at the 1% level, whether the dependent variables are cash dividend-based or stock dividend-based. We also find that the longer the listing time, the lower level the cash dividend payout. Finally, we observe that the cash dividend rates in year $t-1$ have a significantly positive effect on cash dividend rates in year $t$.

### *5.2. Logit Regressions*

We conduct further analysis to determine the relation between level of dividend payout and ownership structure. Following Fama and French (2001), we use logit regressions to examine the relation.

Table 12 presents the results of logit regressions using total dividends, cash dividends, and stock dividends respectively. We find that firms with more state ownership are more likely to pay dividends, in particular, more likely to pay cash dividends. Table 12 shows that there is a significantly positive relation between stock dividend payout level and private ownership. Thus, we conclude that the different types of ownership in China have different effects on dividend policy.

***Table 12.*** Logit Regression Results.

| Variables | Dividends | | Cash Dividends | | Stock Dividends | |
|---|---|---|---|---|---|---|
| | Coefficient | *z*-Statistic | Coefficient | *z*-Statistic | Coefficient | *z*-Statistic |
| STATE | 0.251 | 1.810* | 0.289 | 2.111** | 0.000 | −0.001 |
| PRIVATE | −0.059 | −0.355 | −0.072 | −0.432 | 0.248 | 1.821* |
| T10 | 0.015 | 0.086 | −0.266 | −1.572 | −0.191 | −0.962 |
| SIZE | 0.361 | 1.926** | 0.269 | 1.418 | −0.100 | −0.431 |
| DEBT | −0.154 | −1.004 | 0.296 | 1.879* | 0.965 | 4.867*** |
| LCASH | 1.212 | 6.429*** | 0.938 | 4.915*** | 0.661 | 2.797*** |
| INVEST | 0.632 | 4.347*** | 0.770 | 5.287*** | 1.135 | 6.260*** |
| LTIME | −0.325 | −2.301** | −0.292 | −2.067** | −0.485 | −2.833*** |
| ROA | 2.650 | 15.663*** | 3.122 | 18.035*** | 3.639 | 16.224*** |
| PCDPS | 1.173 | 7.221*** | 1.230 | 7.812*** | 0.577 | 3.176*** |
| PSDPS | −0.474 | −2.662*** | −0.498 | −2.823*** | −0.255 | −1.256 |
| FOREIGN | 0.591 | 1.743* | 0.289 | 0.851 | 0.870 | 2.234** |
| Log likelihood | −2226.881 | | −2218.170 | | −1626.876 | |
| McFadden $R^2$ | 0.189 | | 0.193 | | 0.165 | |

*Note:* This table reports the logit regression results. We estimate logit regressions for the pooled full sample consisting of 3,994 firms listed in Shanghai Stock Exchange and Shenzhen Stock Exchange for the period 1995−2001. The dependent variable is 1.0 in year *t* if a firm pays dividends, cash dividends or stock dividends, 0.0 otherwise. The independent variables are: (1) STATE, state ownership; (2) PRIVATE, private ownership; (3) T10, ownership concentration; (4) SIZE, firm size; (5) DEBT, capital structure; (6) LCASH, cash balance; (7) INVEST, investment opportunities; (8) LTIME, listing time; (9) ROA, return on assets; (10) PCDPS, previous cash dividends per share; (11) PSDPS, previous stock dividends per share; and (12) FOREIGN, foreign ownership. The stock dividends data in the sample include stock dividends from distributable earnings and/or capital surplus. We also use pooled stock dividends only from distributable earnings and obtain qualitatively similar results.

*Significance at the 10% level (two-tailed).

**Significance at the 5% level (two-tailed).

***Significance at the 1% level (two-tailed).

## 6. SENSITIVITY TESTS

In this section, we perform several robustness checks on our results. One possibility is that our proxy for profitability is weak if there are size effects. To examine this possibility, we replace ROA with return on equity (ROE), where return is earnings after extraordinary items, subsidies from government, and income tax. However, our results are unaffected.

Similarly, our proxy for ownership concentration may be weak if there exists significant difference in shareholding of the top ten shareholders in the sample firms. Therefore, we replace the shareholding percentage of top ten shareholders

(T10) with the shareholding percentage of top five shareholders (T5) and top three shareholders (T3) respectively. Again, our results are not qualitatively affected.

A further concern about our results is the inherent crudeness in measuring investment opportunities in terms of past total asset growth. To check this possibility, we re-estimate our results using growth rates of sales (IO-sales), earnings (IO-Earnings), and fixed assets (IO-FA). Our results hold using these alternatives variables.

## 7. CONCLUSIONS

This paper uses a sample of firms from China to shed light on dividend payout behavior in this emerging market. We have extended the U.S. based dividend policy literature in two ways. First, the analysis has been extended to China where there are important institutional differences, as compared to the U.S., in terms of corporate governance mechanisms and corporate dividend payment behavior. Second, the analysis not only examines cash dividends, but also tests the relation between stock dividends and ownership structure.

Our results suggest that the ownership structure approach is highly relevant to an understanding of corporate dividend policy in China. More precisely, we find that there is a significantly positive correlation between state ownership and cash dividend payment, and a significantly positive correlation between private ownership and stock dividend payment. We also find that the relation between the dividend payment rate and ownership structure is nonlinear; the higher the proportion of state ownership, the higher the cash dividend rate and the higher the proportion of private ownership, the higher the stock dividend rate. We conclude that the managers of Chinese listed companies are likely to cater for the preferences of different shareholders.

In our analysis, we find that larger firms are more likely to pay cash dividends, but less likely to pay stock dividends. And firms' debt significantly restricts cash dividend payout. Firms with better investment opportunities are less likely to pay cash dividends, but more likely to pay stock dividends. More profitable firms are more likely to pay cash dividends and stock dividends. The longer the listing time, the lower probability to pay cash dividends.

Overall, this study increases our understanding of the relation between ownership structure and dividend payment policy. Our results also corroborate the findings of DeAngelo and DeAngelo (2000) that dividend payment policy is not a matter of indifference, as argued by Miller and Modigliani (1961), but rather is sometimes tailored to meet the preferences of the controlling stockholders.

## NOTES

1. Such shares owned by legal persons do not include shares directly purchased from the stock exchanges.
2. In Brazil, Chile, Colombia, Greece, and Venezuela, dividends are mandatory (La Porta et al., 2000).
3. Interestingly, DeAngelo et al. (2002) find evidence that dividends are not disappearing in the U.S. Rather, they report that dividends paid by industrial firms actually increase over 1978–2000, both in nominal and real terms.
4. See "Small Investors Continue to Give up Control of Stocks," The Wall Street Journal, May 11, 1992, C1.
5. Listed companies in China were required to publish a cash flow statement just from 1999. Thus we cannot use the DPS/cash flow ratio in this paper.
6. The 20% cutoff has been used in earlier studies by La Porta et al. (1999), Claessens et al. (2000) and Faccio et al. (2001).
7. Fama and French (2001) use another proxy, a firm's market-to-book ratio, for investment opportunities. As noted above, only one-third equity shares in Chinese listed firms are publicly tradable in the stock market. If we use total capital as shares outstanding to measure market values of a firm, the firm's size will be overestimated. If we use tradable shares as shares outstanding to measure market values of a firm, the firm's size will be underestimated. Therefore, we think that asset growth rate is a better proxy for investment opportunities in Chinese firms at present.
8. Kane and Meade (1998) demonstrate that rank transformations have advantages of preserving comparative information, avoiding arbitrary sample trimming, and improving fit.

## ACKNOWLEDGMENTS

We gratefully acknowledge the helpful comments of Jevons Lee, Kevin Chen, T. J. Wong, Charles J. P. Chen, Xijia, Su, Joe Hong Zhou, Naige Yang, and seminar participants at Shanghai University of Finance and Economics, Tsinghua University, Peking University, Fudan University, Zhongshang University, the 7th Asia-Pacific Finance Association Annual Conference, and the 12th Asia-Pacific International Accounting Conference. The authors appreciate the financial support for this project from the Chinese Accounting, Finance, and Business Research Unit at Cardiff Business School.

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# WHAT DETERMINES CORPORATE OWNERSHIP CONCENTRATION AROUND THE WORLD?

Baozhi Qu

## ABSTRACT

*This paper extends Demsetz and Lehn's (1985) results and studies the determinants of corporate ownership concentration across countries in light of Qu's (2004) model using a newly constructed dataset of 1,070 publicly traded stock companies from 45 countries. Estimation results show that ownership concentration varies systematically with respect to certain firm-specific economic variables and country characteristics in ways that are consistent with value maximization and predictions of agency theory. After controlling for firm-level determinants such as size, auditing practice, return rate, etc., ownership concentration is significantly lower in countries with more developed stock market and more effective investor protection.*

## 1. INTRODUCTION

Ownership structure is a primary element in determining governance arrangements in a firm. Corporations can have concentrated ownership by active owners or dispersed ownership through domestic and international markets. In some countries like the U.S. and the U.K., firms with dispersed ownership structure are more common than in other countries. Why does the ownership structure differ across firms

**Corporate Governance**
**Advances in Financial Economics, Volume 9, 221–246**

**ISSN: 1569-3732/doi:10.1016/S1569-3732(04)09009-7**

and across countries? What are the key elements that determine corporate ownership concentration? These are the questions that this paper attempts to answer.

It has been argued since Demsetz and Lehn (1985) that ownership concentration in a firm is endogenous depending on various firm-specific variables such as firm size, instability of the firm's accounting profit rate, and whether or not the firm is in certain industries. They propose that the structure of corporate ownership varies systematically in ways that are consistent with value maximization. However, another study by Himmelberg et al. (1999) argues that managerial ownership is explained by key variables in the contracting environment in ways consistent with the predictions of principal-agent models. There has been no consensus in the literature on how ownership structure is endogenized in a firm.

A recent working paper by Qu (2004) proposes another explanation about the endogeneity of corporate ownership concentration. In that paper, a model based on the agency theory is developed to study tunneling behavior, defined as the transfer of assets and profits out of a firm for the benefit of its controlling shareholders (controllers). Qu (2004) argues that ownership concentration is determined as investors try to maximize the expected firm value by minimizing the level of tunneling. In this context, corporate ownership concentration is endogenized in ways that are consistent with both value maximization and the agency theory.

In light of this new development of theory, the present study investigates empirically the determinants of corporate ownership concentration around the world. I first develop hypotheses about the determinants of corporate ownership concentration that are consistent with Qu's (2004) model and argue that different forms of ownership are adapted to various firm-specific variables and certain country-specific variables. I then examine the conjectures about the impact of these two groups of variables on corporate ownership concentration empirically using a newly constructed dataset of 1070 publicly traded stock companies from 45 countries around the world.

Empirical findings in this paper generally confirm Qu's (2004) model predictions. OLS and IV estimations find statistically significant relations between ownership concentration and various firm-specific economic variables including firm size, the accounting profit rate, the volatility of the profit rate, the firm's auditing practice, which industry the firm is in, and whether or not preferred stocks are issued extensively. After controlling for these firm-level determinants, the estimation results strongly support the hypothesis that corporate ownership concentration varies systematically across countries depending on certain country characteristics, among which the development of stock market and the effectiveness of legal protection on investor rights are important ones. Specifically, it is found in this paper that *ceteris paribus*, firms are less (more) likely to have high ownership concentration in countries that have more (less) advanced stock

markets or provide more (less) effective investor protection. These results are consistent with La Porta et al.'s (1999) idea that ownership concentration is a substitute for legal institutions as a mechanism to protect investor rights.

The current work differs from past work in a number of ways. Unlike the studies that try to explain managerial ownership (such as Himmelberg et al., 1999; Himmelberg & Hubbard, 2001), in this paper, I argue that it is critical to make a distinction between ownership concentration and managerial ownership. Ownership concentration measures how a firm's ownership is concentrated on its big shareholders, while managerial ownership is only an indictor of the interests of a potential subset of the controllers (the firm's officers and directors). Since big shareholders either participate in the management directly or provide significant monitoring to the management, ownership concentration is a better indictor of the firm controllers' interest in the firm than managerial ownership.[1] Therefore, for the purpose of revealing a firm's governance structure, ownership concentration is more relevant than managerial ownership.[2] From this perspective, this paper follows the vein of Demsetz and Lehn (1985) and attempts to explain corporate ownership concentration rather than managerial ownership.

On the basis of Demsetz and Lehn's (1985) results, this paper expands the conventional wisdom about the determinants of corporate ownership concentration within one country to the multi-country context with country characteristics being accounted for. Some of the findings in this paper are consistent with Demsetz and Lehn's (1985) results. For example, Demsetz and Lehn (1985) find that ownership concentration is relatively low in firms with large size using a sample of 511 big U.S. corporations. Similar relation is also detected using the newly collected international dataset. Some of the findings in this paper are in contrast to Demsetz and Lehn's (1985) results. For instance, the accounting rate of return is found to be positively related to ownership concentration, and the instability of the profit rate has a negative relation with ownership concentration, while Demsetz and Lehn (1985) report the opposite. In addition, I take advantage of the newly available data sources since Demsetz and Lehn (1985) and study a number of firm-level and country-level determinants that are not examined in Demsetz and Lehn's (1985) regression analysis. For example, this paper documents a significant positive relation between the ratio of preferred stocks in total capital and ownership concentration. It also investigates the relation between corporate ownership concentration and certain country characteristics such as the development of its stock market and how effectively investors' rights are being protected in a country.

The rest of the paper is organized as follows. Section 2 develops hypotheses about the determinants of corporate ownership concentration in light of Qu's (2004) theoretical findings. Section 3 describes the variables included in the

regression analysis and the sources of data. Section 4 reports the main estimation results. Section 5 checks the robustness of the main results, and Section 6 concludes.

## 2. DETERMINANTS OF CORPORATE OWNERSHIP CONCENTRATION

A recent working paper by Qu (2004) argues that corporate ownership concentration is endogenized in ways that are consistent with both value maximization (Demsetz & Lehn, 1985) and predictions of the agency theory (Himmelberg et al., 1999). Ownership concentration on the firm's controllers has two basic effects. One effect is that the controllers' interests are now aligned to the firm value and this makes the controllers' interests consistent with other investors'. This effect is named the alignment effect by Qu (2004). While alignment effect helps to protect investors from agency problem, the other effect, called risk-aversion effect, works on the opposite direction. To maintain a controlling stake of the firm's equity, the controllers' wealth is not as diversified as other investors' and the controllers have to bear higher risk related to the firm. This makes the firm controllers more risk-averse than other investors. Due to this risk-averseness, the controllers may engage in tunneling[3] just trying to obtain a risk premium. From this perspective, ownership concentration on the firm's controllers provides an incentive for them to tunnel from the minority shareholders and makes the controllers' interests distant from other investors'. Both effects increase with ownership concentration. Since the risk-aversion effect grows faster than the alignment effect as ownership concentration rises, there is an optimal ownership concentration that equates the marginal alignment effect and the marginal risk-aversion effect, and consequently, maximizes the expected firm value by minimizing tunneling.

The existence of the financial asset market ensures that the optimal ownership concentration is the equilibrium outcome as the result of the interactions between the firm controllers and the large group of small shareholders in the market. Whenever a firm's ownership concentration deviates from its optimal level so that the firm's expected value is not maximized, there is a chance for other investors to buy out the firm and make a profit through the increased financial assets value of the firm. In other words, assuming that the financial market is efficient and such chances to make money through financial transactions are exhausted, corporate ownership concentration in equilibrium is at its optimal level. Therefore, the endogeneity of ownership concentration is consistent with value maximization, as well as the agency theory. A sketch of Qu's (2004) model is included in the Appendix to this paper. Further detail about the model can be found in Qu (2004).

The above discussion suggests a general rule to identify the determinants of corporate ownership concentration: any variable that affects the marginal alignment effect and/or the marginal risk-aversion effect will have an impact on corporate ownership concentration. In this paper, these variables are categorized into two groups: firm-specific variables and country-specific variables. Their expected relations to corporate ownership concentration will be discussed separately as follows.

### *2.1. Firm-Level Determinants*

Qu (2004) proposes the following variables on the firm level that will possibly affect a firm's ownership concentration: firm size, rate of return, instability of the rate of return, and the controller's risk attitude. While it is difficult to measure a person's risk attitude empirically, the other three variables are measurable.

*Size of the firm*. Big size makes it difficult for the controller to maintain a controlling stake of the firm and thus his/her wealth has to be considerably entrenched in the firm. Therefore, as firm size increases, the marginal risk-aversion effect increases in relative to the marginal alignment effect (in Fig. 3 of the Appendix, MRE curve shifts upward). This lowers the equilibrium ownership concentration. In other words, there exists a negative relation between firm size and ownership concentration.

*Firm's rate of return*. Higher profit rate makes it more effective to align the controller's interest to the firm by ownership stake. The marginal alignment effect increases (MAE curve shifts upward in Fig. 3) which results in a higher ownership concentration. Therefore, a positive relation between these two variables is expected. Previous studies on this relation yield mixed results (see Demsetz & Lehn, 1985; Himmelberg et al., 1999 among others).

*Instability of the firm's rate of return*. As the instability of a firm's rate of return increases, the marginal risk-aversion effect becomes stronger in relative to the marginal alignment effect (MRE curve shifts upward in relative to MAE curve in Fig. 3). As a result, the equilibrium ownership concentration decreases. I will test whether the expected negative relation does exist in this empirical study. Past work again generates mixed results (for example, Demsetz & Lehn, 1985 document a positive relation, while Himmelberg et al., 1999 report a negative relation).

In addition, there are some other firm-specific variables that seem to be important enough to merit investigation in light of Qu's (2004) model.

*Firm-level investor protection*. Investor protection should be interpreted as a parameter that varies not only across countries, but also across firms, as proposed by Himmelberg et al. (2001). For example, in firms under better auditing,

controllers are better monitored, and the need to align the controllers' interest becomes less important (MAE curve shifts downward in relative to MRE curve in Fig. 3). This suggests a negative relation between the quality of the firm's auditing and ownership concentration. However, such argument is only valid under the assumption that the firm's auditing practice is an exogenous variable. The alternative assumption would be that the auditing practice in a firm, like the corporate ownership concentration, is a choice variable as investors try to maximize the firm value. Under this alternative assumption, a positive relation between these two variables is likely to exist. I will evaluate these two different hypotheses in this study.

*Industry fixed effects*. In regulated industries such as utility and financial industry, the existence of special regulatory rules could provide extra protection on investor rights compared to other industries. For firms in these industries, the need to align the controllers' interests becomes relatively unimportant (MAE curve shifts downward in relative to MRE curve in Fig. 3). Therefore, corporate ownership concentration is relatively low in industries with special regulatory rules. Past work suggests several such industries. For example, Demsetz and Lehn (1985) find that in regulated utility and financial industries of the U.S., ownership concentration tends to be low. In this paper, a cross-country sample is used to test the existence of industry fixed effects on ownership concentration.

*Different forms of stock ownership*. Although not very common in the U.S., preferred stocks are issued to investors as an alternative to common stocks in some firms. The issuance of preferred stocks usually allows big holders of a firm's common stocks to maintain their control over the firm. If preferred stock is a significant source of a firm's capital, ownership concentration within the group of common stockholders is likely to be high.

*Cost of debt financing*. It has been proposed in the literature that if debt financing is less costly for a firm, the firm may rely less on equity financing and more on debt financing. As a result, the firm's ownership may be less diversified and the controller may hold a higher stake of the firm's equity. This hypothesis of negative relation between these two variables will be tested in this paper.

### *2.2. Country-Level Determinants*

Certain country-specific variables that characterize the environment outside a firm have great impacts on the governance arrangements within the firm, as reflected by its ownership concentration. Understandably, one can give a long list of such variables. In light of Qu's (2004) model, I focus on two aspects of a firm's environment in this study: the legal environment, and the development of stock market.

*Legal environment*. It has been argued since La Porta et al. (1998a) that legal protection on investor rights varies significantly across countries. For example, English common law countries are generally believed to provide more effective investor protection than French civil law countries. If the legal institutions in a firm's environment protect investor rights well, the need to align the controllers' interests through ownership arrangement becomes relatively unimportant (the MAE curve shifts downward in relative to MRE curve in Fig. 3). This implies a negative relation between ownership concentration and the effectiveness of legal protection on investor rights in a country. Another way to derive this hypothesis is that since legal protection on investor rights and ownership concentration are two alternative ways to protect investors from agency problem, the relation between these two variables is negative. This study will test whether legal protection on investor rights is an empirically significant explanatory variable of ownership concentration in firms around the world, and whether this relation is negative as expected.

*Development of the stock market*. The disciplinary role played by the financial market in the area of corporate governance has long been recognized in the literature. A well-developed stock market is important for the corporate ownership concentration to be optimized. It keeps investors well informed and increases ownership diversification. Therefore, firms in a country with well developed stock market are likely to have low ownership concentration, i.e. a negative relation between these two variables is expected.

Equation (1) gives the primary reduced-form estimation model used in this study. Quadratic forms of variables are included to take care of possible nonlinearities. In addition to this primary model, various alternative model specifications and variable measurements are tested in the IV estimation and robustness checks.

$$\begin{aligned} C5_{ij} = {} & \beta_0 + \beta_1 \mathrm{Duti}_{ij} + \beta_2 \mathrm{Dbank}_{ij} + \beta_3 \mathrm{SIZE}_{ij} + \beta_4 \mathrm{SQU\_SIZE}_{ij} \\ & + \beta_5 \mathrm{RETURN}_{ij} + \beta_6 \mathrm{STDEV}_{ij} + \beta_7 \mathrm{AUDIT}_{ij} + \frac{\beta_8 \mathrm{PRE}}{\mathrm{CAP}_{ij}} \\ & + \beta_9 \mathrm{LAW\_BOOK}_i + \beta_{10} \mathrm{LEGALITY}_i + \beta_{11} \mathrm{ADE\_STOCK}_i + \varepsilon_{ij} \end{aligned} \tag{1}$$

βs: coefficients to be estimated; *C*5: measure of corporate ownership concentration; Duti: dummy variable for utility industry; Dbank: dummy variable for banking sector; SIZE: firm size; RETURN: the firm's expected rate of return; STDEV: instability of the firm's rate of return; AUDIT: firm's auditing practice; PRE/CAP: ratio of preferred stocks in the firm's total capital; LAW_BOOK: quality of laws on book to protect investor rights; LEGALITY: effectiveness of law

enforcement; ADE_STOCK: adequacy of stock market; SQU_∼: quadratic form of variables; Subscript *i* : country index, from 1 to 45; Subscript *j* : firm index, from 1 to up to 30; $\varepsilon$: i.i.d. error term, taking care of all other unexplained variables.

## 3. DATA AND MEASUREMENTS

This empirical study is based on a newly constructed dataset that includes 1070 publicly traded stock companies from 45 countries (regions) in a 10-year period (1992–2002). Almost every major economy in the world (excluding mainland China,[4] Russia and other transitional economies[5]) is sampled in the data set. Table 1 gives the sample distribution across countries.

As a rule, the firm-level financial information is taken from the Disclosure *Worldscope* database. This database is updated monthly and it provides detailed firm-level financial information about publicly traded stock companies around the world in a 10-year period. The most recently available annual data (1992–2002) are used to construct my dataset. Only firms that are currently active and firms that have been in business for the past ten years are included in the dataset.[6] In addition, the following types of firms are excluded from the data set:

- Firms that have been acquired by other firms in the past ten years;
- Firms that have been involved in major mergers in the past ten years;
- Firms that are state owned or have the state as one of the major shareholders;
- Firms that have less than six yearly financial reports for the past ten years in *Worldscope*;
- Firms that do not report shareholder information.

In each country, up to 30 firms of different sizes are sampled. Due to data availability, some developing countries have less than 30 firms in the sample (Table 1). Since firm size varies significantly across countries, the following rule of sampling is applied: for countries with plenty of companies available in *Worldscope*, 10 large companies (in order of their current common equity value), 10 medium-sized companies (with common equity at around U.S.$ 500 million) and 10 small companies (in order of their current common equity value) are randomly sampled; for countries with relatively limited number of firms in *Worldscope*, I generally go through each of their firms included in *Worldscope*. During the sampling process, only about 10% of firms whose financial reports I went through provide sufficient information for the purpose of this research. Therefore, while the size of my data set accounts for about 5% of the firms from the 45 countries in *Worldscope*, the sampling process covers up to 10,700 firms, roughly 50% of all the firms from those countries in the database.

***Table 1.*** Country Specific Variables.

| Country (or Region) Name | Number of Firms in the Sample | Adequacy of Financing to Companies Through Stock Market | Quality of Laws on Book | Legality |
|---|---|---|---|---|
| ARGENTINA | 7 | 2.78 | 4 | 12.34 |
| AUSTRALIA | 27 | 7.96 | 4 | 20.44 |
| AUSTRIA | 30 | 5.27 | 2 | 20.76 |
| BELGIUM | 30 | 6.55 | 0 | 20.82 |
| BRAZIL | 30 | 4.34 | 3 | 14.09 |
| CANADA | 30 | 7.31 | 5 | 21.13 |
| CHILE | 30 | 5.63 | 5 | 14.7 |
| COLOMBIA | 4 | 2.73 | 3 | 11.58 |
| DENMARK | 30 | 6.32 | 2 | 21.55 |
| EGYPT | 2 | N/A | 2 | 11.34 |
| FINLAND | 30 | 8 | 3 | 21.49 |
| FRANCE | 30 | 7.42 | 3 | 19.67 |
| GERMANY | 30 | 8.47 | 1 | 20.44 |
| GREECE | 30 | 7.96 | 2 | 14.91 |
| HONG KONG | 30 | 8.58 | 5 | 19.11 |
| INDIA | 30 | 6.05 | 5 | 12.8 |
| INDONESIA | 30 | 5.51 | 2 | 9.16 |
| IRELAND | 30 | 6.17 | 4 | 18.92 |
| ISRAEL | 15 | 6.35 | 3 | 16.54 |
| ITALY | 30 | 5.39 | 1 | 17.23 |
| JAPAN | 30 | 5.9 | 4 | 20.36 |
| JORDAN | 3 | N/A | 1 | 12.54 |
| MALAYSIA | 30 | 6.35 | 4 | 16.67 |
| MEXICO | 14 | 5.15 | 1 | 12.82 |
| NETHERLANDS | 30 | 8.63 | 2 | 21.67 |
| NEW ZEALAND | 29 | 6.98 | 4 | 21.55 |
| NORWAY | 30 | 7.13 | 4 | 21.78 |
| PAKISTAN | 10 | N/A | 5 | 8.98 |
| PERU | 8 | N/A | 3 | 10.1 |
| PHILIPPINES | 30 | 4.56 | 3 | 8.51 |
| PORTUGAL | 25 | 5.89 | 3 | 17.2 |
| SINGAPORE | 30 | 7.93 | 4 | 19.53 |
| SOUTH AFRICA | 30 | 6.8 | 5 | 14.51 |
| SOUTH KOREA | 29 | 6.63 | 2 | 14.23 |
| SPAIN | 30 | 6.46 | 4 | 17.13 |
| SRI LANKA | 13 | N/A | 3 | 10.4 |
| SWEDEN | 30 | 8.39 | 3 | 21.56 |
| SWITZERLAND | 30 | 7.76 | 2 | 21.91 |
| TAIWAN | 9 | 7.07 | 3 | 17.62 |
| THAILAND | 30 | 4.86 | 2 | 12.94 |
| TURKEY | 30 | 5.4 | 2 | 11.84 |
| U.K. | 30 | 6.94 | 5 | 20.41 |

***Table 1.*** (*Continued*)

| Country (or Region) Name | Number of Firms in the Sample | Adequacy of Financing to Companies Through Stock Market | Quality of Laws on Book | Legality |
|---|---|---|---|---|
| U.S. | 30 | 8.74 | 5 | 20.85 |
| VENEZUELA | 2 | 3.33 | 1 | 13.33 |
| ZIMBABWE | 3 | N/A | 3 | 11.59 |

All the firms in the data set are publicly traded stockholding companies. These companies are classified as industrial, bank, utility, transportation and other financial companies respectively, and their primary businesses spread in 387 different four-digit SIC industries. Table 2 presents the industry distribution of firms in the sample.

Measurements of variables are constructed in ways that are consistent with Qu's (2004) model and with common practice in the literature. Table 3 describes the variables used in this study. The dependent variable, *corporate ownership concentration*, is measured following Demsetz and Lehn (1985). *C*5 – percentage of shares controlled by top five shareholders – is used as the primary measurement. Demsetz and Lehn (1985) also use *C*20 and the Herfindahl index as alternative measures of ownership concentration. Since *Worldscope* only reports information about major shareholders of a firm and a 5% disclosure rule is usually applied in most of the countries, measurements of *C*20 and Herfindahl index can't be obtained. But since the correlations between these alternative measurements are likely to be high (Demsetz & Lehn, 1985), econometric findings using these alternative measures are possibly similar. Demsetz and Lehn (1985) apply a logistic transformation to *C*5 – LN(C5/(1-C5)) – in their regression analysis. I implement similar transformation when testing the robustness of my results. For the purpose of comparing my results to past work on managerial ownership, I

***Table 2.*** Industry Distribution of Firms in the Sample.

| Industry Classification | Number of Firms in the Sample |
|---|---|
| Industrial | 743 |
| Bank | 93 |
| Utility | 73 |
| Transportation | 44 |
| Other financial | 117 |
| Total number of firms | 1070 |
| Unique 4-digit SIC industries | 387 |

***Table 3.*** Variable Descriptions and Sources.

| Variable Name | Variable Description |
|---|---|
| *C*5 | Variable to measure ownership concentration in a firm. It is equal to the percentage of a firm's outstanding common stocks owned by the top five shareholders. Most countries have a 5% disclosure rule. So only shareholders who hold at least 5% of the firm's common stocks are included when calculating *C*5. For firms with less than 5 such big shareholders, only shares of those who do are counted. Source: *WorldScope* Database. |
| Dbank | Bank dummy, equal to 1 if the firm is a bank. Source: *WorldScope* Database. |
| Duti | Utility dummy, equal to 1 if the firm is a utility company. Source: *WorldScope* Database. |
| Dtran | Transportation dummy, equal to 1 if the firm is a transportation firm. Source: *WorldScope* Database. |
| Dother | Dummy of other financial firms, equal to 1 if the firm is classified as in other financial industries. Source: *WorldScope* Database. |
| AUDIT | Variable to measure a firm's auditing practice. It equals 2 if the firm's auditor is one of the "big six" auditing companies and if the firm's auditing report is qualified; 1 if one of the two conditions is met; 0 otherwise. Source: *WorldScope* Database. |
| SIZE | Firm size, measured by its common equity value (in thousand U.S.$). 10-year (1992–2002) average of the firm's common equity (SIZEa) is the primary measurement of this variable. An alternative measurement, SIZEc – current common equity value – is used in robustness checks. Source: *WorldScope* Database. |
| LOG-SIZE | The natural log of firm size. |
| RETURN | Accounting rate of return on equity. In the primary regression model, 10-year average of the firm's return on equity (RETURNe) is used. For the purpose of robustness check, the data set also contains information about the firm's average return on assets (RETURNa) in the past 10 years. Source: *WorldScope* Database. |
| STDEV | Instability of the firm's accounting profit rate, measured by the standard deviation of its annual accounting rates of return. In the primary regression model, standard deviation of return on equity (STDEVe) in the past 10 years is used. Information about the standard deviation of return on assets (STDEVa) is available and used for robustness check. Source: *WorldScope* Database. |
| PRE/CAP | Ratio of preferred stocks in the firm's total capital. Source: *WorldScope* Database. |
| INT | Five year average of the firm's effective interest rate. Source: *WorldScope* Database. |
| ADE_STOCK | Measure of the adequacy of financing to companies through stock market in a country, calculated as the stock market capitalization divided by gross private domestic investment (as of 2000). Source: World Bank Data & Statistics. |
| LEGALITY | Measure of the effectiveness of law enforcement in a country. It is the composite of five individual variables that measure different aspects of law enforcement in a country: efficiency of judiciary system (L1), rule of law (L2), corruption (L3), risk of expropriation (L4), and risk of contract repudiation (L5). Principle component analysis suggests the following formula to calculate this index: LEGALITY $= 0.381 \times$ (Efficiency of judicial system) $+ 0.5778 \times$ (Rule of law) $+ 0.5031 \times$ (Corruption) $+ 0.3468 \times$ (Risk of expropriation) $+ 0.3842 \times$ (Risk of contract repudiation). Higher value of legality index indicates better quality of law enforcement in a country. Sources: La Porta et al. (1998a), Berkowitz et al. (2003). |

***Table 3.*** (*Continued*)

| Variable Name | Variable Description |
|---|---|
| LEG_BOOK | Measure of the availability of laws on book to protect shareholder rights. The range for the index is from zero to six. High value of this variable indicates that a country's legal system favors shareholders against firm controllers in the corporate decision-making process. Source: La Porta et al. (1998a). |

also construct a measure of managerial ownership, MGMTOWN, which takes the value of the percentage of shares owned by the firm's directors and top officers.

I use two basic approaches to get the measurements of *legal protection on investor rights* in a country: LAW_BOOK and LEGALITY. The first variable measures the quality of laws on book designed to protect investor rights, and the second measures the effectiveness of law enforcement in a country. Data about these two variables in different countries are taken directly from the literature. La Porta et al. (1998a, b) examine legal rules covering protection of corporate shareholders and creditors, the origin of these rules, and the quality of their enforcement in 49 countries. They assemble a data set covering legal rules pertaining to the rights of investors, and to the quality of enforcement of these rules, in 49 countries that have publicly traded companies. They also create shareholder and creditor rights indices for each country. Using these data, they find evidence of systematic variation in laws, regulations and their enforcement quality across countries. The current study uses La Porta et al. (1998a) as the basic source for data about LAW_BOOK. This variable ranges from 0 to 6 with higher value indicating that a country's legal system favors shareholders against firm controllers in the corporate decision-making process.

La Porta et al. (1998a) also propose five different variables to measure the quality of law enforcement (LEGALITY) in a country: efficiency of judiciary system, rule of law, corruption, risk of expropriation, and risk of contract repudiation. The correlations between these variables are high. To deal with this problem, I follow Berkowitz et al. (2003) and use the principal component technique to construct a composite legality proxy (LEGALITY). It ranges from 8.51 to 21.91 with higher value indicating more effective law enforcement. Natural log value of this variable is used in the regression analysis. For the purpose of robustness checks, regression results that use the five separate legality proxies (L1, L2, L3, L4 & L5 respectively) are also reported.

I have two measures of *firm size*. The primary measurement (SIZEa) is calculated as the 10-year average of the firm's common equity (in thousands U.S.$). The natural log value of this variable is used in regressions. For the purpose of

robustness checks, the current (usually as of December 31, 2002) common equity value of the firm (SIZEc) is used as an alternative measurement of firm size.

The primary measurement of *the firm's rate of return*, RETURNe, is given by the 10-year average of the firm's annual accounting rate of return on equity. I also construct an alternative measurement of this variable, RETURNa, by calculating the 10-year average of the firm's return on assets for the purpose of robustness checks. Accordingly, I have two measures of *the instability of the firm's return*: STDEVe and STDEVa, which are the standard deviations of the firm's accounting rate of return on equity and return on assets in the past 10 years respectively.

*The firm-level investor protection*, AUDIT, is measured by a discrete variable that describes the auditing practice in a firm. This variable is the sum of two dummy variables: the auditor dummy which equals one if the firm's auditor is one of the "big six" auditing companies and zero otherwise; the auditor's report dummy which equals one if the auditor's report is qualified and zero otherwise. Therefore, this variable takes one of the three values: zero, one, and two, with higher value indicating better auditing practice thus more effective firm-level investor protection.

Measurement of *the cost of debt financing*, INT, is given by the five-year average of the firm's effective interest rate (annual).

Measure of *the adequacy of the stock market in a country*, ADE_STOCK, is calculated as the country's stock market capitalization divided by its gross private domestic investment (as of 2000). High value of this variable indicates that the stock market in this country provides adequate financing for firms. This measure is only available in 39 countries, thus regressions involving this variable have less observations than others.

## 4. MAIN FINDINGS

### *4.1. Simple Treatment of Data*

Table 4 gives the summary statistics of variables involved in the regression analysis. Inspection of ownership data reveals that, corporate ownership concentration ($C5$) varies widely across firms and countries, ranging from 0 to 100%. The mean value of $C5$ is around 50% in the sample. This implies that ownership is fairly concentrated in the majority of firms instead of being dispersed. This picture of corporate ownership structure around the world resembles that of La Porta et al. (1999).

Simple treatment of data reveals that corporate ownership concentration varies systematically with respect to investor protection and development of stock market across countries as expected. In countries with weak legal system,

***Table 4.*** Summary Statistics of Variables (Primary Measurements).

| Variable Name | Mean | Median | Standard Deviation | Maximum | Minimum | Number of Observations |
|---|---|---|---|---|---|---|
| *C*5 | 0.49 | 0.50 | 0.26 | 1 | 0 | 1070 |
| SIZEa (1000 US$) | 1.33E+06 | 2.82E+05 | 3.76E+06 | 6.24E+7 | 285.9 | 1063 |
| LOG-SIZEa | 19.12 | 19.46 | 2.17 | 24.86 | 12.56 | 1063 |
| RETURNe | 0.09 | 0.11 | 0.27 | 1.50 | −1.78 | 1064 |
| STDEVe | 0.28 | 0.12 | 0.62 | 12.88 | 0 | 1070 |
| PRE/CAP | 0.01 | 0 | 0.05 | 0.96 | 0 | 1044 |
| INT | 0.11 | 0.07 | 0.11 | 0.92 | 0 | 884 |
| AUDIT | 0.78 | 1 | 0.46 | 2 | 0 | 1070 |
| Country-specific variables | | | | | | |
| ADE_STOCK | 6.40 | 6.46 | 1.55 | 8.74 | 2.73 | 39[a] |
| L1 (efficiency of judiciary system) | 7.78 | 8.00 | 2.10 | 10.00 | 2.50 | 45[b] |
| L2 (rule of law) | 6.90 | 7.80 | 2.84 | 10.00 | 0.00 | 45[b] |
| L3 (Corruption) | 7.11 | 7.38 | 2.26 | 10.00 | 2.15 | 45[b] |
| L4 (risk of expropriation) | 8.22 | 8.31 | 1.53 | 9.98 | 5.22 | 45[b] |
| L5 (risk of contract repudiation) | 7.75 | 8.57 | 1.73 | 9.98 | 4.68 | 45[b] |
| LEGALITY | 16.42 | 17.13 | 4.29 | 21.91 | 8.51 | 45[b] |
| LEG_BOOK | 3.04 | 3 | 1.35 | 5 | 0 | 45[b] |

[a] Indicates that information about the corresponding variable is available in 39 countries.
[b] Indicates that information about the corresponding variable is available in all 45 countries.

corporate ownership concentration is relatively high. This can be seen from Fig. 1. The horizontal axis in Fig. 1 measures the legality in a country, and on the vertical axis is the percentage of firms with *C*5 value greater or equal to 50% in that country. The slope is clearly negative with *R*-square value equal to 0.28. Table 5 tells the same story as Fig. 1. In Table 5, a country has "high legality" if its LEGALITY value is greater than the sample average (16.42) of all the countries; "low legality" if otherwise. Similarly, a country is categorized in "high ownership concentration" if the percentage of firms with high ownership concentration (*C*5 greater or equal to 50%) in that country is greater than the sample mean of all the countries; "low ownership concentration" if otherwise. Most of the countries (31 out of 45) fall in the "high-low" category or "low-high" category. In other words, firms are more likely to have high ownership concentration in countries with less effective investor protection, and vice versa.

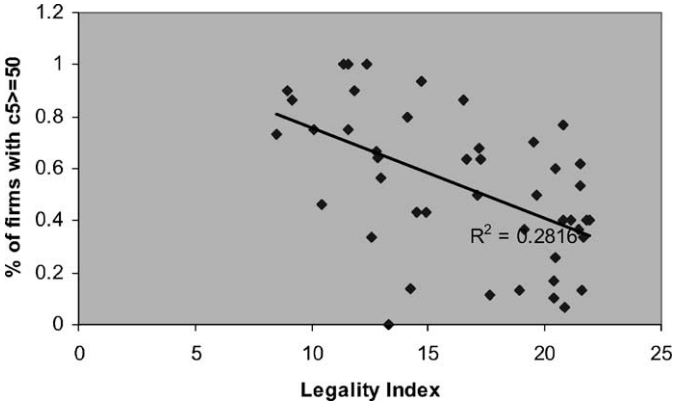


*Fig. 1.* Legal Protection and Ownership Concentration.

Figure 2 and Table 6 reveal the similar pattern regarding the relation between ownership concentration and the adequacy of stock market in a country. A negative relation between these two variables is clearly present.

While inspection of data confirms the expected relations between ownership concentration and the two country-level variables, it must be noted that without controlling for the firm-level variables that have an impact on ownership concentration, the patterns revealed by such simple treatment of data can be illusionary. To derive more reliable conclusions, multivariable regression analysis is needed.[7]

### *4.2. Multivariable OLS Regression Analysis*

The trends suggested by the simple treatment of data are confirmed by multivariable OLS regression analysis. Table 7 reports the OLS estimation results using different model specifications. All regressions correct for possible correlation of the errors at the country level. The dependent variable is ownership concentration (*C*5). In the

***Table 5.*** Legal Protection and Ownership Concentration.

| | High Ownership Concentration | Low Ownership Concentration |
|---|---|---|
| High legality | 7 | 15 |
| Low legality | 16 | 7 |

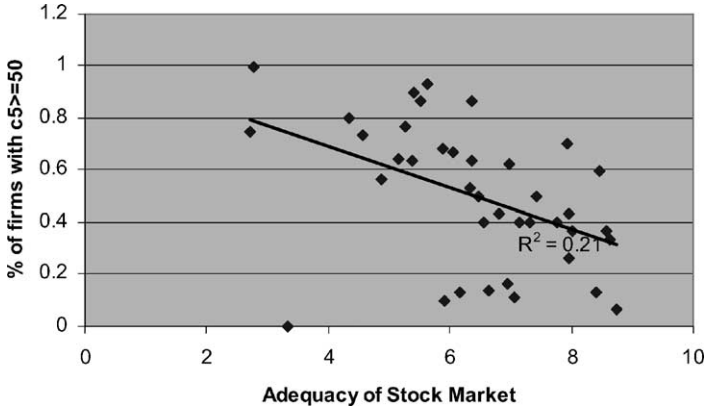


*Fig. 2.* Adequacy of Stock Market and Ownership Concentration.

raw data, a few observations have exceptionally high ($\geq$100%) or low ($\leq -100\%$) returns on equity. These "outliers" are removed from the data used in regressions. The main estimation results are not sensitive to this cutoff.

The relation between ownership concentration and proxies of investor protection is negative as expected (regression (1) through (6) in Table 7) after controlling for other variables that possibly affect ownership concentration. The coefficient estimate on legality is negative and highly significant (1% significance level). The coefficient estimate of law on books is also negative and significant. These results suggest that both the quality of laws on book and the effectiveness of their enforcement are important determinants of firms' ownership concentration in a country. Specifically, *ceteris paribus*, 1% improvement in legality of a country will lead to 0.13% – 0.17% reduction in corporate ownership concentration in that country.

The development of a country's stock market is another country-specific variable that is empirically significant in explaining corporate ownership concentration in that country. In countries with more advanced stock market, corporate ownership concentration is significantly lower than in other countries. Specifically, if the adequacy of stock market improves by 1%, corporate ownership concentration will decrease by 0.13% – 0.17% in general, *ceteris paribus*.

***Table 6.*** Adequacy of Stock Market and Ownership Concentration.

| | High Ownership Concentration | Low Ownership Concentration |
|---|---|---|
| Highly developed stock market | 3 | 16 |
| Poorly developed stock market | 20 | 6 |

***Table 7.*** OLS Regression Analysis.

| Variables | Regressions | | | | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| CONSTANT | −0.88 (0.59) | 1.86*** (0.11) | −0.83 (0.59) | −0.53 (0.60) | −0.79 (0.59) | −1.12* (0.61) |
| INDUSTRY DUMMIES | INCLUDED | INCLUDED | INCLUDED | INCLUDED | INCLUDED | INCLUDED |
| SIZE | 0.26*** (0.06) | −0.02*** (0.39E-02) | 0.25*** (0.06) | 0.23*** (0.06) | 0.25*** (0.06) | 0.29*** (0.06) |
| SQU_SIZE | −0.73E-02*** (0.15E-02) | | −0.73E-02*** (0.15E-02) | −0.67E-02*** (0.15E-02) | −0.72E-02*** (0.15E-02) | −0.82E-02*** (0.15E-02) |
| RETURN | 0.03 (0.04) | 0.06 (0.04) | 0.06 (0.04) | 0.05 (0.04) | 0.05 (0.04) | 0.05 (0.04) |
| SQU_RETURN | | | −0.11 (0.09) | | | |
| STDEV | −0.01 (0.03) | −0.03 (0.03) | −0.05 (0.03) | −0.02 (0.03) | −0.02 (0.03) | −0.01 (0.03) |
| SQU_STDEV | | | 0.05 (0.05) | | | |
| AUDIT | | | | 0.05*** (0.02) | | |
| PRE/CAP | | | | | 0.34*** (0.12) | 0.14 (0.19) |
| INTEREST | | | | | | −0.02* (0.01) |
| ADE_STOCK | −0.21*** (0.05) | −0.24*** (0.05) | −0.20*** (0.05) | −0.20*** (0.05) | −0.21*** (0.05) | −0.24*** (0.06) |
| LAW_BOOK | −0.01** (0.58E-02) | −0.01** (0.58E-02) | −0.01** (0.57E-02) | −0.02*** (0.58E-02) | −0.02*** (0.59E-02) | −0.11* (0.64E-02) |
| LEGALITY | −0.14*** (0.04) | −0.15*** (0.04) | −0.15*** (0.04) | −0.17*** (0.04) | −0.14*** (0.04) | −0.13*** (0.04) |
| *R*-square | 0.19 | 0.17 | 0.19 | 0.21 | 0.20 | 0.21 |
| *F* test | 21.22 | 20.14 | 18.20 | 20.75 | 20.34 | 16.28 |
| Observations | 999 | 999 | 999 | 976 | 976 | 823 |

*Note:* Dependent variable is *C*5; standard errors (in parentheses) adjust for heteroscedasticity; SIZE, ADE_STOCK, LEGALITY are natural log values.

*Indicates a significance level of 10%.

**Indicates a significance level of 5%.

***Indicates a significance level of 1%.

Firm size has a negative overall effect on ownership concentration (regression (2) in Table 7). Since natural-log value is used in regressions, the coefficient estimation on this variable can be explained as 1% increase in a firm's common equity leading to about 0.02 percentage point decrease in ownership concentration. Furthermore, significant nonlinearity is detected when including quadratic form of this variable in the regressions (regression (1), (3), (4), (5) & (6)). The turning point is around 17.36. Compare this to the sample mean (19.12) of LOGSIZE and it appears that the negative relation between firm size and ownership concentration is more likely to exist for medium to large firms than for small firms.

Similar to Demsetz and Lehn (1985), strong industry fixed effect is detected in the banking sector. The coefficient on the bank dummy is negative across all model specifications. This suggests that compared to other types of firms, banks have relatively low ownership concentration around the world. This is consistent with the fact that the banking sector is generally under special regulation for most of the countries in the sample. I also include in the regressions other industry dummies that indicate whether a firm is in the utility, other financial, or transportation industries. Coefficient estimates on these variables are generally insignificant.

Coefficient estimates on the accounting profit rate and its instability take expected signs (regressions (1) through (6) in Table 7). The accounting profit rate is found to be positively related to ownership concentration, while the instability of profit rate is negatively related to ownership concentration. Both results are consistent with Qu's (2004) model and are in contrast to Demsetz and Lehn's (1985) results. However, it must be noted that coefficient estimates on both variables are statistically not different from zero.

Other firm-specific variables that are empirically significant include the firm's auditing practice, and whether preferred stocks account for a significant portion of the firm's total capital. In firms under better auditing (for instance, the firm chooses one of the "big six" auditing firms as its auditor and/or the firm's auditing report is qualified), ownership concentration is found to be significantly higher than other firms. This evidence supports the hypothesis that both the firm's auditing practice and its ownership concentration are choice variables as investors make decisions about how to best protect themselves from potential agency problem. OLS regressions also suggest that when a firm is engaged in extensive issuance of preferred stocks to investors, the ownership concentration in terms of common stocks tends to be high. The coefficient estimate on the effective interest rate is negative as expected, which suggests that when a firm has access to credits at low cost, its ownership tends to be less dispersed. But this result should be treated with caution given the fact that the coefficient estimate on this variable is empirically insignificant.

In general, multivariate OLS regression analysis confirms Qu's (2004) model predictions. The coefficient estimates all take the expected signs and the overall

estimation model is highly significant. Some of Demsetz and Lehn's (1985) results are robust with the inclusion of country-level determinants in a cross-country setting, while some of their results are in contrast to the findings documented here. In addition, my results support strongly the idea that, after controlling for firm-specific variables, corporate ownership concentration varies systematically with the development of stock market and the effectiveness of legal protection on investor rights in a country.

### *4.3. IV Estimation*

Until now legal protection on investor rights has been treated as being exogenous in the OLS regressions. However, the potential endogeneity problem with the effectiveness of investor protection in a country has been recognized by various studies. One recent working paper by Laeven and Woodruff (2003) proposes that larger firms may demand a better legal system. It may also be true that when corporate ownership spreads in a larger group of investors, there is greater demand for more protective legal institutions. Thus low ownership concentration and large number of owners may play a role in causing a strong legal system to come forward. In other words, the effectiveness of investor protection can be endogenous itself and the causality relation assumed by the OLS procedure can actually be the other way around. This endogeneity problem may cause OLS estimator to be biased and inconsistent.

To tackle this endogeneity issue, I construct instrumental variables and implement a standard 2SLS procedure to estimate variable coefficients. Since the possible endogeneity problem involves the variables measuring legal protection on investor rights in a country, and the relation between ownership concentration and investor protection is of primary interest in this paper, I focus on instrumenting for LEGALITY and LAW_BOOK, i.e. to find variables that are highly correlated to these two variables but are independent with other variables. New development in the literature of law and finance suggests a number of candidates, two of which are more relevant than others for the purpose of this study. The first one is the origin of a country's legal system. It has been argued since La Porta et al. (1998a) that investor protection is more effective in countries with English common law origin than countries with other legal origins, such as French civil law origin. Dummy variables about whether the legal institutions in a country have English common law origin or French civil law origin can be good instruments for the quality of laws on book as well as the effectiveness of law enforcement in a country. Along another line of inquiry, Berkowitz et al. (2003) study the so-called "transplant effect." They find that how a country's legal institutions

***Table 8.*** 2SLS Estimation (Instrumental Variables).

| Variables | Regressions | | |
|---|---|---|---|
| | (1) | (2) | (3) |
| CONSTANT | −0.79 (0.60) | 1.95*** (0.13) | −0.73 (0.61) |
| INDUSTRY DUMMIES | INCLUDED | INCLUDED | INCLUDED |
| SIZE | 0.25*** (0.06) | −0.02*** (0.40E-02) | 0.25*** (0.06) |
| SQU_SIZE | −0.73E-02*** (0.15E-02) | | −0.72E-02*** (0.15E-02) |
| RETURN | 0.03 (0.04) | 0.05 (0.04) | 0.06 (0.04) |
| SQU_RETURN | | | −0.12 (0.09) |
| STDEV | −0.01 (0.03) | −0.03 (0.03) | −0.06 (0.07) |
| SQU_STDEV | | | 0.06 (0.05) |
| ADE_STOCK | −0.19*** (0.06) | −0.21*** (0.06) | −0.18** (0.06) |
| LAW_BOOK | −0.01 (0.84E-02) | −0.01 (0.86E-02) | −0.01 (0.84E-02) |
| LEGALITY | −0.16*** (0.06) | −0.20*** (0.06) | −0.18*** (0.06) |
| *R*-square | 0.19 | 0.17 | 0.19 |
| *F* test | 21.15 | 19.95 | 18.12 |
| Observations | 999 | 999 | 999 |

*Note:* Dependent variable is *C*5; standard errors (in parentheses) adjust for heteroscedasticity; SIZE, ADE_STOCK, LEGALITY are natural log values; instrumental variables for LEGALITY and LAW_BOOK are: dummy variable for unreceptive transplant and dummy variable for English common law countries.

** Indicates a significance level of 5%.

*** Indicates a significance level of 1%.

were originally formed has a persistent effect on legality of that country. For countries whose legal institutions were unreceptively transplanted from other countries, legality is generally low. Based on this argument, I construct an "unreceptive-transplant" dummy variable as instrument for LEGALITY in the IV estimation.

Table 8 presents the results of IV estimation using the dummy variable for English common law origin and the dummy variable for "unreceptive-transplant" as instruments for LEGALITY and LAW_BOOK. All regressions correct for possible correlation of the errors at the country level. The dependent variable is ownership concentration (*C*5). 2SLS estimation results highly resemble the OLS estimation results. All the coefficient estimates retain their signs and significance level as in OLS regressions. The absolute value of coefficient estimate on legality is somewhat higher than that in OLS regressions. This seems to suggest that after the endogeneity problem being accounted for, the real effect of legality on corporate ownership concentration is greater than that shown in the OLS regressions.

***Table 9.*** Robustness Checks.

| Variables | Regressions | | | | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| CONSTANT | −0.16 (0.40) | −0.83 (0.57) | −0.02* (0.60) | −1.00* (0.60) | −0.56 (0.60) | −0.52 (0.59) |
| INDUSTRY DUMMIES | INCLUDED | INCLUDED | INCLUDED | INCLUDED | INCLUDED | INCLUDED |
| SIZEa | | 0.25*** (0.06) | 0.25*** (0.06) | 0.25*** (0.06) | 0.24*** (0.06) | 0.23*** (0.06) |
| SIZEc | 0.18*** (0.04) | | | | | |
| SQU_SIZEa | | −0.72E-02*** (0.15E-02) | −0.73E-02*** (0.15E-02) | −0.73E-02*** (0.15E-02) | −0.70E-02*** (0.15E-02) | −0.67E-02*** (0.15E-02) |
| SQU_SIZEc | −0.55E-02*** (0.10E-02) | | | | | |
| RETURNe | 0.06 (0.04) | | 0.05 (0.04) | 0.06 (0.04) | 0.04 (0.04) | 0.01 (0.04) |
| RETURNa | | 0.16** (0.08) | | | | |
| STDEVe | −0.02 (0.03) | | −0.02 (0.03) | −0.02 (0.03) | −0.02 (0.03) | −0.02 (0.03) |
| STDEVa | | 0.19E-02 (0.03) | | | | |
| PRE/CAP | 0.40*** (0.13) | 0.34*** (0.12) | 0.33*** (0.12) | 0.34*** (0.13) | 0.34*** (0.12) | 0.35*** (0.12) |
| ADE_STOCK | −0.21*** (0.05) | −0.21*** (0.05) | −0.25*** (0.05) | −0.24*** (0.05) | −0.20*** (0.05) | −0.16*** (0.05) |
| LAW_BOOK | −0.02*** (0.59E-02) | −0.02** (0.59E-02) | −0.01* (0.60E-02) | −0.01** (0.59E-02) | −0.02*** (0.60E-02) | −0.02*** (0.60E-02) |
| LEGALITY | −0.14*** (0.04) | −0.13*** (0.04) | | | | |
| L1 | | | −0.08*** (0.03) | | | |
| L3 | | | | −0.08*** (0.02) | | |
| L4 | | | | | −0.27*** (0.06) | |
| L5 | | | | | | −0.30*** (0.05) |
| *R*-square | 0.21 | 0.20 | 0.20 | 0.20 | 0.21 | 0.22 |
| *F* test | 21.12 | 20.61 | 19.96 | 19.99 | 21.11 | 22.19 |
| Observations | 974 | 974 | 974 | 974 | 974 | 974 |

*Note:* dependent variable is *C*5; standard errors (in parentheses) adjust for heteroscedasticity; SIZE, ADE_STOCK, LEGALITY, L1, L3, L4, L5 are natural log values.

*Indicates a significance level of 10%.

**Indicates a significance level of 5%.

***Indicates a significance level of 1%.

### *4.4. Ownership Concentration versus Managerial Ownership*

The distinction between ownership concentration and managerial ownership hasn't been clear in the literature when studying firm ownership structure. Qu (2004) argues that it is critical to make a distinction between these two variables. For the purpose of revealing a firm's governance arrangements, ownership concentration – shares owned by big shareholders – is more relevant than managerial ownership. My empirical results support this argument. For the 373 firms in my sample that also report information about managerial ownership (MGMTOWN), I detect a negative correlation ($correl = -0.127$) between these two variables. When $C5$ is replaced with MGMTOWN as dependent variable in the regressions, most of the observed relations disappear and the coefficient estimates become empirically insignificant.[8]

## 5. ROBUSTNESS CHECKS

The main estimation results are robust across different model specifications and variable measurements. Table 9 reports the results for further robustness checks. Regression (1) in Table 9 gives the coefficient estimates when the firm size is measured by its current common equity value (SIZEc) instead of the 10-year average. In regression (2), 10-year average of return on assets (RETURNa) and its standard deviation (STDEVa) are used to measure the firm's accounting profit rate and its instability. Regressions (3) through (6) use separate legality proxies to replace the composite legality index. The OLS and IV estimation results reported in Section 5 persist under these alternative model specifications and variable measurements. The coefficient estimates retain their signs and significance level. Among the five separate variables that measure the effectiveness of a country's law enforcement, efficiency of judicial system (L1), corruption (L3), risk of expropriation (L4), and risk of contract repudiation (L5) are found to be negatively related to corporate ownership concentration and these relations are empirically significant. Not reported in Table 9 is a replication of Table 7's results in which logistic transformation of $C5$ is used as the dependent variable. The main results are not sensitive to this transformation.[9]

## 6. CONCLUSIONS

Using a newly constructed data set of 1070 stock companies from 45 countries around the world, this paper substantially expands Demsetz and Lehn's (1985)

results and shows that the variation in corporation ownership concentration across firms and countries can be explained considerably by firm-specific economic variables that have an impact on the governance arrangement in the firm and certain country-specific variables. Among the firm-specific variables that are empirically significant are firm size, its quadratic form, whether or not a firm is in certain industries, the firm's auditing practice, and whether or not preferred stocks account for a significant portion of the firm's total capital. After controlling for these firm-specific variables, I find that ownership concentration varies systematically across countries depending on the development of a country's stock market, the quality of the country's legal institutions to protect investor rights and the effectiveness of law enforcement. These results are robust across different model specifications and variable measurements. The empirical findings in this paper provide positive evidence in support of Qu's (2004) model and are consistent with La Porta et al.'s (1999) idea that ownership arrangement is a substitute for legal institutions as a mechanism to protect investor rights.

## NOTES

1. For more discussion about the role of large shareholders in corporate governance, refer to Shleifer and Vishny (1986), Agrawal and Mandelker (1990), Burkart et al. (2002), and Demsetz (1983).
2. The empirical results in this paper provide evidence in support of this argument. For example, ownership concentration is found to be negatively correlated to managerial ownership in the sample of 1,070 public companies from 45 countries.
3. Tunneling is defined as the transfer of assets and profits out of the firm for the benefit of the firm's controllers. For more discussion about tunneling behavior, refer to Johnson et al. (2000), Bertrand et al. (2002), and Qu (2004).
4. Mainland China is excluded from the data set due to its special economic and legal institutions.
5. Russia and other transitional economies, such as former socialist Eastern-European countries, are excluded from the data set due to the massive change in these countries' legal institutions during the past decade.
6. This is a general rule. In some cases, data are missing from a firm's financial reports. Also, for some developing countries that have relatively small number of companies in the database, this rule is relaxed to six years in order to accommodate more companies from those countries.
7. One caveat of La Porta et al.'s (1999) study is that they do not make efforts to control for firm-specific variables that may also affect a firm's ownership structure.
8. The estimation results using managerial ownership as dependent variable are available from the author upon request.
9. The estimation results using logistic transformation of $C5$ as dependent variable are available from the author upon request.
10. For more details about the model, please refer to Qu (2004).

11. The optimal $\alpha^*$ is chosen through the interactions between the controller and small shareholders in the financial assets market. In the long run, any other $\alpha$ that does not maximize the expected firm value is not sustainable. See Slovin and Sushka (1993) for empirical evidence.

## ACKNOWLEDGMENTS

I have benefited greatly from discussions with Daniel Berkowitz, Kenneth Lehn, Esther Gal-Or, Thomas Rawski, and Gene Gruver. I am also grateful to an anonymous referee for helpful comments on this paper. I thank Ms. Ling Chen for superb research assistance.

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# APPENDIX

*A Sketch of Qu's (2004) Model.*[10]

Consider a firm with common equity, $E$. This firm is owned by the controller and the large group of small shareholders. At *date 2*, the controller owns share $\alpha$ of the firm's equity and can possibly engage in tunneling ($T$). The controller invests the rest of the firm's equity to a project that yields a rate of return $r$, and $r \sim N(R,V)$. Tunneling is costly and its cost depends on $T,V$ and a measure of the lack of investor protection, denoted $p$. $C \equiv C(T, p, V)$ is a well-defined function. At *date 1*, investors (the large group of small investors and the controller) pick the corporate ownership structure to maximize the expected firm value subject to the participation constraints of both groups. The controller's expected tunneling behavior at *date 2* is taken into consideration during this process.

Assume that the controller is risk averse, while the group of investors as a whole is risk neutral due to the fact that the controller's wealth is more deeply entrenched in the firm. Assume that the controller has the constant absolute risk aversion utility function, $U(W) = -e^{-aW}$, where $a > 0$ is the coefficient of absolute risk aversion and $W$ is the controller's payoff. At date 2, the controller maximizes his/her expected utility which is equivalent to maximizing his/her expected payoff net of a risk premium:

$$\max_{T} E[W] - \frac{1}{2} a \text{Variance}(W) \tag{2}$$

The first-order condition gives the following maximum solution: $T^* = \varphi(p, V, a, E, R, \alpha)$. At date 1, $\alpha$ is chosen by investors in the financial asset market to maximize the firm's expected value,[11] $E[\Pi]$, subject to two constraints:

$$\begin{aligned} &\max_{\alpha} E[\Pi] = (1+R)(E-T) = (1+R)(E - \varphi(p, V, a, E, R, \alpha)) \\ &\text{Subject to: (PC.1) \& (PC.2)} \end{aligned} \tag{3}$$

The first constraint (PC.1) is the participation constraint for the controller, i.e. the controller's expected payoff is at least as high as what he/she puts into the firm initially. The second constraint (PC.2) applies similar constraint for small

shareholders as (PC.1) does for the controller. The optimization problem in (3) is equivalent to minimizing $T^* = \varphi(p, V, a, E, R, \alpha)$ by choosing $\alpha$. Simple algebra yields:

$$T^* = \varphi(p, V, a, E, R, \alpha) = (\mathrm{RE}) - (\mathrm{AE}) \tag{4}$$

The overall effect of ownership concentration ($\alpha$) on tunneling can be divided into two opposite effects: the second term on the RHS of (4), denoted *AE*, enters $T^*$ with a negative sign and it captures the alignment effect, which is that the controller's income is aligned with the firm and this reduces tunneling; the first term on the RHS of (4), denoted *RE*, gives the risk-aversion effect, which indicates that holding the controlling stake of the firm exposes the controller's income to the firm-specific risk and thus induces tunneling. The marginal alignment effect (*MAE*) decreases with $\alpha$, while the marginal risk-aversion effect (*MRE*) increases with $\alpha$. The optimal ownership concentration,$\alpha^*$, equates *MAE* and *MRE*, as depicted in Fig. 3.

It is clear that $\alpha^* = \Psi(p, V, a, E, R)$, i.e. ownership concentration in equilibrium depends on how effectively investor rights are protected, the firm's expected rate of return, uncertainty of the return, size of the firm's equity and the controller's risk attitude. Total differentiation reveals further information about $\Psi(\cdot)$ and yields the following proposition:

**Proposition.** In a firm with risk-averse controller and risk-neutral investors, ownership concentration varies systematically with the following firm level fundamentals and institutional variables: *ceteris paribus*, ownership concentration decreases with the effectiveness of investor protection, decreases with firm size, decreases with the risk-averseness of the firm controller, increases with the expected rate of return, and decreases with the volatility of the firm return.

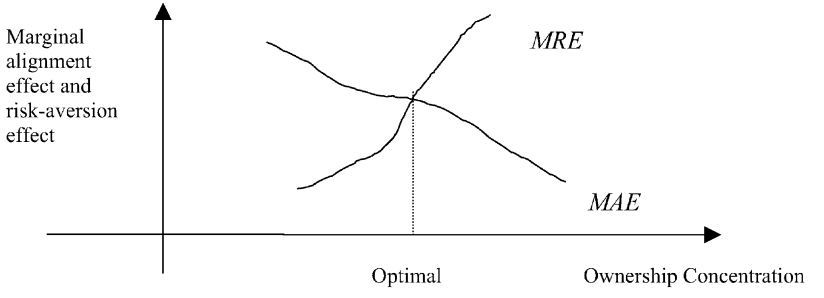


*Fig. 3.* Determination of Corporate Ownership Concentration.

# RESOLVING CORPORATE GOVERNANCE PROBLEMS IN EXECUTIVE STOCK OPTION GRANTS

Paul Dawson

## ABSTRACT

*Executive stock option grants are intended to remove corporate governance problems by aligning the managers' interests with those of the outside shareholders. Conventional schemes leave several problems in place. Exotic option structures can resolve these. In this paper, such structures are proposed and tested on the Dow Jones constituents over a 10-year period. These alternative schemes increase the financial rewards to the better performing managers, at no extra cost to the company whilst offering a resolution or mitigation of the identified agency problems No one scheme dominates the others and a portfolio of option types is indicated.*

## 1. INTRODUCTION

Executive stock option grants are intended to address a fundamental problem in corporate governance. Managers who do not own 100% of the firm are motivated to seek utility in the form of non-pecuniary rewards, or perquisites additional to their pecuniary rewards – Jensen and Meckling (1976). Such rewards may take many forms: self-indulgence through unnecessary corporate expenditure, acquisitions undertaken merely to satisfy the managers' egos and, most simply of all, reduced

**Corporate Governance**
**Advances in Financial Economics, Volume 9, 247–263**

**ISSN: 1569-3732/doi:10.1016/S1569-3732(04)09010-3**

diligence in the execution of duties. Thus a conflict of interests arises between the managers and the outside shareholders. A significant pecuniary reward linked to the stock price of the company is intended to motivate the managers to resist such temptations and to act in the interests of the outside shareholders.

In this paper, it is argued that conventional stock option plans do not mitigate this agency problem to the maximum extent. Agency problems are identified in conventional schemes and alternatives to resolve or mitigate these problems are proposed. These alternatives are backtested empirically, using each of the constituents of the Dow Jones Industrial Average over a 10-year interval. The results generally support the hypothesis that such plans increase the financial rewards to the better performing managers, at no extra cost to the company.

The importance of this issue is not to be underestimated. Hall (2001, p. 121) states "stock option grants have come to dominate the pay – and often the wealth – of top executives throughout the United States . . . In total, U.S. executives hold unexercised options worth tens of billions of dollars." If such grants do not fulfil their objectives to the maximum degree, considerable value is transferred inefficiently, usually from the outside shareholders to the company managers.

The paper is organised as follows. First, context is set with a literature review. The agency problems which arise in conventional plans are then identified, followed by a set of alternative plans, each of which is presented as better aligning the interests of the management with those of the outside shareholders. Next, an empirical analysis is undertaken in which these alternative plans are backtested on each of the constituents of the Dow Jones Industrial Average over the 10-year period starting in June 1992 and two five-year subperiods. The final section concludes.

## 2. LITERATURE REVIEW

Executive stock options grant the holder the right but not the obligation to purchase corporate stock at a predetermined price, known as the strike price, during a predetermined interval. Such options are known as call options and the process of enforcing the right is known as option exercise. In conventional stock option grants, the strike price is set equal to the stock price at the time of the grant and managers may exercise these options at any time from three years to 10 years after the grant.

The seminal papers on option pricing theory are Black and Scholes (1973) and Merton (1973). They show that, given the ability to hedge, the value of an option is a function of six factors: the stock price, the strike price, the time to maturity, the level of interest rates, the dividend yield of the stock and the volatility of the stock

returns. It will be noted that three of these factors are within the sphere of influence of the managers, namely stock price (to the extent that this reflects the managers' stewardship of the company), dividend yield and volatility (to the extent that the managers can increase or decrease the risk profile of the company's performance by altering leverage and corporate investment strategy). The strike price of the options and the time to their maturity (as well as the characteristics of more exotic options which will be presented later) are under the control of the compensation committee. Interest rates are outside the control of the company altogether.

Much of the large literature on executive stock option grants addresses the problems of valuing these with a Black-Scholes-Merton type model. Examples of such papers from each of the most recent three decades are Noreen and Wolfson (1981), Foster, Koogler and Vickrey (1991) and Hall and Murphy (2002). A frequent theme in such papers is that managers with option grants have a restricted ability to hedge, and thus cannot construct the riskfree portfolio which underlies option pricing theory. Therefore they will place a lower value on the option grant than standard theory implies. Bodie, Kaplan and Merton (2002) assert forcibly that, whatever the personal valuation of the beneficiary, the cost to the company issuing options is the theoretical value.

The present paper addresses governance problems in conventional stock option schemes and several earlier papers have also identified some of these. These can be reviewed in the context of each of the six factors of the option pricing model. The stock price does not present such problems, since this factor rewards managers and outside shareholders equivalently. Interest rates are outside the company's control. The other four factors are within the control of either the management or the compensation committee and each presents governance problems.

Volatility is central to option valuation since option values increase with volatility. Thus standard option pricing theory suggests option grants should motivate managers to increase volatility. Lambert, Larcker and Verrachia (1991) argue that the inability to hedge may (depending on managers' risk aversion) motivate risk reduction decisions. Similarly, Lambert and Larcker (1985) argue that in the money options motivate risk reduction behaviour, whereas out of the money options motivate risk increasing behaviour. Carpenter (2000) and Kulatilaka and Marcus (1994) similarly argue that option compensation should not strictly lead to greater risk-taking. However, in empirical analyses, Agrawal and Mandelker (1987), DeFusco, Johnson and Zorn (1990) and DeFusco, Zorn and Johnson (1991) find volatility increases are associated with stock option grants.

Since option values are negatively related to dividend yields, standard theory suggests that managers are motivated to reduce such payouts. Lambert, Lanen and Larcker (1989), using rather old data, find that this forecast dividend reduction is observed in practice. Jolls (1998) argues that stock options motivate managers

to distribute excess cash to outside shareholders in the form of stock repurchases rather than dividends. Thus managers with stock options are motivated to adjust the size and form of distributions to outside shareholders.

Conventional plans allow a seven-year window of opportunity to exercise the options. Merton (1973) shows that exercise is irrational until the last moment, unless there is a significant dividend to capture. However, many authors (e.g. Carpenter, 1998; Hemmer, Matsunga & Shevlin, 1996; Huddart, 1994; Huddart & Lang, 1996; Yermack, 1997) find that executive options are frequently exercised early. The various reasons advanced for this early exercise are risk aversion, portfolio diversification, liquidity requirements and exploitation of inside information. The first two reasons are an uncoupling of the mutuality of interests between managers and outside shareholders. The last reason clearly represents an interest conflict between managers and outside shareholders. Thus, except where this is undertaken for liquidity reasons, early exercise presents governance problems.

Existing literature also identifies problems in respect of the strike price of the options. Lambert, Lanen and Larcker (1989) and Rubinstein (1995) recognize that an option issued with a strike price equal to the prevailing stock price has a high probability of expiring in the money in 10 years' time. This point is important. There is a popular misconception, even among informed commentators, that a long-dated option whose strike price is significantly higher than the current stock price is worthless. For example, Roberts (2001) refers to options granted to Vodafone directors during 2000/2001 as being "currently worthless." At the time, the stock price was £1.68 and the strike price £2.91. The theoretical value of such options (with nine years to expiry) was about £0.68 (about $1) per share and since the CEO had been granted such options over more than 5,000,000 shares, it can be seen that the commentator badly underestimated the value of the holding. The governance problem in setting the strike price at the money at the time of option grant is that the beneficiary of the option has a significant free ride. Equities are expected to offer a return greater than the riskfree rate because holders expect a reward for carrying risk. Granting at the money options gives managers the opportunity of a reward even if the company's stock underperforms riskfree instruments such as government bonds.

The issue of relative performance also lies at the heart of a currently contentious aspect of executive stock option grants. Uberhart (1985) argues that such grants should pay off according to relative performance against a market index, rather than the absolute performance embedded in most current schemes. Scholes (1991) and Sloan (1993) note the lack of such relative performance schemes. The current contention relates to the practice of resetting the strike prices of executive option grants in response to a bear market. Saly (1994) argues that such resetting is justifiable to compensate for market risk, but not for the specific risk of the

company. She does not, however, address the associated question of windfall gains arising from market risk in a bull market. Thus, the setting or resetting of the strike price also presents agency problems. Brenner, Sundaran and Yermack (2000) analyse the characteristics of firms which undertake such resetting.

One final area of current debate is whether or not executive stock options should be expensed on a firm's income statement. Bodie, Kaplan and Merton (2002) argue that they should be and an increasing number of firms are now starting to do so. Hence we can regard the value of the options issued as a cost to the company.

## 3. MITIGATION OF GOVERNANCE PROBLEMS

The discussion above identified, but did not resolve, the following governance problems embedded in conventional executive stock option grants:

(a) Managers are motivated to reduce dividends and/or otherwise modify cash distributions to shareholders.
(b) At the money options give managers a free ride, enabling them to benefit even in the event of unsatisfactory performance.
(c) Managers are motivated to adjust the risk exposure of the company to maximise their own utility rather than that of the outside shareholders.
(d) The timing flexibility allows managers to exploit their information advantages over the outside shareholders.
(e) The rewards offered by stock options grants contain a significant market risk component, which may offer windfall gains unrelated to the managers' stewardship of the company or, in the event of a bear market, may lead to managerial pressure to reset the strike price.

In this section, it is argued that exotic options structures can resolve or mitigate each of these problems. The first conflict is easily avoided: all that is necessary is to offer a Total Return Option rather than the conventional option described above. With such an option, each time a dividend is paid, the strike price of the option is reduced by the value of that dividend, discounted back to the time of the option grant. The managers' option plan is thus immunised against changes in the dividend policy and the managers are free to determine dividend policy with only the outside shareholders' interests in mind.

The free ride offered by at the money options can be avoided by setting the strike price of the options equal to the forward price of the stock. This is the price in ten years' time which the stock will have if the total returns on the stock equal the prevailing riskfree interest rate. Such an option is known as an "at the money forward" option. If the strike price is set at this level, the options offer no payoff

unless the returns achieved on the stock exceed the riskfree returns available at the time of the option grant.

With current government bond yields at about 4%, this implies a strike price some 50% higher than the current stock price for a ten-year option. Managers may resist the idea of having the strike price set at so high a level, but two factors should counter this. The first is that the value of this option is reduced, so that a given endowment value will secure options over an increased number of shares. The second point is that managers who are unable to generate a stock price performance which exceeds the return on riskfree securities have little justification to claim a reward based on stock price performance.

The managers' motivation to adjust volatility to match their own preferences rather than working in the interests of the outside shareholders can be addressed by two option types: Asian options and Down and Out options. Asian options offer a payout at expiry equal to the average asset price over the life of the option minus the strike price. This averaging process greatly reduces the option's sensitivity to volatility and would thus be appropriate whether the compensation committee were concerned about motivations either to increase or to decrease volatility. A procedure for valuing Asian options is presented in Turnbull and Wakeman (1991).

Down and Out options offer the same payoff as conventional options, except for the inclusion of a condition that if, at any point over the option's life, the stock price reaches a predetermined barrier below the current price ("Down"), the option is surrendered without compensation ("Out"). Such an option would be appropriate if the compensation committee were concerned about the managers increasing the volatility of the stock returns. Merton (1973) shows how to value such options. The level at which the barrier is set is open to negotiation. If the barrier is set too high, the managers may become excessively risk averse; on the other hand, if the barrier is set too low, it will do little to curb the manager's motivation to take risks. One obvious possibility is to set the barrier at what is known as a "vega neutral" level. Vega is the name given to the partial derivative of the option pricing model with respect to volatility. For down and out options, vega is negative when the stock price is close to the barrier, but positive when the stock price is far from the barrier. Given an observed stock price, and the other option pricing factors, it is possible to determine a barrier level at which the vega is zero. This is the vega neutral level.

The early exercise problem can be mitigated by eliminating the timing flexibility. Thus the managers would be able to exercise the option only at expiry. If the managers anticipate stock price weakness, there is no scope for cashing in the option at the top of the market. Since standard theory shows early exercise to be generally irrational for stocks paying a dividend yield below the current interest rate, removing the ability to exercise early does not affect the theoretical value of the option.

If the timing flexibility is eliminated, the managers might prefer a shorter maturity for the options, to help meet their liquidity requirements. The maturity reduction lessens the option value, so that a given endowment secures a larger number of options. It would be revealing to let the managers choose the timeframe of the options, subject to some minimum life, perhaps three years, to ensure at least a medium-term motivation for stock price performance. Such a choice would convey useful information to the market. This point is taken up in the conclusion.

The market risk problem can be avoided by the award of so-called "outperformance" options. To implement, an index is generated, either of the market generally or of a basket of stock prices appropriate to the company's sector. This index is based at the company's current stock price. The payoff from the option scheme at expiry is Max[0, $S - I$], in which $S$ and $I$ respectively represent the stock price and the index level at the time of payoff. Thus if the company's stock price has fallen, but the index fallen further, managers receive a payoff, since they have outperformed the index. In this way, the market risk factor is largely removed from the incentive scheme and the reward to managers is linked much more closely to factors within their control. Margrabe (1978) develops a model to price these options. In addition to the factors required for pricing the company option, it is necessary to determine the volatility of the index, its dividend yield and its correlation with the company stock.

## 4. EMPIRICAL ANALYSIS

### *4.1. Database and Methodology*

In order to test these schemes on real data, the daily stock price histories of the 30 constituents of the Dow Jones Industrial Average on 3 June 2002 are sampled over the preceding 10 years. The simulation involves the grant of options with a theoretical value of $1,000,000 on 1 June 1992. The payoffs to the option packages described above with five and 10-year maturities are analysed. In addition, the payoffs to equivalent five-year options issued on 2 June 1997 are also evaluated.

The sampling period was chosen to offer the most recent 10-year interval for the purposes of this research. Fortuitously, the two five-year sub-periods offer contrasting market environments. The first five-year period ("boom") was essentially an unbroken bull run, with the S&P 500 index providing annual returns of 18% per annum with an annual volatility of barely 10%. The second five-year period ("turbulent") saw the Asian crisis, the Russian crisis, the LTCM crisis, the crash in technology stocks, the events of 9/11/2001 and the Enron collapse.

During this period the S&P 500 provided annual returns of barely 5% with an annual volatility of more than 20%.

For each of the 30 stocks in each of the three periods analysed, nine option values are calculated. These comprise at the money Outperformance options and both at the money and at the money forward options of the following four types: Conventional, Total Return, Asian and Down and Out. In each case, the theoretical option value on June 1, 1992 and June 2, 1997 is calculated, using the appropriate interest rates and dividend yields observed on those dates, together with the volatility realised over the subsequent five or ten years, as appropriate. The number of options notionally allocated to each scheme is simply 1,000,000 divided by the dollar value of each option, so that each endowment has an initial value of $1,000,000. For the Down and Out Options, the barrier is set at the vega neutral level. For the Outperformance options, the index used is the S&P 500, adjusted for the dividend yield. The correlation value used in the Outperformance options is the realised correlation over the appropriate five or 10-year period. For these options, the total return on the stock was compared with the total return on the index.

The daily price and dividend data were obtained from Datastream and the interest rates used were taken from the Financial Times. For missing points along the yield curve, a linear interpolation was made.

Whilst it is obviously impossible to determine how different option structures would have altered the managerial decisions of the beneficiaries, it is possible to analyse the performance of the different option types in matching the payoffs to the managers with the payoffs to the outside shareholders. For each of the three periods analysed, companies are allocated to one of three portfolios according to the stock returns achieved. Thus portfolio one includes the 10 best performing companies, portfolio two the next 10 and portfolio three the worst performing 10 companies.

### *4.2. Results*

Stock market performance over the three periods analysed is presented in Table 1. For the 30 Dow Jones constituents, it shows the maximum, minimum, median and interquartile range expressed in terms of annual returns. For reference, the annual returns on the S&P 500 index and U.S. Treasury Notes of the appropriate maturity are also shown. Finally, the numbers of stocks outperforming the S&P 500 index and underperforming the Treasuries are also shown.

Table 2 shows the mean payoff to each of the nine option types over each of the three intervals considered. It will be recalled that each of the option grants assumed an initial endowment of $1,000,000.

***Table 1.*** Total Annual Returns on Dow Jones Constituents, S&P 500 Index and U.S. Treasury Notes.

| | 10 Years from June 1992 | 5 Years from June 1992 | 5 Years from June 1997 |
|---|---|---|---|
| Maximum | 32.84% | 64.18% | 29.11% |
| Minimum | 0.18% | 3.34% | −15.04% |
| Median | 13.01% | 20.09% | 7.37% |
| 1st quartile | 9.66% | 15.46% | −0.88% |
| 3rd quartile | 18.62% | 25.61% | 12.56% |
| Treasuries | 7.78% | 6.68% | 6.51% |
| S&P 500 | 11.55% | 18.02% | 5.44% |
| No. of stocks outperforming S&P 500 | 18 | 17 | 17 |
| No. of stocks underperforming Treasuries | 4 | 1 | 14 |

Table 2 evaluates eight alternatives to the conventional at the money scheme in three timeframes. The first point to note is that the plans all offer significant rewards. Over the 10-year period, the average conventional plan matures with a value of $6.18 million. The two contrasting subperiods naturally offer contrasting mean payoffs: $6.06 million and $1.18 million.

Each of the option types produced zero payoffs for some stocks in one or more of the periods sampled. It is of interest to identify the maximum payoffs achieved by option type and period. This is shown in Table 3.

Over the full 10-year period, Citigroup and Intel dominate jointly. In the first five-year period, Intel dominates alone and in the second five-year period, Walmart dominates alone. Table 3 highlights the ability of two options types, namely Down and Out at the money forward and Outperformance options, to

***Table 2.*** Mean Payoffs to Each Option Type (All Values in $ Million).

| | 10 Years from June 1992 | 5 Years from June 1992 | 5 Years from June 1997 |
|---|---|---|---|
| Conventional – at the money | 6.18 | 6.06 | 1.18 |
| Conventional – at the money forward | 6.58 | 7.26 | 0.93 |
| Total return – at the money | 5.79 | 5.47 | 1.27 |
| Total return – at the money forward | 6.39 | 6.60 | 1.04 |
| Asian – at the money | 7.65 | 3.19 | 2.25 |
| Asian – at the money forward | 8.74 | 3.46 | 2.23 |
| Down and out – at the money | 6.86 | 6.68 | 1.60 |
| Down and out – at the money forward | 7.86 | 8.13 | 1.63 |
| Outperformance | 7.05 | 5.68 | 1.46 |

***Table 3.*** Maximum Payoffs by Option Type and Period Analysed. (All Values $ Million).

| | 10 Years from June 1992 | | 5 Years from June 1992 | | 5 Years from June 1992 | |
|---|---|---|---|---|---|---|
| Option type | Stock | Payoff | Stock | Payoff | Stock | Payoff |
| Conventional – at the money | Citigroup | 25.39 | Intel | 25.27 | Walmart | 6.11 |
| Conventional – at the money forward | Citigroup | 32.41 | Intel | 33.56 | Walmart | 6.83 |
| Total return – at the money | Intel | 31.71 | Intel | 24.46 | Walmart | 5.95 |
| Total return – at the money forward | Citigroup | 26.76 | Intel | 33.55 | Walmart | 6.71 |
| Asian – at the money | Intel | 32.58 | Intel | 14.19 | Walmart | 8.39 |
| Asian – at the money forward | Intel | 41.86 | Intel | 18.55 | Walmart | 9.92 |
| Down and out –at the money | Citigroup | 29.44 | Intel | 39.77 | Walmart | 8.58 |
| Down and out – at the money forward | Intel | 56.48 | Intel | 76.20 | Walmart | 16.30 |
| Outperformance | Citigroup | 44.69 | Intel | 42.80 | Walmart | 10.31 |

deliver spectacular payoffs to successful managers. For the most successful stocks, the Down and Out at the money forward options more than double the payoffs achieved from conventional schemes and the Outperformance options increase the payoff by a factor of about 60%.

ANOVA shows no significant differences between the payoffs of the nine different option types in any of the three periods examined. It is of interest, though, to analyse the distribution of the payoffs. Table 4 shows the mean payoffs of each of the option types for each of the periods sampled in each of the three portfolios. As expected, options on the top performing stocks outperform those in the other portfolios in all cases.

### *4.3. Hypothesis Testing*

**H1.** The alternative option structures proposed perform better than conventional schemes in aligning the interests of the managers with those of the outside shareholders.

The statistic analysed is difference in the payoffs between the alternative schemes proposed and the conventional scheme. If the schemes considered offer a significant increase for the portfolio one sample (the top performing stocks) and/or a significant decrease for the portfolio three sample (the worst performing

***Table 4.*** Mean Payoff by Option Type and Portfolio Allocation. (All Values $ Million).

| Option Type | 10 Years from June 1992 Portfolio | | | 5 Years from June 1992 Portfolio | | | 5 Years from June 1997 Portfolio | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| Conventional – at the money | 12.17 | 4.71 | 1.66 | 10.95 | 5.03 | 2.20 | 2.67 | 0.86 | 0.02 |
| Conventional – at the money forward | 14.63 | 4.37 | 0.75 | 13.94 | 5.90 | 1.95 | 2.48 | 0.30 | 0.00 |
| Total return – at the money | 10.91 | 4.53 | 1.93 | 9.72 | 4.44 | 2.24 | 2.70 | 1.05 | 0.06 |
| Total return – at the money forward | 13.48 | 4.59 | 1.12 | 12.41 | 5.26 | 2.12 | 2.58 | 0.55 | 0.00 |
| Asian – at the money | 13.87 | 5.75 | 3.32 | 5.94 | 2.67 | 0.94 | 4.04 | 2.12 | 0.58 |
| Asian – at the money forward | 17.46 | 6.03 | 2.71 | 7.03 | 2.59 | 0.75 | 4.39 | 1.88 | 0.41 |
| Down and out – at the money | 14.58 | 4.37 | 1.63 | 14.00 | 5.04 | 1.00 | 3.66 | 1.13 | 0.00 |
| Down and out – at the money forward | 18.03 | 5.24 | 0.31 | 21.28 | 3.02 | 0.08 | 4.50 | 0.40 | 0.00 |
| Outperformance | 18.86 | 2.30 | 0.00 | 14.94 | 2.09 | 0.00 | 3.80 | 0.59 | 0.00 |

stocks), it is argued that they perform a better job in aligning the interests of the managers with those of the outside shareholders. Since the data are not distributed normally, a non-parametric test (one-sample Wilcoxon) is performed on the data. The results are shown in Table 5.

Over the full 10-year period, six of the eight alternative option schemes proposed met the criterion above. The at the money Total Return and Asian options failed, actually inverting the desired relationship. The lower strike price of the Total Return options decreases the gearing of the payoff; an advantage in the case of poorer performing companies and a disadvantage in the case of the better performers. The Outperformance options were the most spectacularly successful, giving both the greatest increase to the portfolio one companies and the greatest decrease to the portfolio three companies. Both types of Down and Out option succeeded, the at the money forwards more so than the at the moneys.

In the first five-year period ("Boom"), only three of the eight alternatives succeed according to the criterion specified, namely Conventional at the money forward, Down and Out at the money forward and Outperformance options. Two more – Total Return at the money forward and Down and Out at the money – show the appropriate signs, but the differences are not statistically significant. The Total Return at the money options again work in the opposite direction. The Asian options offer reduced payoffs for all portfolios, but the reduction is greatest for the top performing stocks. This is an expected characteristic in a low volatility, high return market. The low volatility means that the reduced sensitivity of the option

***Table 5.*** Median Differences Between Payoffs of Alternative Option Schemes and Conventional at the Money Options. (All Values $ Million).

| Option Type | 10 Years from June 1992 Portfolio | | | 5 Years from June 1992 Portfolio | | | 5 Years from June 1997 Portfolio | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| Conventional – at the money forward | 2.34* | −0.37 | −0.99* | 2.62* | 0.84* | −0.30 | −0.25 | −0.57* | 0.00 |
| Total return – at the money | −0.88* | −0.15 | 0.20* | −1.23* | −0.55* | 0.03 | 0.02 | 0.19* | 0.00 |
| Total return – at the money forward | 1.04* | −0.05 | −0.57* | 0.93 | 0.31 | −0.08 | −0.11 | −0.29* | 0.00 |
| Asian – at the money | 0.49 | 1.02 | 1.48* | −4.67* | −2.43* | −1.23* | 1.40* | 1.24* | 0.33 |
| Asian – at the money forward | 4.70* | 1.38 | 0.77 | −4.02* | −2.63* | −1.45* | 1.69* | 1.04 | 0.00 |
| Down and out – at the money | 2.39* | 0.68 | 0.18 | 2.36 | 0.59 | −1.06 | 0.98* | 0.34 | 0.00 |
| Down and out – at the money forward | 4.60 | 0.67 | −1.29* | 9.30 | −4.67 | −2.21* | 1.40 | −0.50* | 0.00 |
| Outperformance | 6.10* | −2.51* | −1.66* | 3.22 | −2.96* | −2.23* | 0.84* | −0.35 | 0.00 |

*Significant at the 5% level.

values to volatility is less important and the high return means that payoffs based on average values will generally be lower than those based on terminal values.

In the second five-year period ("Turbulent"), four sets of options succeed according to the criterion: both sets of Asian options, the Down and Out at the money options and the Outperformance options. The other options show no statistically significant results. This arises principally because in this turbulent period, many of the schemes result in zero payoffs. The Asian options offer increased payoffs for portfolio one stocks and no reduction for the other portfolios. Once again, this is an expected characteristic of such options in a high volatility, low return market. The reduced sensitivity to the high volatility results in the $1,000,000 endowment securing a greater number of options and the payoff per option is greater for an Asian option than for a conventional if the average price of the stock exceeds its terminal price.

**H2.** The at the money forward options perform better than their at the money equivalents in aligning the interests of the managers with those of the outside shareholders.

A similar analysis to that above is undertaken of the median difference between the payoff of the at the money forward options and their at the money equivalents. Once again, a significant positive figure for portfolio one stocks and/or a significant negative difference for the portfolio three stocks is evidence that the at the money forward options reward successful managers more equitably. The results are shown in Table 6.

In the full 10-year period, it is seen that each of the alternative option types succeed according to this criterion. In the first five-year period ("Boom"), three of the four options types succeed. The results for the Down and Out options show the appropriate signs, but are not statistically significant. This is attributed to

***Table 6.*** Median Differences Between Payoffs of at the Money Forward Option Schemes and their at the Money Equivalents. (All Values $ Million).

| Option Type | 10 Years from June 1992 Portfolio | | | 5 Years from June 1992 Portfolio | | | 5 Years from June 1997 Portfolio | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| Conventional | 2.34* | −0.37 | −0.99* | 2.62* | 0.84* | −0.30 | −0.25 | −0.57* | 0.00 |
| Total return | 2.46* | 0.10 | −0.80* | 2.32* | 0.77* | −0.15 | −0.15 | −0.52* | 0.00 |
| Asian | 3.65* | 0.40 | −0.64* | 0.74* | −0.11 | −0.20 | 0.23 | −0.26* | −0.10 |
| Down and out | 3.60 | 0.80 | −1.23* | 6.20 | −1.90 | −0.68 | 0.52 | −0.72* | 0.00 |

*Significant at the 5% level.

the large number of zero payoffs observed in portfolio one – six for the at the money forward options, one for the at the money options. In the second five-year period ("Turbulent"), none of the portfolio one or three results are statistically significant: again this is attributed to the large number of zero values observed. Thus it is concluded that in all but unusually turbulent market conditions, at the money forward options perform better than at the money options in aligning the interests of the managers with those of the outside shareholders. In turbulent markets, the issue is not resolved one way or the other.

## 5. CONCLUSION

In the early part of this paper, five corporate governance problems arising from conventional stock option schemes were identified:

(a) Managers are motivated to reduce dividends and/or otherwise modify cash distributions to shareholders.
(b) At the money options give managers a free ride, enabling them to benefit even in the event of unsatisfactory performance.
(c) Managers are motivated to adjust the risk exposure of the company to maximise their own utility rather than that of the outside shareholders.
(d) The timing flexibility allows managers to exploit their information advantages over the outside shareholders.
(e) The rewards offered by stock options grants contain a significant market risk component, which may offer windfall gains unrelated to the managers' stewardship of the company or, in the event of a bear market, may lead to managerial pressure to reset the strike price.

One or more exotic option types is identified as being able to mitigate or resolve each of these problems. It remains to ask which, if any, of these exotic options is demonstrably superior to the others. First, it should be noted that all schemes assumed a theoretical endowment value, on the day of grant, of $1,000,000. Thus, assuming the trend towards expensing options on the income statement continues, each scheme is equally costly to the company. Next, it should be noted that the variations are not mutually exclusive. Modern financial engineering technology now enables construction and valuation of an option which combines the features of all variations, although the explanation of the payoffs to such an option would be complicated. The current contention around executive stock option grants really calls for transparency.

Whilst it is not possible to determine how the award of these alternative options would have influenced managerial behaviour, it is possible to analyse the payoffs

each scheme would have produced in the timeframes considered. At the money forward options not only remove the free ride problem, but also, as the empirical evidence shows, generally allocate rewards more equitably than at the money options to those who deserve them. The Total Return at the money options can be dismissed, since they do not perform a satisfactory function in aligning the managerial rewards to those of the outside shareholders.

Each of the remaining options structures considered here has its individual merits. Total Return at the money forward options remove the management's motivation to reduce dividend payments and offer some improvement over conventional schemes in rewarding strong performance from management. Asian options not only provide insurance against the risk adjustment problem, but also provide a reasonable degree of immunity to the general market activity, reducing the windfall gains in a bull market but providing significant returns in conditions of high volatility. Down and Out options also provide protection against the motivation to increase risk and can provide much greater rewards than conventional schemes to management teams who perform well. Outperformance options also avoid both the free ride problem and the market risk problem, whilst simultaneously better allocating rewards to those managers who deserve them.

The results show that the proposed schemes increase the financial rewards to the better performing managers, at no extra cost to the company whilst offering a resolution or mitigation of the agency problems embedded in conventional schemes. The reasons for their current lack of use appear to stem principally from a shortage of insight into option pricing theory among managers, members of compensation committees and outside stockholders. The simplest of the proposals in this paper calls for the strike price to be set at the money forward. As is shown in Table 6, this procedure can offer significantly increased rewards to the better performing managers, and significantly reduced rewards to the poorer performing managers, at no extra cost to the company. However, those lacking understanding of option theory might well find the higher strike prices intimidating. Furthermore, if this simple modification to conventional schemes appears daunting, it is unlikely that the more exotic structures of Asian, Down and Out and Outperformance options will be regarded with any confidence.

Nevertheless, with appropriate understanding in place, it appears that, as with so much finance theory, a portfolio approach is called for. Managers could be offered a mix of the structures presented here. This adds a further dimension of decision for the compensation committee: not only is it now required to decide the value of the options package, but also to determine an optimal mix. However, it could be beneficial to reduce the burden by allowing the managers at least a limited choice in the portfolio mix, including type of option, choice of expiry date and strike price etc. Whilst this might appear to reintroduce agency problems, it

could also serve as a valuable signal of the managers' expectations to the outside shareholders.

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# BEHAVIOURAL ASPECTS OF CORPORATE GOVERNANCE

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## ABSTRACT

*The agency view of corporate governance requires effective monitoring to align the interests of the agent with those of the principal. This paper suggests that conventional proposals to reform corporate governance through legislation, codes of best practice, and the like, are necessary, but underestimate the pressures which reputational intermediaries face from inevitable conflicts of interest and bias. Various strands of the literature on corporate governance, cognitive research and behavioural economics are integrated to shed light on questions regarding the independence of boards of directors and external auditors.*

## 1. INTRODUCTION

This paper examines corporate governance from an agency perspective and investigates factors that question the efficacy of some of the means of monitoring the activities of senior decision makers in large corporations. The two main monitors considered here are the board of directors and the external auditor. The contribution of the paper is to integrate various strands of the literature on corporate governance, cognitive research and behavioural economics.

The governance debate identifies the central problem of the separation of ownership and control in the large corporation and centres on the alignment

**Corporate Governance**
**Advances in Financial Economics, Volume 9, 265–285**

**ISSN: 1569-3732/doi:10.1016/S1569-3732(04)09011-5**

of interests of the agent with those of the principal. Key factors in monitoring management performance are the composition and independence of outside board members, transparency, outside reporting, accounting standards, and shareholder composition. Optimal contracting is one of the dominant approaches to the alignment process and is designed to minimize agency costs through arm's length negotiations between the board of directors and senior management. Empirical research on corporate governance concentrates on quantifiable relationships between certain measures of corporate performance and conventional remedies to agency problems. While a vast body of research identifies important aspects of the agency problem, the present paper raises questions regarding the efficacy of some of the recommendations of the standard approach to monitoring and controlling managerial performance.

Issues of human cognition, perception and decision making under uncertainty receive somewhat less attention in the standard debate. Findings from cognitive psychology and behavioural economics document how individuals consistently violate some of the fundamental normative assumptions of the rational model. Decision making, especially under uncertainty, is not exclusively based on logical reasoning, but may also be subject to cognitive and judgmental shortcuts, leading to systematic and pervasive divergences from utility maximisation, especially with regard to inter-temporal maximisation. Logic predicts that a gatekeeper[1] would not sacrifice reputational capital for a small amount of financial gain from a single client. Despite the logic of this argument, gatekeepers have been observed to jeopardize their reputation for financial gains that are orders of magnitude smaller than the potential loss. Typical to most, if not all, cases of massive corporate fraud cases of the recent past was a clean bill of the firms' financial reports immediately prior to the discovery of the fraud. It is inconceivable that management was capable of deceiving the external auditor (and similar intermediaries) in all cases. What then moves a gatekeeper, or monitor, to acquiesce or participate in managerial fraud and risk sanctions and loss of reputation that far exceed any potential gain from acquiescence?

Simon (1959) referred to the need to distinguish between goals and behaviour of the individual:

> . . . to predict the short-run behaviour of an adaptive mechanism, or it's behaviour in a complex and rapidly changing environment, it is not enough to know it's goals. We must know also a great deal about its internal structures and particularly its mechanisms of adaptation (p. 255).

This paper asks why people deviate from what would appear to be in their long-term interest, with a particular reference to the monitors and gatekeepers that corporate governance relies upon. Section 2 introduces the principal-agent problem arising from the separation of decision and risk bearing, or more

traditionally the separation of ownership and control. It continues to define the roles of the board of directors and the external audit. Section 3 discusses potential solutions to the agency problem and introduces findings from cognitive, social and behavioural research that demonstrate how monitoring may be undermined by common human traits. Of particular interest is the question whether independence and impartiality of monitors should be reasonable assumptions of corporate governance. Arguments are introduced for a departure from arm's length outcomes. Section 4 takes a number of features of corporate governance and suggests some contrasting hypotheses between the traditional approach and the behavioural approach. The conclusion that human behaviour and cognitive shortcuts are intimately involved in the principal-agent setting has important implications for the corporate governance discussion. Persistent inconsistencies in the actual practice of corporate governance that have puzzled more conventional research to minimizing agency problems may be better understood when incorporating the human equation.

## 2. AGENCY COSTS AND MONITORS

This section introduces the principal-agent problem arising from the separation of decision and risk bearing. Subsequent to the definition of the problem follows a brief discussion of the principal roles of the two major monitors in corporate governance, the board of directors and the external auditors.

### *2.1. The Principal-Agent Problem*

This paper analyses aspects of organizational control of large corporations where managers do not bear the major share of the wealth effects of their decisions, seminally identified by Berle and Means (1932). Fama (1980) emphasizes the difference between a firm's "owners" and its "security holders" or "risk bearers." In the most general terms, the agency problem is interpreted through the contractual view of the firm (Coase, 1937; Fama & Jensen, 1983a, b; Jensen & Meckling, 1976).

The key issue in the agency framework is how to align the interests of the agent with those of the principal using specific instruments, including monitoring, performance bonuses, equity shares, promotion and dismissal (Shleifer & Vishny, 1997). This necessitates the construction of rules and incentives that define specific rights and duties, and the implementation of effective monitoring. It would be ideal if the two parties could devise a contract that regulates what the

manager can do with the firm's capital, how any surpluses get divided, and what happens if any of these covenants get violated. The problem with this is that in the real world it is not possible to contract for every contingency (Williamson, 1988). The next best thing to minimize agency problems would be perfect monitoring, but again this is impractical as the costs of monitoring rise very rapidly with the level of monitoring. The key to minimizing the agency problem then is to design effective contracts and monitoring systems, realizing that the manager keeps a considerable degree of freedom within these constraints (Grossman & Hart, 1986). In the optimal contracting view of the world, managers' incentives are closely aligned with those of the shareholders. Ideally,

> The . . . pay of . . . CEO's reflects intense competition among companies for the best managerial talent. Stock options and other typical forms of executive compensation are designed to provide incentives for performance. These incentives align the personal interests of managers with those of shareholders (Krugman, 2002a).

However, "*Nothing in the preceding paragraph is true*" (Krugman, 2002a). Krugman refers to the difficulties of effective monitoring, specifically with regard to monitoring of executive performance by the board of directors through compensation contracts designed to provide senior management with performance incentives. Specifically, he asks what happens to corporate governance if senior management captures the board and thus voids much of the latter's monitoring functions.

### *2.2. The Board of Directors*

The board of directors is the body designated to discipline the top management of the firm (Fama & Jensen, 1983a, b). The governance debate emphasizes the distinctive contribution that independent directors can make in helping to ensure that managers act in the interests of outside stockholders (Fama, 1980; Fama & Jensen, 1983a, b). The inclusion of independent directors on the board is seen to enhance the viability of the board as a control mechanism, and their role can be interpreted as that of "professional referees" (Fama, 1980; Fama & Jensen, 1983a). Outside directors are thought to lower the probability of collusion of management to expropriate security holders. Brudney (1982) accords to the independent director the role of "*an admonisher of proper behaviour*" (p. 632), where independence implies an adversarial role. Hermalin and Weisbach (2003) refer to the board of directors as an endogenously determined institution, and suggest that the reputation of a director as being amenable to a CEO's views is of value to the director. Results by Peasnell et al. (2001) support the conclusions of Fama and Jensen (1983a)

and Mayers et al. (1997) that outside directors, in helping to separate decision management and decision control, are a significant governance mechanism.

The demand for monitoring by outside directors is predicted by theory to be high when managerial equity ownership is low, especially under conditions of dispersed stock ownership (Fama & Jensen, 1983a, b; Jensen, 1993; Jensen & Meckling, 1976). With increasing managerial ownership, increasing incentive-alignment effects of equity ownership are predicted to reduce the demand for such outside monitoring (Denis & Sarin, 1999; Weisbach, 1988). Peasnell et al. (2001) find that the demand for outside directors declines as a decreasing function of managerial ownership. Yet, where independent board directors receive above average compensation for their role and/or are recipients of other direct or indirect financial benefits or remuneration, serious conflicts of interest develop which point to potentially compromised monitoring roles.

### *2.3. External Auditors*

An external audit serves to evaluate an organization's accounting procedures and to give an opinion on whether the financial statements are a true and fair representation of the organization's financial status. Specific issues deal with the firm's danger of failing, what particular risks the board and management should focus on, and compliance to existing accounting standards. Materiality, relevance, and reliability of financial information are some of the main qualities in the audit process. Whether financial statements give a true and fair view is ultimately a judgmental matter. The most crucial ingredient in establishing the value of an external audit, and in accepting the judgments made therein, is the independence of the auditor. The American Institute of Certified Public Accountants (AICPA) seems to be aware of the potential for bias and partiality when it states in its Code of Professional Conduct:

> In the performance of any professional service, a member shall maintain integrity, shall be free of conflicts of interest, and shall not knowingly misrepresent facts or subordinate his or her judgment to others (AICPA Code of Professional Conduct, Rule 102 – Integrity and objectivity, Adopted January 12, 1988).

The underlying assumption is that the auditing process can be impartial and free of bias, presumably if the auditor only "watches out" for this. It follows that the users of financial statements can rest assured of an unbiased assessment of the reporting companies' real state of affairs. Recent failures of the auditing process, however, have led to a growing cynicism with the accounting profession and highlight concerns that the ideal of impartiality and an absence of bias might be unrealistic assumptions.

## 3. POTENTIAL SOLUTIONS TO THE PROBLEM

This section looks at potential solutions to the principal agent problem: (a) The independence of the Board of Directors; and (b) Auditor independence. We introduce references to a number of psychological factors which can strongly interfere with the solutions conventionally relied upon to reduce agency costs.

### *3.1. Independence of the Board of Directors*

Independence of the board is thought to reduce insider pressure, and thus impact positively on measures of company performance. There is a large body of research showing statistically significant relationships between board independence and various accounting measures of earnings management[2] (for examples of this approach see Jones, 1991; Klein, 2000; Peasnell et al., 2000, 2001, 2002). Yermack (1996) finds a significant negative relationship between board size and Tobin's Q. Where independent boards are absent, firm valuations are quite low and leave minority shareholder rights, if they exist at all, open to frequent abuse (Black, 2001a, b). Corporate governance, as a broad measure, is closely positively correlated with the market value of firms (Black, 2001a, b; Black et al., 2003). Firms with high levels of accruals have been found to have low quality of earnings (Sloan, 1996), documenting that the level of accruals is less persistent than cash flows. Dechow and Dichev (2002), similarly, find a link between the quality of accruals and earnings persistence, primarily due to a positive correlation between levels of accruals and the magnitude of estimation errors, where large accruals signify low quality of earnings, and less persistent earnings.[3] There is, however, a lack of empirical evidence supporting a clear statistical correlation between measures of board independence and corporate financial performance (Bhagat & Black, 1999, 2000, 2002; Klein, 1998; Mehran, 1995). Director independence, to be effective in the sense of directors being professional referees (Fama, 1980), board monitors (Fama & Jensen, 1983b), or gatekeepers (Coffee, 2001, 2002) is difficult to measure. The presence of directors defined as independent can be tested for quite easily, but this should not be equated with independence in an objective sense, as "*. . . outsider domination may simply create a carefully calculated illusion of board independence*" (Langevoort, 2001b, p. 801). Formal independence, as demanded by many statutes on corporate governance, is not the same as functional independence.

Langevoort (2001b) describes the typical selection for membership on boards of directors based heavily on compatibility, fit, consensus, and cooperation. An overly strong emphasis on teamwork and conflict-avoidance can however be evidence of

capture by the CEO and also be particularly prone to the (negative) consequences of groupthink (Janis, 1972, 1982). This is contrasted by the independence, scepticism, and loyalty to the shareholders (and possibly other stakeholders) of an idealized "monitoring board" (Fama & Jensen, 1983a), which consciously acts to counter groupthink tendencies of an in-group (Janis, 1972, 1982). While boards would not be well-advised to act in a deliberately adversarial climate, some independence is clearly desirable. Insiders, on the other hand, are needed to give the board the necessary firm-specific knowledge. Peasnell et al. (2002) find that it is not necessary for all directors to be independent, using the conventional definition for independence, in order to achieve a markedly lower incidence of earnings management. In a similar vein, Bhagat and Black (1999) argue for a mix of inside and outside directors to obtain an optimal board structure.[4] Where independence truly counts is in controlling managerial conflict of interest situations (Langevoort, 2001a), the essential monitoring function of a board of directors. The problem is, that a director is inevitably subject to conflicts of interest. A director generally wishes to be re-elected, and also might wish to be elected to the board of other firms. A reputation as a troublemaker would severely undermine such chances.

Bebchuk et al. (2002) discuss limitations to board effectiveness in setting executive compensation and in preventing rent extraction, contrasting their interpretation with the optimal-contracting view where directors take an adversarial position versus management. Under the managerial power interpretation, a number of factors are seen to undermine the ideal of independence. Using compensation committees as an example, the nominal independence of directors is viewed sceptically due to the close and pervasive influence of management over the board. The members of the board and various committees have been selected in large part by the CEO or with his input. As such, the members of a board can be expected to show a certain gratitude for getting their positions. At the very least, one might expect a sense of reciprocity, which raises questions regarding the degree of independence of an outside director.

The very psychology of a board is tilted toward supporting the chief executive. Short of firing the CEO, open dissent is rarely found in board meeting. The benefits to a director from attempting to curb excessive executive compensation are low, while the potential costs are high. Even though stock based compensation has been increasing, the direct benefit to directors of curbing CEO behaviour seen as damaging shareholders is limited. The role of the board of directors in monitoring agent behavior is further devalued where the position of CEO and Chairman are combined. If the CEO/Chairman can elect the members of the board, how independent can they be, and how well can they undertake their role as referees? Further evidence of the diminished independence of directors might be seen in the fact that director's remuneration and perks are granted by the CEO/Chairman.[5]

Rather than mitigating the principal/agent problem between shareholders and managers, Bebchuk et al. (2002) and Bebchuk and Fried (2003) regard existing compensation practices for top management as part of the agency problem itself. Current pay arrangements may be seen as a potential remedy to the agency problem, but in reality directly contribute to the problem. Compensation arrangements are, thus, subject to both market forces (as is proposed by the optimal contracting view), which push towards a minimization of the agency costs, as well as to managerial power, which push the outcome towards one where the managers can extract rent. Under this interpretation, managers wield substantial power over setting their own compensation, effectively having captured the board of directors. If this is correct, then pay and perquisite packages of managers are more akin to rent extraction than evidence of optimal contracting, and are manifestations of the agency problem.[6] Under the optimal contracting view, boards are assumed to design and negotiate efficient compensation deals to provide managers with incentives to maximise firm performance. By contrast, Bebchuk et al. (2002) and Bebchuk and Fried (2003) argue that compensation features such as rewarding mediocrity and failure, golden goodbyes in excess of contractual obligations, at-the-money options, resetting and reloading of options, guaranteed bonuses and gratuitous payments,[7] are used to extract rent and to cover up (or "camouflage") the saliency of compensation arrangements.

### *3.2. Auditor Independence*

Bazerman et al. (1997) discuss the question of auditor independence given the existence of self-serving bias, in the structural framework of the auditing system and contemporary aspects of the auditing industry in the United States. The authors conclude that the intrusion of bias prevents an auditor from being truly impartial and independent. These independence issues might be exacerbated by increased competition in the auditing industry and by the increased importance of non-auditing services provided by accounting firms. Latter factors were, however, not found to be necessary for bias to influence judgement on audit matters.

More recently, Bazerman et al. (2002a, b) argue for more fundamental changes to the way accounting firms and their clients operate and propose that practices and regulations must take the existence of bias into consideration to increase the reliability of financial reports. This seems especially relevant since the authors found that self-serving judgments are not absolutely necessary to produce biased audits. The mere fact of the auditor being an agent of the audit client leads to judgments favourable to the client. Subsequent pressures to self-justify initial acceptance of accounting interpretations can lead to yet closer affiliation with the

client's view. A mandatory requirement to rotate auditors (at the individual partner as well as at the auditing firm level – a requirement partially implemented under the 2002 Sarbanes-Oxley Act) would serve to reduce such bias, however it should be recognized that bias cannot be totally eliminated. The desire to win future auditing contracts or to cross-sell non-auditing services (neither of which has been completely eliminated by the Sarbanes-Oxley Act of 2002) suffices to influence judgments. Even if repeat audits and the provision of all non-auditing services were disallowed completely, an auditing firm would hardly risk losing future contracts by having a reputation of being overly adversarial in negotiations with the senior management of audited firms. Bazerman et al. (1997, 2000, 2002a, b) come to the conclusion that auditor impartiality and complete independence from the client is impossible and exacerbated under existing institutional arrangements.

Gordon (2002), in reference to corporate auditing, calls the willingness for the auditor to exposure to low visibility sanctions – with the implicit sacrifice of inherent independence – a "race to the bottom," which offers a competitive advantage in attracting audit clients. Low visibility sanctions include the non-renewal of a contract, or not getting a consulting contract. Firing the accounting firm is a "high visibility sanction" (as this has to be disclosed in financial filings) that may well cause more harm to the sanctioning company than to the accountant, and is hardly a credible threat to an accountant who disagrees with management about an important accounting matter. Too vigorous an effort by management to force a particular accounting treatment may well trigger an accountant's resignation, also a material event. In contrast, low visibility sanctions carry no such publicity penalty. Allowing accounting firms to cross-sell various other consulting services, such as tax advice and internal auditing, to their audit clients, might magnify the susceptibility to low visibility sanctions. Gordon (2002) argues that it is not simply the fact that the accountant now has more at stake. Rather, the client now can avail himself to a larger, more discrete, toolkit to discipline the accountant's behavior.

A second compromising element of the value of an auditing firm's certification is the weakness of its internal governance mechanisms with regard to the firm's partners; an internal agency problem. Services are generally delivered by specific agents of the firm. In the case of the Andersen/Enron relationship, it was the Houston partner who primarily dealt with this client. The compensation of this partner was significantly tied to Enron billings both for auditing services and consulting services, and Enron was likely the largest client for this office. Losing this client would have been catastrophic to the Houston office. The forces that can help undermine the independence of the firm are, thus, possibly magnified in the case of the relationship partners. The consequent threat to the partner's independence and the resulting risk to the auditing firm's reputation are foreseeable.

As noted earlier, a distortion of the assessment in a firm's financial status may be due to unconsciously biased judgments, and need not necessarily be caused by corruption and fraud on account of the auditor. In fact, the existence of unconscious bias may represent a more pernicious problem with corporate auditing than is commonly accepted. The subjective nature of accounting and the tight relationships between auditing firms and their clients is particularly visible in the dealings of the individual auditing partner. The Sarbanes-Oxley Act aims directly at fraud, but fails to strongly address the problem of bias. Unconscious bias cannot be deterred by the threat of punishment and Langevoort (2001a) refers to:

> a growing consensus that the law must do something more (or different) than simply relying on its conventional strategy of vicarious corporate liability in order to induce good monitoring (p. 2).

The problem for policy makers is how to minimise the unconscious biases the auditor is subject to in everyday dealings with clients. Impartiality is difficult to achieve, some would say impossible, as all individuals are biased towards their own interests or prejudices. While an auditor may indeed be of the highest integrity, and consciously strive towards providing judgements that are "true and fair," psychological research points to the difficulty of escaping the biases and heuristics that skew perception.

Since biases are an inevitable result of working closely with the client, and by their very nature intrude unconsciously (Bazerman et al., 1997, 2000, 2002a, b; Festinger, 1957; Staw, 1976, 1981), sanctions will be greatly diminished in deterring undesirable behaviour. Self-serving bias refers to the unconscious and unintentional biasing of judgement commensurate with the self-interest of the individual. Information is selected and interpreted to support a prior position. It is near impossible for individuals to interpret information in an unbiased manner. Bias is not materially influenced by presenting the individual with evidence of the existence of bias, and is typically reduced only in cases where facts are presented prior to the subjects choosing roles, i.e. prior to subjects being placed in a situational context (Bazerman et al., 1997, 2002a). The auditing relationship is eminently a role position. Auditor self-serving bias is exacerbated by a number of characteristics. These include the distance and anonymity between the potential victims of misrepresentation and the auditor, as opposed to the closeness and familiarity of the people in the client firm who could be hurt should a negative opinion be made in the audit. Also, repercussions from a negative opinion are likely to be immediate and substantial, as opposed to the temporally distant and uncertain negative repercussions from having made a mis-statement. It should be re-emphasized that while financial interests in a relationship can be a substantial factors in strengthening self-serving bias in the individual, this is not a requirement

for the establishment of bias. Fraud or intentional misleading is not necessary for the provision of false, incorrect, or grossly misleading audits.

### *3.3. The Nature of Bias*

An individual's opinions tend to be unconsciously influenced by self-interest and correcting for this bias is an imperfect process (Bazerman et al., 2000; Kunda, 1990). Individuals are subject to unconscious bias even when this is clearly demonstrated to the individual, where the concept of bias is clearly understood, and where individuals are explicitly instructed to avoid bias (Babcock et al., 1993, 1995). Bias typically enters at the perception stage (when people form an opinion or judgment on a matter) and reflects the individual's prior believes. Information that supports the individual's position is weighted heavily, while information that undermines a position is typically discounted. Individuals are unaware that they are highly selective in their perception and frequently deny that they are interpreting information in a self-serving fashion (Diekmann, 1997; Diekmann et al., 1997).

### *3.4. Group Decision-Making*

Research on group psychology shows that it is uncomfortable to be a sole dissenting voice. Janis (1972, 1982) described how very bright people in highly cohesive groups could make very bad decisions. Shared illusions, including a sense of invulnerability, presumptions of unanimity, suppression of personal doubt (self-censorship), and taboos against antagonizing members of the group conspire to lead to a selective bias towards accepting the status quo and a suppression of alternative interpretations. Janis (1972) described "groupthink" as

> a mode of thinking that people engage in when they are deeply involved in a cohesive in-group, when the members' strivings for unanimity override their motivation to realistically appraise alternative causes of action (p. 9).

Boards of directors could be defined as the ultimate corporate in-group and may, by the very nature of their close interaction with the senior management of a firm, be highly prone to the groupthink phenomenon.

### *3.5. Escalation of Commitment*

Decision makers often become over-committed to prior decisions, and continue to invest resources in a failing project (Fox & Staw, 1979; Staw, 1976; Staw &

Ross, 1987). Escalation to commitment has also been investigated as *entrapment* (Fox & Staw, 1979), *too much invested to quit* (Teger, 1980), and *throwing good money after bad* (Garland, 1990). Individuals are especially prone to escalation if they are responsible for the initial decision to go ahead with a project.

Characterized by a stubborn refusal to recognize sunk costs as sunk, a number of psychological, social and organizational determinants work together to potentially lock the decision maker into an escalation situation (for excellent reviews of these factors see Staw & Ross, 1987; Nulden, 1996). An individual tends to seek confirmation of an earlier decision in order to avoid cognitive dissonance (Festinger, 1957). By committing new and additional resources, it may be possible to "turn a situation around" and to show the ultimate rationality of an original decision. Staw (1981) finds that even where the effort ultimately leads to failure, an apparent norm for consistency values persistency higher than the perceived indecisiveness of a change of "horses in mid-stream." It has been suggested (Abelson et al., 1968; Staw, 1976; Weick, 1964) that individuals whose decisions lead to negative or sub-optimal consequences might cognitively interpret these consequences in a more positive light than the situation would appear to an observer who was not responsible for the initial decision. This would indicate that individuals selectively filter information to maintain their commitment to a course of action. Part of the motivation for doing this might be a desire to appear rational (Festinger, 1957; Kahneman & Tversky, 1974; Nisbett & Ross, 1980). Hence, justification for previous decisions and a perceived norm for consistency combine to give a powerful incentive for sticking to a committed path.

### *3.6. Prospect Theory*

Kahneman and Tversky (1979) demonstrate that one central tenet in economic theory, that sunk costs should not form the basis for future decisions on the allocation of resources, might not be strictly followed by individuals. Kahneman and Tversky's prospect theory demonstrates, that for individuals sunk costs might not be sunk at all but can and do enter future decision-making. Human beings have a strong aversion to losses and the propensity for risk-taking depends on an individual's position relative to a potential loss. Gains and losses are not considered in the same way, nor given the same weight. Under prospect theory, an individual's first priority is not to lose. Gains are secondary to the "no loss" rule. Framing an outcome in terms of possible loss motivates a person more than framing the same outcome in terms of possible gain. Negative (loss) framing makes the person more risk seeking. Individuals will go to great lengths, including taking higher risk positions and hiding losses, in order to avoid recognizing a loss (Bratton, 2002).

Accordingly, when faced with a serial decision following a losing investment, the human mind tends not to assess the new decision from a neutral reference point, but rather from a loss frame, at times resulting in extreme risk seeking. Initial small losses can set an individual off on increasingly risky attempts to hide subsequent losses (for an insightful article on the effects of loss-avoidance on individuals see Krawiec, 2000).

### *3.7. Sub-Optimal Monitoring*

Langevoort (2001a) comments on the fact that a firm has to balance the potential costs from sanctions and reputational loss due to legal non-compliance against the direct and indirect costs of firm-internal compliance initiatives. The author suggests that courts and standard setters generally underestimate the direct and indirect costs of compliance procedures within the firm. Given liability and reputational threats, it may be in the interest of the firm to implement a less-than-effective system of internal controls. If society under-enforces the law in such a way that firms do not fully internalize the risk of noncompliance, then it would be rational to have a system that tolerates some level of "profitable" violations. In addition, the act of monitoring itself is likely to uncover some violations that otherwise would have remained hidden. Line managers may not want to implement efficient systems because there is an asymmetry in their incentives: they benefit substantially from the profitability associated with undetected violations but, on the whole, may suffer little in terms of personal exposure when violations by subordinates are detected.

Even where a firm's senior managers or its board of directors genuinely favour a high commitment to compliance as a principle, there are challenges to achieving the desired level of compliance. Ongoing monitoring efforts depend on supervisor motivation, and compensation contracts are often based on meeting measurable targets. A side effect may be that the stronger performance-based incentives are, the less motivation there may be for strict legal compliance. In addition, it is unpleasant to discover a breach in compliance and having to confront a colleague, especially if one personally hired that staff member. Discovery of a wrongdoing would question the judgement of the manager who hired the wrongdoer, which can easily lead to efforts of trying to rationalize the wrongdoer's actions.

### *3.8. Reputation*

Reputational considerations ideally provide managers and control agents with an incentive not to deviate significantly from expectations on performance

(Fama, 1980; Fama & Jensen, 1983b; Jensen & Meckling, 1976). The problem with reputation is that it inevitably runs into a backward recursion problem (Bulow & Rogoff, 1989) when the future benefits from being honest are dwarfed by the potential return from being dishonest. There will be situations where the anticipated future compensation changes are insufficient to prevent self-dealing or negligence. This can include endgame situations (where the individual is at the end of his career or assignment), scenarios where the reputational loss accrues mainly to the firm but not to the manager, and situations where the returns to the individual from non-contractual activities outweigh any expected future losses. In addition, sanctions handed out after some of the recent corporate debacles do not make it obvious whether there is a significant loss of reputation in practice, i.e. whether sanctions handed out are severe enough to be a real deterrent.[8] Finally, an individual may not be aware of the magnitude of the risk to reputation, or might rationalize these to a minimum.

## 4. CONTRASTING THE TRADITIONAL AND THE BEHAVIOURAL APPROACH

At this point it might be useful to briefly contrast some hypotheses between the traditional approach and a behavioural approach. For example, it is frequently assumed that increasing managerial ownership leads to a greater alignment of interests. However, the alignment effect may be overstated if increasing ownership leads to excessive remuneration or perk consumption. An emphasis on managerial ownership can provide the insider with a motivation to inflate the short-term value of a firm's stock in order to profit from the sale of options or shares. A bias effect of ownership may result in the interpretation of perks and compensation as endowments inherent to the position, as opposed to being rewards (and incentives) for good performance. This may indicate that increases in managerial ownership are value increasing, but perhaps at a decreasing rate.

Favouring ownership by directors might be expected to provide them with an interest in the value of the company. However, such investments are generally too small (and too easily divested) to outweigh the disadvantages from an overly critical assessment of top management performance by a director. Share ownership by directors may magnify existing conflicts of interest for these monitors, severely limiting any alignment of interests effect. Ownership provides a motive towards an increase in the value of shares or options, which could be negatively affected by the discovery of any misstatements or an accusation of allowing overly generous compensation to senior management. Hence, ownership may yield perverse motivational/performance results, and short-term motivations, due

to outcomes that appear certain, can trump long-term concerns about reputation and liability, both of which are in the future. Self-serving biases and skewed risk perceptions place further limits on reputation as a motivator. The traditional approach assumes that long-term considerations provide a powerful incentive to maintain a reputation for honesty, reliability, and performance. This is contrasted by scores of firms and individuals who chose to risk, and lose, the considerably larger benefits from their reputational capital for a short-term gain.

The use of goals and promotions within the firm is frequently considered to provide benefits in terms of work effort and persistency. Motivation theory teaches that people increase their effort when they attempt to attain a difficult goal. Auditing firms, like many other organizations, frequently apply such incentives as part of their compensation and reward structure. While the use of goals can motivate constructive behaviour, it is less appreciated that it may also induce excessive risk taking, escalation of commitment, and unethical behaviour, especially where a goal is tantalizingly near (Schweitzer et al., 2002). Where goals are seen as reference points by an individual (Heath et al., 1999), this can lead to a misalignment of the interests between an individual or office, and the firm as a whole. This problem is particularly manifest where the benefits from working with a client are more concentrated in individual partners and offices, while the cost of litigation are more widely distributed across the firm.

The cross-selling of audit and non-audit services could be argued to strengthen the independence of the auditing firm, perhaps because the latter now would have more to lose from having it's reputation sullied by making a mis-statement.[9] A rational actor would certainly be expected to care more when there is more at stake. However, it is not obvious that the level of income is the most relevant determinant of behaviour here. According to prospect theory, outcomes are judged relative to a specific reference point, losses weigh heavier than gains, and loss aversion is strongest near the reference point. Hence, it could well be the fear of losing a client or a contract that is the most motivating factor. In addition, whilst a firm may wish not to be seen as reckless or fraudulent, it is its agents that collaborate with the client. The rationale that assumes that a firm would not engage in activities that harm its reputation or survival has to content with the firm's fallible employees. Individual members of auditing firms face a very different set of incentives than the auditing firm. As Gordon (2002) suggests, treating individual offices as profit centres may be an economically sensible approach for a multinational accounting firm, but it does increase the risk to the firm's reputation from its own partners' actions.

At the firm level there are conflicting incentives for establishing a proper level and intensity of internal monitoring. Internal monitoring is of importance to avert vicarious corporate liability. It is sensible for the firm to try to minimize the

threats of legal sanctions and reputational harm from corporate misconduct of its employees. However, inducing agents' compliance with rules and standards through monitoring is rather more difficult to achieve than is sometimes assumed. Aggressive monitoring typically entails consequences that complicate the balancing of costs and benefits. A number of psychological reasons diminish the efficiency of line supervisor monitoring. Together with the possibility that the implementation of a less-than-effective internal control system may be quite intentional, these factors combine to yield a bias towards sub-optimal monitoring.

## 5. CONCLUSION

One of the key messages of the more recent corporate debacles is perhaps that excessive reliance has been placed on the roles of monitors in the traditional approach to corporate governance. The independence and impartiality of the monitors and gatekeepers cannot be assumed to be sufficiently strong to prevent significant managerial self-dealing and fraud. Findings from cognitive research, group decision making, and recent work on managerial power and auditor independence suggest that some of the traditional means to minimizing the agency problem are flawed in their description of how individuals behave in real world settings. This has implications for the study, practice, and regulation of corporate governance. At a minimum, this would suggest that existing models have to be adjusted to incorporate the effects of behavioural and emotional factors on choice making. The monitoring model of corporate governance, as it stands, may place undue reliance on the independence and impartiality of monitors and gatekeepers. Practitioners in the field of corporate governance may wish to reflect on the deterrence effects of rules and regulations that ignore the human ability to rationalize their own actions.

## NOTES

1. Coffee (2002, p. 5) defines this group as "Inherently, gatekeepers are reputational intermediaries who provide verification and certification services to investors."

2. "Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company, or to influence contractual outcomes that depend on reported accounting numbers" (Healy & Wahlen, 1998, p. 6).

3. Specifically, these authors find that accrual quality is negatively related to the absolute magnitude of accruals, the length of the operating cycle, loss incidence, and the standard deviation of sales, cash flows, accruals, and earnings, and positively related to firm size.

4. Hermalin and Weisbach (2003, p. 15) suspect that "we tend to see independence as the true causal variable, with size, compensation, and board composition as correlates. A board made up of directors who wish to be independent of management will prefer to be paid with incentives and to arrange themselves, in terms of size and composition, in a way that best facilitates oversight of management." This suggests that the causality might run from the functional form of independence to the observable characteristics of independence (the formal form).

5. What Krugman (2002b) calls the invisible handshake in the boardroom.

6. The contract of Robert Annunziata of Global Crossing is one example of a weak pay/performance link and a lack of board oversight. His tenure as CEO ended on March 3, 2000, after just one year on the job. As the company's performance levelled off, Mr. Annunziata's compensation did not diminish commensurately (the company filed for Chapter 11 bankruptcy in January 2002). "Instead, the contract included pay guarantees and perks that indicate a lack of oversight by the board. Just for showing up, he got a $10 million signing bonus and two million stock options at $10 a share below market. He got our favorite oxymoron – the 'guaranteed bonus' of not less than half a million dollars a year. The make and model of the Mercedes the company would buy for him and his wife is spelled out in the contract. He got the use of the corporate jet for commuting until such time as he might find it appropriate to move. And to keep him from getting homesick, his family got first class airfare to come see him once a month. Including his mother." Nell Minow, 1999 COMPANY RESPONSE REPORT. http://www.thecorporatelibrary.com/ceos/ – Forbes Magazine (April 19, 1999) adds that Annunziata's predecessor lasted only 10 months. His options for that period equalled $170 million.

7. Company loans to senior managers can also be seen as evidence of managerial power and rent seeking. These loans were frequently "forgiven" by the firms. The Sarbanes-Oxley Act of 2002 now prohibits such loans. Prior to the adoption of this Act, some three-quarters of the 1500 largest U.S. companies extended such loans to their executives (King, 2002). In the last year of Enron's existence Ken Lay, former chairman and chief executive, borrowed some $70 million from a line of credit provided by the company and repaid it with stock earlier granted by the company. Under the terms of his employment contract, Lay could borrow up to $7.5 million at a time on a revolving basis. The line of credit allowed Lay to borrow up to the limit, pay it back (with stock), and then immediately borrow it again (Houston Chronicle, February 15, 2002).

8. The demise of Arthur Andersen may well be an exception. Fines of $300 million announced by Manhattan District Attorney Robert Morgenthau and the U.S.'s Securities & Exchange Commission against Citigroup and J. P. Morgan for selected transactions with Enron are among the biggest ever levied in this type of case. Nevertheless, this sum represents less than one week's profits of these two banks and may just be treated as a cost of doing business. No jail sentences have been passed on any bankers. Coopers and Lybrand were fined £1.2 million and also asked to pay £2.1 million in costs for their role in the scandal surrounding the Maxwell group of companies. Fees received from Maxwell were around £25 million. The four audit partners implicated in the case continued to be employed by the firm, and were not disqualified from public practice. Even the $1.4 billion settlement in April 2003 imposed on Salomon Smith Barney, Credit Suisse First Boston and eight other investment banks over the close relationships between analysts and companies and preferential treatment given to certain investors in initial public offerings is hardly a deterrent, given the profits of these firms in 2003. For example, J. P. Morgan was

fined $80 million, compared to 4th quarter 2003 earnings of $1.86 billion. Merrill Lynch, fined a total of $200 million, can offset this with 4th quarter 2003 reported net income of $1.2 billion (Reuters, January 21, 2004, and SEC, April 23, 2003 press releases).

9. Goldman and Barlev (1974) suggest that auditor independence is increased due to increasing auditee dependence on the auditor.

## ACKNOWLEDGMENTS

The author is grateful to Professor John Hudson, Professor Anil K. Makhija and an anonymous referee for valuable comments and suggestions.

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# ON THE MONITORING ROLE OF THE BOARD OF DIRECTORS: THE CASE OF THE ADOPTION OF CADBURY RECOMMENDATIONS IN THE U.K.

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**ABSTRACT**

*I test empirically the hypothesis that the monitoring role of the board of directors depends on the severity of the agency problems and the amount of information needed to monitor. I show that in high growth firms, where the agency conflicts are low and managers are likely to reveal more information to get advice, boards are more independent but less likely to monitor, while in low growth firms, boards are less likely to be independent, but the relationship between firm value and board independence is strong. Overall, boards become more independent but monitor less as firms' growth opportunities increase, suggesting that managers trade off the amount of information released to the board to get a better advice and to mitigate the monitoring role of the board.*

**Corporate Governance**
**Advances in Financial Economics, Volume 9, 287–326**

**ISSN: 1569-3732/doi:10.1016/S1569-3732(04)09012-7**

## 1. INTRODUCTION

Research on corporate governance has identified the board of directors as one of the internal control mechanisms designed to insure that management teams act in the best interests of shareholders.[1] Along with other internal control mechanisms, such as managerial ownership and executive compensation, and external mechanisms such as institutional ownership and the market for corporate control, a small board that includes a large proportion of outside directors is viewed as a primary means for shareholders to exercise control on the top management. However, the empirical evidence provided to-date of the effectiveness of the board of directors is mixed. Hermalin and Weisbach (2003) review the extensive U.S. evidence and conclude that higher proportion of outside directors are not associated with superior firm performance, but are associated with better decisions concerning such issues as acquisitions, executive compensation, and CEO turnover. They also find that board size is negatively related to both general firm performance and the quality of decision making; and that poor firm performance, CEO turnover, and changes in ownership structure are often associated with changes in the membership of the board. Studies outside the U.S. also provide mixed evidence on the monitoring role of the board. For example, Kaplan and Winton (1994) report that outside directors in Japan are appointed after poor performance and that such appointment stabilise and modestly improve firm performance. However, Kang and Shivdasani (1995) find a weak effect of the presence of outside directors and the relationship between the CEO turnover and performance in Japan. In Europe, the monitoring role of the board varies across countries. In many European countries shareholder welfare is not the only or even the primary goal of the board (Wymeersch, 1998). One exception is the U.K. where the board is appointed to focus on shareholder wealth maximisation. Under this system, Dahya, McConnell and Travlos (2002) find a strong relationship between the presence of outside directors and the sensitivity of CEO turnover to performance. Similarly, Franks, Mayer and Renneboog (2001) find that boards dominated by outside directors discipline poorly performing managers. However, their sample is limited to only poor performing companies. Using a larger sample of U.K. companies, Lasfer (2003) shows that when managers hold large stakes, they tend to dominate the board and reduce its independence and effectiveness.

The purpose of this paper is to extend this literature by testing empirically the effectiveness of the board of directors when the severity of the agency problems is high and the role of the board is dual as a monitor and an advisor of management. First, following previous empirical evidence (e.g. Denis & Sarin, 1999; Peasnell, Pope & Young, 2001; Weisbach, 1988), I test the hypothesis that, since the board is appointed to help control the agency problems between managers and

shareholders, the monitoring role of the board will depend on the severity of the agency problem. Second, I relate the structure of the board to the manager's need for advice. When the board monitors and advises management, managers are expected to disclose an optimal amount of information to maximise the advisory role and to minimise the monitoring role of the board.[2] Adams (2002) models these two roles and argues that the better the information provided by the CEO, the higher the benefits from the board's advice but the higher the costs from the increase in the board's monitoring. Her model predicts that the board is likely to choose to pre-commit to reduce its monitoring of the managers to encourage them to share their information, suggesting that in some firms where the value of communication is high, the board will reduce its monitor intensity.

I use firms' growth opportunities as a proxy for the agency problem and the optimal amount of information the CEO has to disclose to the board.[3] In high growth firms, the agency problems are likely to be low (Jensen, 1986) and managers are expected to require strong advice from the board because of the complexity in their decision-making, but the behaviour of managers is difficult to observe and to monitor because of their discretionary investment opportunities, and the proprietary information they hold. Thus, the board is likely to opt for a friendly relationship with the management to obtain the information needed. As in Gutierrez-Urtiaga (2002), I expect high growth firms to have a high proportion of non-executive directors to maximize the advisory benefits, and, as in Adams (2002), the relationship between firm value and board structure will be weak. This later proposition is also consistent with Smith and Watts (1992) who argue that high growth firms are likely to rely on other control mechanisms to mitigate their agency conflicts because, for these companies, the agency conflicts are not driven by the use of the free cash flow but rather by the level of information asymmetries. In contrast, in low growth firms, the advisory role of outside directors is not likely to be substantial as decisions are not complex and information is relatively easily accessible. In this case, the board of directors is likely to spend more time monitoring managers, leading to a positive relationship between board structure and firm value. However, managers of these firms are expected to appoint a low proportion of non-executive directors to mitigate the monitoring role of the board. This proposition is also consistent with agency theory which predicts that low growth firms suffer more from the agency conflicts over the use of free cash flow, and the board is expected to mitigate the managers' tendency to over invest by accepting marginal projects with negative net present values (Jensen, 1986).

I use a unique data set on board structure of a large number of U.K. companies to test these hypotheses. The U.K. environment offers an ideal testing ground for such tests as companies have a sole board system, different from the dual board system found in many other European countries, and, unlike their U.S. counterparts,

U.K. companies are required to adopt the Cadbury (1992) recommendations by appointing at least three non-executive (outside) directors and splitting the roles of the CEO and the chairman. Although the adoption of these recommendations is not compulsory, the London Stock Exchange requires companies to explain in their annual accounts any deviation from these rules. This system implies that companies that do not comply are likely to be those where managers do not need advice from the board and resist monitoring. I also test the sensitivity of the results using data in the pre-Cadbury period when companies choose freely their board. The data on board structure includes the number of directors, the proportion of non-executive directors, the split of the roles of the chairman and CEO, and the appointment of a non-executive director as a chairman.

Consistent with the aforementioned hypotheses, I find that high growth firms are more likely to have a high proportion of non-executive directors and to split the roles of the CEO and the chairman. For example, in the pre-Cadbury period 32% of high growth companies had already adopted such a board structure, compared to 22% in the low growth sample ($p = 0.00$). In the post-Cadbury period, the respective proportions are 63 and 58% ($p = 0.06$). I then divided the sample into growth quintiles and show that the distribution of the proportion of non-executive directors on the board, the split of the roles of the CEO and the chairman, and the appointment of a non-executive director as a chairman across growth levels is monotonically distributed. These results suggest that high growth companies appoint outside directors to benefit from their advisory role while, in low growth firms, managers opt for a lesser independent board to minimise its monitoring role.

For both sets of firms, the relationship between firm value, as measured by Tobin's *Q*, and the number of directors is negative and significant, suggesting that larger corporate boards result in poorer communication and decision making. These results are consistent with previous evidence (e.g. Yermack, 1996). However, I also find that the relationship between firm value and number of executive directors is negative and significant for both low and high growth firms, suggesting that internally-dominated boards destroy value. The analysis of other board structure variables shows significant differences across the two sets of firms. In particular, for high growth firms, the relationship between firm value and board structure is weak or even negative. For example, the coefficient of the proportion of non-executive directors in the regression of Tobin's *Q* on board structure and other control variables is negative but not significant ($-0.05$, $p = 0.87$). In contrast, for low growth firms, the coefficient is positive and significant (0.33, $p = 0.05$). As suggested by Adams (2002), the results imply that outside directors of high growth firms trade off their monitoring role for a good relationship with the managers to secure the disclosure of information. Similarly, the relationship between firm

value and the split of the roles of the chairman and CEO is weak for high growth firms and positive and significant for low growth firms. For low growth firms the responsiveness of firm value to board structure is steeper in the post- compared to the pre-Cadbury period, suggesting that the economic significance is also higher and that the quality of the board is valued more in the post-Cadbury period.

Finally, the results show that growth firms are more likely to change their board structure, but by making their boards more independent, they do not necessarily increase their value (as measured by Tobin's *Q* or stock returns). In particular, high growth firms that have never adopted Cadbury over the sample period generate higher abnormal stock returns than companies that adopted the recommendations. In contrast, low growth firms that have never adopted the Cadbury code generate significantly lower returns than firms that have always adopted the code. These results suggest that the benefits from having outsiders on the board accrue only to low growth firms.

The rest of the paper is structured as follows. The next Section presents the theoretical background. Section 3 describes the data and the methodology. Section 4 presents the results and the conclusions are in Section 5.

## 2. THEORETICAL BACKGROUND

### *2.1. The Monitoring Role of the Board*

Previous studies provide mixed evidence on the monitoring role of the board of directors. The literature has focussed mainly on the relative proportion of outside directors and the size of the board as monitoring devises. Hermalin and Weisbach (2003) review the evidence and conclude that outside directors do not, in general, result in higher performance. Jensen (1993) and Hermalin and Weisbach (1991) argue that CEOs often end up controlling the composition of the board and lessening its monitoring role. Empirically, Denis and Sarin (1999), Hermalin and Weisbach (1991), and Weisbach (1988) find that insider ownership is inversely correlated to the proportion of outside directors. In addition, larger boards reduce value because of the increase in the communication problems among board members. For example, Yermack (1996) report a negative relationship between board size and firm value.

Bhagat and Black (1998) argue that previous studies do not tell us how board composition affects the overall firm performance as companies with independent boards could perform better on particular tasks, yet worse on other unstudied tasks, leading to no net advantage in overall performance. In addition, they show that previous results (e.g. Weisbach, 1988) have marginal effects on firm value, while

others (e.g. Yermack, 1996) are not strong to the choice of performance measures. Instead, they analyse the relationship between board independence and long-term performance of large firms in the U.S. to find that firms with the most independent boards perform worst that firms with more balanced boards. Similarly, Bhagat and Black (2001) show that low profitability firms increase the independence of their boards of directors but there is no evidence that firms with more independent boards outperform other firms. Finally, the relationship between board structure and firm value is found to be dependent on the testing methodology used. For example, Agrawal and Knoeber (1996) examine the inter-relationships among seven "control mechanisms" using a six-equation simultaneous model to find that the proportion of outsiders on the board is significantly negative determinant of firm value but with the three-stage least square method the relationship is insignificant.

### *2.2. Board of Directors and the Severity of the Agency Conflicts*

The arguments presented in the previous section suggest that the literature is not clear as to the optimal board structure that minimises the agency costs and maximises firm value. One possible reason for the mixed results is that most previous studies assume that boards are homogeneous across firms. In reality the precise composition and monitoring efficiency is likely to be a function of the firm as well as the board characteristics. Since boards are appointed to control the agency conflicts between managers and shareholders, the monitoring role of the board is likely to depend on the severity of the agency conflicts. Thus firms with high current or potential agency conflicts are likely to benefit by having a board that monitors. Previous studies provide some evidence on this relationship. For example, Denis and Sarin (1999) and Weisbach (1988) find that as the level of managerial equity ownership declines, companies increase the number of outside directors. Peasnell et al. (2001) provide evidence of a positive association between the monitoring benefits of outside board members and the severity of the agency conflicts in the context of earnings management. These arguments suggest that the boards of firms with high agency conflicts will be more independent and will create value.

### *2.3. Board as an Advisor and a Monitor of the Management*

Lorsch and MacIver (1989) argue that non-executive directors spend most of their time advising managers on strategic issues such as investment and financing. However, in order to undertake this advisory role, information should flow

from the managers to the board members. Noe and Rebello (1997) argue that outside board members are uninformed. They will rely on the CEO to get the required information to accomplish this advisory role. In this case, the better the information provided, the better the advice. However, to fulfill their monitoring role, non-executive directors are likely to use this information to decide on whether the current management team is the best possible leadership for the firm. Thus, the bargaining power between managers and the board is driven by the dual role of corporate boards as advisors and as monitors and managers are likely to provide the minimum amount of information to get enough advice and, at the same time, to minimize the probability that the board will fire them.

In normal circumstances, the monitoring and the advisory role are complementary because the better the information disclosed the better the advice and the evaluation. However, Adams (2002) argues that non-executive directors are likely to play off these two roles to make managers disclose more information and to govern efficiently. She suggests that when managers provide better information to the board, they are likely to get good advice on their decision. However, with this better information, the board is able to monitor the management more. She considers the board's monitoring intensity as a function of outsiders on the board. Her model predicts that when the propensity by managers to share information is low, non-executive directors are likely to pre-commit to a lower monitoring to incite managers to share private information.

Empirical evidence provided to-date on the advisory role of the board is limited. Agrawal and Knoeber (2001) analyse the advisory role of outside directors with a political background in the context of their better "knowledge of government procedures and their insight in predicting government actions" (p. 180). Their sample includes 264 manufacturing firms from the 1987 "Forbes 800" list. They show that firms appoint politically experienced directors to provide insights into the working of governments. Such directors with political or legal backgrounds are more prevalent amongst larger firms and are more important to firms with high exports, lobbying and sales to the government. Klein (1998) reports that companies appoint affiliated directors for the exchange of information. Adams (2002) uses board committee size and meeting data to estimate the proportion of director meetings allocated to monitoring tasks and the remaining time for advisory roles. She also uses CEO shareholdings as a proxy for managerial incentive alignment and CEO tenure and position as a measure of career concerns. She shows that monitoring first decreases and then increases as ownership and tenure increase. These results are consistent with the proposition that managers trade off the information they disclose to the board. These arguments suggest that the monitoring role of the board will depend on the level of information conveyed by the managers to outside board members.

### *2.4. Hypotheses Tested*

The above analysis suggests that the effectiveness of the board depends on the severity of the firm's agency conflicts as well as on the information disclosed by managers. In this paper, I use growth opportunities as a proxy for these two hypotheses. In terms of the composition of the board, these two hypotheses have different predictions. From the agency perspective, high growth firms are less likely to have a high proportion of outside directors for a number of reasons. First, as growth opportunities increase, the observability of manager's actions decreases and the agency costs of monitoring increase.[4] Thus, high growth firms are likely to adopt alternative control mechanisms to board monitoring including a higher compensation and greater use of stock options (e.g. Gaver & Gaver, 1993; Smith & Watts, 1992). Second, Baysinger, Kosnik and Turk (1991) suggest that insiders are more willing to undertake uncertain projects if they are well represented on the board and, therefore, less dependent on the evaluation and judgement of outside directors. Third, Bathala and Rao (1995) argue that high growth firms will bring more insiders onto the board to integrate the practical activities of the firm around its strategies. Consistent with these arguments, Bathala and Rao (1995) report a negative relationship between the proportion of outside directors and firm's growth rate. This suggests that, since managers of high growth firms have discretion over outside directors in decision-making, they negotiate a contract to secure a board with the necessary skills to evaluate their discretionary decisions, i.e. a board dominated by executive directors. Such a board will also be able to evaluate managers on the basis of future growth options rather than present performance.

From a perspective of the flow of information from the CEO to the board, Gutierrez-Urtiaga (2002) argues that high growth companies will have more independent boards because shareholders will require them to do so but they will set a limit to this proportion to induce the CEO to disclose the information required for efficient decision making. Her model predicts that low growth companies should have a lower proportion of independent outside directors so that the CEO will have a greater discretion in the selection of the projects and will be induced to cooperate with the directors. In contrast, high growth firms are expected to have a higher proportion of outside directors to limit the number of projects approved. Consistent with these arguments, Hossain, Cahan and Adams (2000) and Hutchinson (2002) find a positive relationship between the proportion of outside directors and firm's growth opportunities, suggesting that board structure of high growth firms is likely to be more independent than that of low growth firms. To distinguish between these conflicting arguments, I set up the following testable hypothesis:

**$H_1$.** The board structure is independent of the firm's growth opportunities.

The empirical prediction on the relationship between firm value and board structure is mixed. In the agency literature where boards aim at monitoring the managers' decisions, board structure is expected to create value in high growth firms because, as argued by Hossain et al. (2000), these firms require more monitoring given the high managerial discretion in decision-making, which will lead to opportunistic behaviour such as the empire building when managers make diversified acquisitions or under-investment problem associated with growth firms (e.g. Gaver & Gaver, 1993; Smith & Watts, 1992). In this case, board structure of high growth firms should be positively related to firm value. However, other studies show that the role of the board of directors as a monitoring device of high growth firms is likely to be minor. Jensen (1986) argues that agency conflicts are prevalent in mature firms with substantial free cash flow and a tendency to overinvest by accepting marginal investment projects with negative net present values while high growth firms are not likely to suffer from the free cash flow problem as they are usually short of cash and they are already subject to monitoring when they raise external finance. Smith and Watts (1992) argue that such high growth firms adopt alternative governance mechanisms to board monitoring because the behaviour of their managers is difficult to observe given their discretionary investment opportunities. Adams (2002) maintains that the board chooses to pre-commit to reduce its monitoring role in order to encourage managers to share their information. These arguments lead to the following second hypothesis:

**$H_2$.** The relationship between board structure and firm value is independent of firms' growth opportunities.

## 3. DATA AND METHODOLOGY

I first select all companies quoted on the London Stock Exchange with year ends spanning over the period June 1996 to June 1997. Financial companies are excluded because of the specific characteristics of their financial ratios. This initial sample includes 1,650 non-financial companies. The data on ownership and board structure is collected by hand from companies' financial statements and *Extel Financial*.[5] I split the companies into high and low growth sub-samples using earnings-to-price (EP) ratio.[6] Companies with an EP ratio below the median are included in the high growth group and companies with an EP ratio equal or above the median are in the low growth group. In order to avoid outliers and discrepancies in the statistics throughout the text, firms with no EP data and companies with missing data are excluded. The final samples include 1,171 listed firms.

I test for robustness of the results by using an earlier sample to cover the pre-Cadbury period because the 1996–1997 period is likely to be affected by the Cadbury recommendations, which had a significant effect on the board structure (e.g. Dahya et al., 2002). In 1992, the Cadbury Committee issued the *Code of Best Practice* which recommends that companies should appoint at least three independent non-executive directors and the offices of the chairman and the CEO should be separated to prevent excessive concentration of power in boardrooms. The adoption of this code is not compulsory, but as a continuing obligation of listing, the London Stock Exchange requires all companies registered in the U.K. after June 1993 to give reasons for any areas of non-compliance. In order to account for this effect, I collect full data for a random sample of 627 firms in 1990–1991 and refer to this as the pre-Cadbury period and the 1996–1997 as the post-Cadbury period.

I use four main variables to measure the composition of the board: (a) a dummy variable equal to one if the company has adopted the Cadbury recommendations, i.e. split the roles of the chairman and CEO and has three or more non-executive directors on the board (*Adopt*);[7] (b) number of directors on the board (*#DIR*); (c) the ratio of non-executive directors to the total number of directors in the board (*%NED*); and (d) a dummy variable (*NeChair*), equal to one if the chairman was not previously an executive director, zero otherwise.[8] I also analyse separately the two components of the *Adopt* variable, i.e. a dummy variable equal to one if the company has split the roles of the chairman and CEO (*Split*) and another dummy variable equal to one if the number of non-executive directors is three or more (*NED3*). The number of executive directors (*#ED*) and the number of non-executive directors (*#NED*) are also analysed.

I use a number of control variables defined in the previous literature to account for any potential effects of external factors on the analysis. First, I control for managerial ownership by using the proportion of shares held by directors.[9] I expect companies with high managerial ownership to be subject to lower agency conflicts and as such the need for alternative governance controls such as board monitoring is reduced. I also use the squared value of managerial ownership to account for the non-linearity relationship between firm value and managerial ownership, as shown by Morck, Shleifer and Vishny (1988) and McConnell and Servaes (1995). Second, I control for block-ownership using the proportion of shares held by all block holders, *Block*, as a proxy for the incentive of large shareholders to monitor.[10] Third, I use book value of leverage, *Blev*, defined as the ratio of total debt over the sum of total debt and book value of equity to assess the monitoring role of debt holders. I test the sensitivity of the results to the definition of leverage by using market value of leverage defined as total debt over the sum of total debt and market value of equity. Fourth, I use the log of market value of

equity, *Ln(ME)*, to control for size, which, as Smith and Watts (1992) suggest, is positively related to various types of corporate governance controls such as dividends and managerial compensation. I test for robustness by using log of total assets and log of sales. Finally, I use Tobin's *Q* defined as market value of equity *plus* total debt over total assets as a proxy for firm value. The results are tested for robustness by using industry-adjusted *Q* ($Q_{\mathrm{ADJ}}$) defined as *Q* less industry median *Q*, and market-to-sales (*M/S*) defined as market value of equity *plus* total debt *over* sales.

## 4. EMPIRICAL RESULTS

### *4.1. Characteristics of Board Structure of High and Low Growth Companies*

Table 1 provides a summary statistic of the board structure variables and the control variables for the pre- and post-Cadbury periods and for high and low growth companies. The last two columns show the *p*-value of differences in means and medians between high and low growth firms. I also compare the means and medians of the pre and post-Cadbury periods and the asterisk (∗) indicates that the differences in means or medians between the two periods are significant at 0.01 level. As the pre- and post-Cadbury period samples are driven by data availability rather than the matching principles, the differences in firm values, *Q*, are statistically significant, as shown in the last two rows of Table 1. Thus, the comparison between the two periods is not likely to provide a complete picture of the evolution of board structure from the early to the mid-1990s.[11]

The first row of Table 1 shows that, for the post-Cadbury period, there are significantly more high growth companies that adopted the Cadbury recommendations in both pre- and post-Cadbury periods. On average 63% of high growth companies adopted the recommendations compared to 58% low growth companies ($p = 0.06$). The next two rows indicate that the difference in the adoption rate between the high growth and low growth companies is mainly driven by the higher proportion of companies that split the roles of the chairman and CEO (89% compared to 84%, $p = 0.01$) rather than the proportion of companies that had at least three non-executive directors on the board (68% compared to 65%, $p = 0.37$). In the pre-Cadbury period, there are also a number of companies that adopted the recommendations and there are more high growth companies that did so (32% for high compared to 22% for low growth firms, $p = 0.00$). However, unlike the post-Cadbury period, high growth companies are more likely to have three or more non-executive directors (46% compared to 33%, $p = 0.00$) rather than split

***Table 1.*** Summary Statistics.

| Variables | Period | High Growth Companies | | | | Low Growth Companies | | | | *p* of Differences in | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean | Median | Min | Max | Mean | Median | Min | Max | Mean | Median |
| Adopt | Pre | 0.32* | 0.00* | 0.00 | 1.00 | 0.22* | 0.00* | 0.00 | 1.00 | 0.00 | 0.00 |
| | Post | 0.63 | 1.00 | 0.00 | 1.00 | 0.58 | 1.00 | 0.00 | 1.00 | 0.06 | 0.06 |
| NED3 | Pre | 0.46* | 0.00* | 0.00 | 1.00 | 0.33* | 0.00* | 0.00 | 1.00 | 0.00 | 0.00 |
| | Post | 0.68 | 1.00 | 0.00 | 1.00 | 0.65 | 1.00 | 0.00 | 1.00 | 0.37 | 0.46 |
| Split | Pre | 0.62* | 1.00* | 0.00 | 1.00 | 0.67* | 1.00* | 0.00 | 1.00 | 0.23 | 0.32 |
| | Post | 0.89 | 1.00 | 0.00 | 1.00 | 0.84 | 1.00 | 0.00 | 1.00 | 0.01 | 0.01 |
| #DIR | Pre | 5.50* | 5.00* | 1.00 | 17.00 | 4.86* | 4.00* | 1.00 | 15.00 | 0.00 | 0.00 |
| | Post | 7.15 | 7.00 | 2.00 | 20.00 | 7.12 | 7.00 | 2.00 | 15.00 | 0.85 | 0.70 |
| #ED | Pre | 2.93* | 3.00* | 1.00 | 12.00 | 2.81* | 3.00* | 1.00 | 12.00 | 0.41 | 0.45 |
| | Post | 3.79 | 4.00 | 1.00 | 15.00 | 3.97 | 4.00 | 1.00 | 12.00 | 0.07 | 0.04 |
| #NED | Pre | 2.57* | 2.00* | 0.00 | 9.00 | 2.05* | 2.00* | 0.00 | 9.00 | 0.00 | 0.00 |
| | Post | 3.35 | 3.00 | 0.00 | 15.00 | 3.15 | 3.00 | 0.00 | 9.00 | 0.03 | 0.11 |
| %NED | Pre | 45.20 | 50.00 | 0.00 | 87.7 | 40.30* | 42.90 | 0.00 | 88.0 | 0.00 | 0.04 |
| | Post | 46.40 | 50.00 | 0.00 | 86.0 | 43.70 | 42.90 | 0.00 | 86.0 | 0.00 | 0.00 |
| NeChair | Pre | 0.22* | 0.00* | 0.00 | 1.00 | 0.25* | 0.00* | 0.00 | 1.00 | 0.47 | 0.59 |
| | Post | 0.58 | 1.00 | 0.00 | 1.00 | 0.54 | 1.00 | 0.00 | 1.00 | 0.19 | 0.26 |
| MGT% | Pre | 11.2* | 2.28* | 0.00 | 82.8 | 11.5* | 3.65* | 0.00 | 72.5 | 0.83 | 0.17 |
| | Post | 14.27 | 6.25 | 0.00 | 87.2 | 14.7 | 6.06 | 0.00 | 84.3 | 0.68 | 0.45 |
| Block% | Pre | 31.2* | 28.30* | 0.00 | 96.7 | 32.1* | 30.66* | 0.00 | 97.2 | 0.59 | 0.31 |
| | Post | 34.52 | 33.50 | 0.00 | 88.6 | 36.17 | 36.00 | 0.00 | 98.0 | 0.17 | 0.20 |
| Blev% | Pre | 31.76 | 32.00* | 0.00 | 96.0 | 27.27 | 27.50 | 0.00 | 97.3 | 0.07 | 0.00 |
| | Post | 30.06 | 27.78 | 0.00 | 99.5 | 27.23 | 27.75 | 0.00 | 98.4 | 0.02 | 0.14 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ME (£m) | Pre | 723.4 | 85.4* | 1.00 | 27,900 | 258* | 39.39 | 1.27 | 8,803 | 0.00 | 0.00 |
| | Post | 571.0 | 58.5 | 1.00 | 33,600 | 527.5 | 50.20 | 1.00 | 39,600 | 0.74 | 0.38 |
| *Q* | Pre | 1.06* | 0.88* | 0.26 | 7.15 | 0.78* | 0.75* | 0.15 | 3.26 | 0.00 | 0.00 |
| | Post | 1.59 | 1.32 | 0.23 | 4.98 | 1.12 | 1.02 | 0.26 | 4.45 | 0.00 | 0.00 |

*Note:* The sample includes 627 U.K. non-financial companies in the pre-Cadbury period (Pre) and 1171 in the post-Cadbury period (Post). *High (Low) Growth companies* are companies with Earning Price ratio below (above) the industry median. *Adopt* is a dummy variable equal to one if the number of non-executive directors is higher than three (*NED3*) and the roles of the chairman and CEO are separated (Split); *#DIR* is number of directors in the board; *#ED (#NED*) is the number of (non-) executive directors in the board; *%NED* is the proportion of non-executive directors in the board; *NeChair* is a dummy equal to one if a non-executive director is a chairman. *MGT* is the proportion of equity held by managers; *Block* is the proportion of shares held by large shareholders other than directors; *Blev* is the ratio of total debt over total debt plus shareholders' funds; *ME* is market value of equity at year end; *Q* is the ratio of the sum of market value of equity and book value of long and short-term debt over total assets. The *p*-values of differences in means and medians (using Mann Whitney test) between high and low growth companies are in last two columns.

The (*) indicates that the differences in mean or median between the pre- and post-Cadbury periods are significant at 0.01 level.

the roles of chairman and CEO (62% compared to 67%, $p = 0.23$). As expected, compared to the pre-Cadbury period, the proportion of companies that adopted the recommendations has roughly doubled in the post-Cadbury period for both low and high growth firms.

The next four rows indicate that, in the post-Cadbury period, companies had a larger number of directors and a higher number of non-executive and executive directors on the board. However, the proportion of non-executive directors has remained relatively constant over the two sub-periods. The comparison between high and low growth firms indicates, however, that high growth companies have substantially higher proportion of non-executive directors in both sub-periods. In particular, in the post-Cadbury period, while both high and low growth firms have the same total number of directors of seven, high growth companies have substantially lower number of executive directors but a higher number of non-executive directors.[12] As a result, high growth firms have an average of 46.4% non-executive directors (*NED%*) compared to 43.7% for low growth firms. The differences in means and medians in the number of executive directors and the proportion of non-executive directors are statistically significant, suggesting that, on average, low growth firms have more executives on the board than high growth firms. Finally, row eight indicates that, in both sub-periods, high growth firms are not more likely to appoint a non-executive as a chairman as the differences in means and medians between high and low growth firms are not statistically significant, and the proportion of companies that appoint a non-executive as a chairman (*NeChair)* has more than doubled in the post-Cadbury period for both high and low growth firms.

The rest of the results in Table 1 show that in both periods, high growth companies have the same managerial ownership and block ownership as low growth companies. The average managerial ownership of about 14% and the median of about 6% in the post-Cadbury period are comparable to the 13.3 and 11.5% reported by Short and Keasey (1999) for a sample of 225 U.K. listed companies in 1988 and in 1992, respectively.[13] In both sub-samples, the average block holders' interest is statistically higher than that of managerial ownership. Finally, in the pre-Cadbury period, high growth companies are larger and have a higher leverage than low growth companies, and, as expected, high growth companies have significantly higher *Q* than low growth firms. Similar results are obtained when size is measured with total asset and sales and value measured with market-to-sales and industry adjusted *Q*.

In sum, Table 1 indicates that board structure and the adoption of the Cadbury recommendations depend significantly on the firm's growth potential. I test further this relationship by splitting companies in the pre- and post-Cadbury periods into five equal groups according to the level of growth opportunities. I expect

the relationship between board structure and growth to hold across all growth quintiles. The results, reported in Table 2, indicate that as companies move down from one growth quintile into another, the probability of adopting the Cadbury recommendations decreases. In particular, the proportion of companies that adopted the recommendations decreases from 66% in the highest quintile to 54% for the lowest quintile ($p = 0.01$). As in Table 1, the adoption rate is not driven by the recommendation of a minimum of three non-executive directors (*NED3*), but by the split of the chairman and CEO. The second row of Table 2 indicates that the proportion of companies that have at least three non-executives is relatively constant across growth quintiles. In contrast, the proportion of companies that split the roles of the chairman and CEO decreased monotonically from 90% for the highest growth quintile to 81% for the lowest quintile ($p = 0.00$). In the pre-Cadbury period the proportion of very high growth companies (quintile 1) that adopted the Cadbury recommendations is 30% compared to 24% for the lowest growth quintile. However, the difference in means is not statistically significant ($p = 0.25$). There are more very high growth companies that have three or more non-executive directors (47% compared to 32%, $p = 0.01$). The probability of splitting the roles of the chairman and the CEO is not monotonically distributed across growth quintiles.

The remaining rows of Table 2 show that there is no statistical difference in the size of the board (*#DIR*) across growth quintiles in both sub-periods. However, the split of the total number of directors into executive and non-executive directors shows significant differences across growth quintiles, but the distributions are not monotonically distributed. The highest numbers of executive directors in both the pre- and post-Cadbury periods are in quintiles two to five. Nevertheless, the highest growth companies have significantly lower number of executives than the lowest quintile in both sub-periods. The distribution of the number of non-executive directors across growth quintiles is also not monotonic, but in the pre-Cadbury period the highest growth quintile has a larger number of non-executives than the lowest quintile. As a result, the proportion of non-executive directors is not monotonically distributed across growth quintiles but the proportion of non-executive directors of the highest growth quintile is significantly larger than that of the lowest growth quintile in both sub-periods. Table 2 also reports that in the post-Cadbury period, the relationship between the growth quintiles and the probability of appointing a non-executive as a chairman is monotonic. As companies' growth options decrease from the highest to the lowest growth quintile, the probability of appointing a non-executive as a chairman decreases from 61 to 53% ($p = 0.05$). This wasn't the case in the pre-Cadbury period. Finally, it is interesting to note that in the post-Cadbury period all the board composition variables have changed relative to the pre-Cadbury period with the exception of the proportion of

***Table 2.*** Distribution of Mean Board Structure Variables by Growth Quintiles.

| Variables | Period | Growth Quintiles | | | | | *p*-Difference High-Low |
|---|---|---|---|---|---|---|---|
| | | High | 2 | 3 | 4 | Low | |
| Adopt | Pre | 0.30* | 0.35* | 0.30* | 0.20* | 0.24* | 0.25 |
| | Post | 0.66 | 0.61 | 0.63 | 0.58 | 0.54 | 0.01 |
| NED3 | Pre | 0.47* | 0.51* | 0.40* | 0.36* | 0.32* | 0.01 |
| | Post | 0.65 | 0.67 | 0.73 | 0.65 | 0.61 | 0.33 |
| Split | Pre | 0.61* | 0.65* | 0.62* | 0.59* | 0.71* | 0.58 |
| | Post | 0.90 | 0.88 | 0.87 | 0.86 | 0.81 | 0.00 |
| #DIR | Pre | 5.13* | 5.94* | 5.40* | 5.22* | 4.69* | 0.13 |
| | Post | 6.72 | 7.11 | 7.85 | 7.09 | 6.84 | 0.60 |
| #ED | Pre | 2.58* | 3.16* | 3.04* | 3.07* | 2.68* | 0.01 |
| | Post | 3.51 | 3.71 | 4.39 | 4.00 | 3.75 | 0.08 |
| #NED | Pre | 2.56* | 2.78* | 2.36* | 2.15* | 2.00* | 0.01 |
| | Post | 3.22 | 3.40 | 3.45 | 3.08 | 3.08 | 0.38 |
| %NED | Pre | 47.9 | 46.3 | 41.3 | 38.4 | 41.2 | 0.02 |
| | Post | 47.0 | 47.5 | 43.5 | 43.2 | 44.2 | 0.05 |
| NeChair | Pre | 0.23* | 0.23* | 0.22* | 0.22* | 0.26* | 0.58 |
| | Post | 0.61 | 0.59 | 0.52 | 0.54 | 0.53 | 0.05 |

*Note:* The sample includes 627 U.K. non-financial companies in the pre-Cadbury period 1990–1991 (Pre) and 1171 in the post-Cadbury period 1996–1997 (Post). Companies are split into equal growth quintiles using Earning Price ratio as a proxy for growth opportunities. *Adopt* is a dummy variable equal to one if the number of non-executive directors is higher than three (*NED3*) and the roles of CEO and chairman are separated (*Split*); *#DIR* is number of directors in the board; *#ED (#NED*) is the number of (non-) executive directors in the board;*%NED* is the proportion of non-executive directors in the board; *Split* is dummy equals to one if the roles of chairman and CEO are split; *NeChair* is a dummy equal to one if a non-executive director is a chairman. The last tow columns provide the *p*-values of differences in means and medians (using Mann Whitney test) between quintile one (very high growth) and quintile five (very low growth) companies. The (*) indicates that the differences in mean or median between the pre- and post-Cadbury periods are significant at 0.01 level.

non-executive directors that remained relatively constant. As in Dahya et al. (2002) and Young (2000), these results suggest that Cadbury (1992) had a significant impact on the board structure of U.K. companies. However, consistent with Gutierrez-Urtiaga (2002), high growth firms are much more likely to have an independent board than low growth firms.

The statistical difference in the board composition between high and low growth firms documented above may be due to other factors that might affect the decision to opt for a particular board. I correct for these potential effects by running a set of logit regressions designed to highlight the board structure differences between the high growth and low growth companies after accounting for size, leverage,

ownership, value and industry factors. The results are reported in Table 3. The dependent variable is a dummy variable equal to one if the company is in the high growth sub-sample, zero otherwise. In the pre-Cadbury period, the board structure of high growth companies is relatively similar to that of low growth companies, with the exception of the number of non-executive directors that are higher for high growth companies (coefficient of 0.12, $p = 0.04$). The coefficient of the *Adopt* variable of 0.29 is not significant ($p = 0.18$). However, when this variable is divided into its two components, the results (not reported) indicate that high growth companies are not more likely to split the roles of the chairman and CEO (coefficient of *Split* dummy is $-0.19$, $p = 0.30$) but they are more likely to have three or more non-executive directors (coefficient of *NED3* is 0.10, $p = 0.04$). The results also indicate that high growth firms do not have higher managerial ownership, block ownership, leverage or market value of equity than low growth firms.

In contrast, in the post-Cadbury period, there are significant differences between high and low growth companies in all board structure variables, with the exception of number of directors and the appointment of a non-executive as a chairman. As shown in the univariate analysis above, high growth firms are more likely to adopt the Cadbury recommendations than low growth firms (coefficient of *Adopt* is 0.29, $p = 0.05$). The coefficient of the *Split* dummy (not reported) is also positive and significant (coefficient $= 0.42$, $p = 0.04$), suggesting that high growth firms are more likely to separate the roles of CEO and chairman. However, the coefficient of the dummy variable for three or more non-executive directors (not reported) is not significant (0.03, $p = 0.32$). Thus, in the post-Cadbury period, high growth companies are, on average, more likely to adopt the Cadbury code by splitting the roles of the CEO and the chairman but they are not more likely to have three or more non-executive directors than low growth firms. The results also indicate that high growth firms have a larger number (*#NED*) and proportion (*%NED*) of non-executive directors and a lower number of executive directors (*#ED*) (Eqs (8)–10).

The remaining results in Table 3 indicate that high and low growth firms have relatively the same managerial and block ownership. However, high growth companies have larger leverage and Tobin's *Q* but are smaller than low growth firms as the coefficients of *Q* and *Blev* are all positive and significant while that of *ln(ME)* is negative and significant. These results can, however, be due to the relatively high correlation between log of market value of equity and the remaining variables. To overcome this multicolinearity problem, I use log of total assets and log of sales, which are not highly correlated with the remaining explanatory variables, as a proxy for size. The results, not reported, indicate a negative and significant relationship between the growth dummy and size, suggesting that

***Table 3.*** Logit Regressions.

| | Pre-Cadbury Period | | | | | | Post-Cadbury Period | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| Constant | −1.47 | −1.32 | −1.63 | −1.72 | −1.51 | −1.57 | −20.4 | −19.8 | −20.8 | −20.8 | −20.2 | −20.6 |
| | (0.19) | (0.25) | (0.15) | (0.13) | (0.18) | (0.16) | (0.99) | (0.99) | (0.99) | (0.99) | (0.99) | (0.99) |
| #DIR | 0.06 | – | – | – | – | – | 0.49E-02 | – | – | – | – | – |
| | (0.16) | | | | | | (0.90) | | | | | |
| #NED | – | 0.12 | – | – | – | – | – | 0.12 | – | – | – | – |
| | | (0.04) | | | | | | (0.03) | | | | |
| #ED | – | – | −0.01 | – | – | – | – | – | −0.09 | – | – | – |
| | | | (0.78) | | | | | | (0.06) | | | |
| % NED | – | – | – | 0.61E-02 | – | – | – | – | – | 1.34 | – | – |
| | | | | (0.10) | | | | | | (0.00) | | |
| Adopt | – | – | – | – | 0.29 | – | – | – | – | – | 0.29 | – |
| | | | | | (0.18) | | | | | | (0.05) | |
| NeChair | – | – | – | – | – | −0.11 | – | – | – | – | – | 0.13 |
| | | | | | | (0.58) | | | | | | (0.34) |
| MGT | 0.89E-02 | 0.01 | 0.88E-02 | 0.98E-02 | 0.92E-02 | 0.82E-02 | −0.62E-02 | −0.59E-02 | −0.54E-02 | −0.47E-02 | −0.54E-02 | −0.54E-02 |
| | (0.16) | (0.12) | (0.17) | (0.13) | (0.15) | (0.21) | (0.15) | (0.17) | (0.21) | (0.27) | (0.21) | (0.21) |
| Block | 0.54E-02 | 0.005 | 0.57E-02 | 0.53E-02 | 0.50E-02 | 0.57E-02 | −0.52E-02 | −0.61E-02 | −0.57E-02 | −0.66E-02 | −0.59E-02 | −0.55E-02 |
| | (0.32) | (0.36) | (0.29) | (0.33) | (0.35) | (0.29) | (0.16) | (0.11) | (0.13) | (0.08) | (0.11) | (0.14) |
| Blev | 0.36 | 0.31 | 0.37 | 0.33 | 0.36 | 0.38 | 1.48 | 1.43 | 1.46 | 1.41 | 1.47 | 1.47 |
| | (0.34) | (0.40) | (0.31) | (0.37) | (0.34) | (0.31) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Ln(ME) | 0.05 | 0.04 | 0.11 | 0.09 | 0.08 | 0.10 | −0.11 | −0.17 | −0.07 | −0.12 | −0.14 | −0.11 |
| | (0.47) | (0.54) | (0.12) | (0.19) | (0.23) | (0.13) | (0.05) | (0.00) | (0.14) | (0.01) | (0.00) | (0.02) |
| *Q* | 0.89 | 0.88 | 0.86 | 0.86 | 0.85 | 0.86 | 0.98 | 1.01 | 0.97 | 0.99 | 0.99 | 0.97 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| $R^2$ | 0.102 | 0.105 | 0.107 | 0.103 | 0.102 | 0.104 | 0.134 | 0.137 | 0.136 | 0.140 | 0.137 | 0.135 |
| % Predict | 66.2 | 65.9 | 65.2 | 66.4 | 66.0 | 65.1 | 64.7 | 65.1 | 65.0 | 65.4 | 65.0 | 64.7 |

*Note:* The sample includes 627 U.K. non-financial companies in the pre-Cadbury period (1990–1991) and 1171 companies in the post-Cadbury period (1996–1997). The dependent variable is a dummy variable equal to one if the company is a high growth firm (Earning Price ratio below the median), zero otherwise. The board structure variables are: *Adopt* is a dummy variable equal to one if the number of non-executive directors is higher than three and the roles of CEO and chairman are split; *#DIR* is number of directors in the board; *#ED* (*#NED*) is the number of (non-) executive directors in the board; %*NED* is the proportion of non-executive directors in the board; *NeChair* is a dummy equal to 1 if a non-executive director is a chairman. The control variables are: *MGT*, the proportion of equity held by managers; *Block*, the proportion of shares held by shareholders other than directors; *Blev* the ratio of total debt over total debt plus shareholders' funds; *ME*, market value of equity at year end; *Q*, the ratio of the sum of market value of equity and book value of long and short-term debt over total assets. All regressions include industry dummies and the *t*-statistics are based on standard errors computed from analytic second derivative. $R^2$ is the Kullback-Leibler *R*-squared which measures the goodness of fit relative to a model with just a constant term. Percent predict is the fraction of correct predictions. The *p*-values are in parentheses.

high growth firms are smaller than low growth firms. I also obtain similar results when market leverage defined as total debt over total debt plus market value of equity is used instead of *Blev.* These results do not provide support for Smith and Watts (1992) and Gaver and Gaver (1993) who show that high growth firms have low leverage.

### *4.2. Board Structure and Firm Value*

Table 4 reports the regression results of firm value, *Q*, on lagged values of board structure, managerial and block ownership, leverage, size, and industry factors. I use lagged values of the explanatory variables to account for possible endogeneity problem. I hypothesize that the board structure at the beginning of year *t* will have an effect on the agency conflict during year *t* and this will be valued accordingly at the beginning of subsequent year $t + 1$. Thus, the correspondent firm value (*Q*) in the pre-Cadbury period (1990–1991) is measured in 1991–1992 and in the post-Cadbury period (1996–1997) *Q* is measured in 1997–1998 period. The coefficients of industry dummies are not reported. The *t*-statistics are based on standard errors that are heteroskedastic-consistent (White, 1980). The results based on one explanatory variable at time and industry dummies to control for possible multicolinearity problem are qualitatively similar.

Table 4, Panel A, reports the results for the pre-Cadbury period. Equations (1) and (6) show that firm value is not statistically related to the adoption rate for both high and low growth firms. I also run but not report the regressions with dummies for the split of the roles of the chairman and CEO and the three or more non-executive directors, the two constituents of the *Adopt* variable. The coefficients of the split dummies are not significant for both high (0.09, $p = 0.17$) and for low (0.024, $p = 0.68$) growth firms. Similarly the coefficients of the three or more non-executive directors are not significant for high ($-0.134$, $p = 0.11$) and low growth (0.055, $p = 0.46$) firms. Consistent with Yermack (1996), Eqs (2) and (7) show that the number of directors (*#DIR*) is negatively related to firm value but it is only significant for high growth companies ($p = 0.04$). In contrast, Eqs (3) and (8) show that the number of executive directors (*#ED*) is negatively related to firm value but it is only significant for low growth firms ($p = 0.00$). Finally, the proportion of non-executive directors and the appointment of a non-executive as a chairman are not significantly related to firm value for both high and low growth firms. Overall, the relationship between firm value and board structure in the pre-Cadbury period is not strong.

Table 4, Panel B, reports the results for the post-Cadbury period. For high growth companies, the relationship between firm value and the adoption rate is

***Table 4.*** Impact of Board Structure on Firm Value.

| | High Growth Companies | | | | | Low Growth Companies | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| Panel A: Pre-Cadbury period | | | | | | | | | | |
| Constant | −0.75 | −0.72 | −0.59 | −0.75 | −0.77 | −0.34 | −0.45 | −0.37 | −0.42 | −0.50 |
| | (0.08) | (0.08) | (0.14) | (0.08) | (0.06) | (0.44) | (0.30) | (0.37) | (0.31) | (0.22) |
| Adopt | 0.19E-02 | – | – | – | – | 0.14 | – | – | – | – |
| | (0.98) | | | | | (0.12) | | | | |
| #DIR | – | −0.04 | – | – | – | – | −0.01 | – | – | – |
| | | (0.04) | | | | | (0.31) | | | |
| #ED | – | – | −0.03 | – | – | – | – | −0.05 | – | – |
| | | | (0.16) | | | | | (0.00) | | |
| %NED | – | – | – | 0.70E-03 | – | – | – | – | 0.22E-02 | – |
| | | | | (0.66) | | | | | (0.11) | |
| NeChair | – | – | – | – | 0.10 | – | – | – | – | 0.01 |
| | | | | | (0.28) | | | | | (0.12) |
| MGT | 0.014 | 0.014 | 0.015 | 0.014 | 0.015 | 0.93E-02 | 0.092E-02 | 0.01 | 0.99E-02 | 0.01 |
| | (0.04) | (0.03) | (0.02) | (0.03) | (0.03) | (0.16) | (0.18) | (0.11) | (0.13) | (0.12) |
| $MGT^2$ | −0.15E-03 | −0.17E-03 | −0.18E-03 | −0.16E-03 | −0.17E-03 | −0.11E-03 | −0.11E-03 | −0.13E-03 | −0.12E-03 | −0.12E-03 |
| | (0.09) | (0.05) | (0.04) | (0.07) | (0.07) | (0.25) | (0.27) | (0.19) | (0.24) | (0.23) |
| Block | 0.26E-02 | 0.27E-02 | 0.25E-02 | 0.25E-02 | 0.26E-02 | 0.15E-02 | 0.23E-02 | 0.23E-02 | 0.22E-02 | 0.22E-02 |
| | (0.36) | (0.34) | (0.36) | (0.35) | (0.34) | (0.40) | (0.18) | (0.17) | (0.20) | (0.20) |
| Blev | −0.70 | −0.69 | −0.73 | −0.71 | −0.69 | −0.03 | −0.01 | −0.02 | −0.02 | −0.02 |
| | (0.04) | (0.05) | (0.04) | (0.04) | (0.04) | (0.83) | (0.92) | (0.90) | (0.88) | (0.87) |
| Ln(ME) | 0.14 | 0.17 | 0.15 | 0.14 | 0.14 | 0.09 | 0.11 | 0.11 | 0.09 | 0.10 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| $\overline{R^2}$ | 0.38 | 0.39 | 0.38 | 0.38 | 0.38 | 0.14 | 0.13 | 0.15 | 0.14 | 0.13 |
| Panel B: Post-Cadbury period | | | | | | | | | | |
| Constant | −0.40 | −0.86 | −0.57 | −0.23 | −0.35 | −1.13 | −1.43 | −1.40 | −1.31 | −1.30 |
| | (0.54) | (0.20) | (0.38) | (0.73) | (0.60) | (0.03) | (0.00) | (0.00) | (0.01) | (0.01) |
| Adopt | −0.20 | – | – | – | – | 0.08 | – | – | – | – |
| | (0.04) | | | | | (0.09) | | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| #DIR | – | −0.07 | – | – | – | – | −0.03 | – | – | – |
| | | (0.00) | | | | | (0.08) | | | |
| #ED | – | – | −0.08 | – | – | – | – | −0.04 | – | – |
| | | | (0.00) | | | | | (0.06) | | |
| %NED | – | – | – | −0.05 | – | – | – | – | 0.33 | – |
| | | | | (0.87) | | | | | (0.05) | |
| NeChair | – | – | – | – | 0.09 | – | – | – | – | 0.08 |
| | | | | | (0.23) | | | | | (0.08) |
| MGT | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.18E-02 | 0.19E-02 | 0.28E-02 | 0.24E-02 | 0.28E-02 |
| | (0.03) | (0.01) | (0.00) | (0.02) | (0.01) | (0.64) | (0.61) | (0.45) | (0.53) | (0.46) |
| $MGT^2$ | −0.24E-3 | −0.26E-3 | −0.30E-03 | −0.27E-03 | −0.28E-03 | 0.74E-05 | 0.36E-05 | 0.85E-05 | 0.22E-05 | 0.64E-05 |
| | (0.07) | (0.05) | (0.03) | (0.05) | (0.04) | (0.91) | (0.96) | (0.89) | (0.97) | (0.92) |
| Block | −0.41E-02 | −0.45E-02 | −0.54E-02 | −0.47E-02 | −0.49E-02 | 0.28E-02 | 0.31E-02 | 0.28E-02 | 0.27E-02 | 0.28E-02 |
| | (0.11) | (0.08) | (0.04) | (0.07) | (0.06) | (0.18) | (0.14) | (0.18) | (0.21) | (0.18) |
| Blev | −1.09 | −1.06 | −1.09 | −1.09 | −1.08 | 0.02 | 0.04 | 0.03 | 0.88E-02 | 0.01 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.86) | (0.77) | (0.85) | (0.95) | (0.92) |
| Ln(ME) | 0.13 | 0.17 | 0.15 | 0.11 | 0.12 | 0.11 | 0.14 | 0.14 | 0.11 | 0.12 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| $\overline{R^2}$ | 0.20 | 0.21 | 0.21 | 0.20 | 0.20 | 0.18 | 0.18 | 0.19 | 0.19 | 0.18 |

*Note:* The Table presents the results of regression of *Q*, against lagged dependent variables. The sample includes 627 U.K. non-financial firms in the pre-Cadbury and 1171 in post-Cadbury period. *High (Low) Growth Companies* are companies with Earning Price ratio below (above) the industry median. *#DIR* is number of directors; *#ED* is the number of executive directors, %*NED* is the proportion of non-executive directors, *Split* is a dummy variable equal to one if company splits the roles of CEO and chairman, zero otherwise; *NeChair* is a dummy variable equal to one if companies appointed a non-executive director as a chairman. *MGT* the proportion of equity held by managers; *Block*, the proportion of shares above 3% held by largest shareholders other than directors, *Blev* the ratio of total debt over total debt plus shareholders' funds and *ME*, market value of equity at year end. All regressions include industry dummies and the *t*-statistics are based on standard errors that are heteroskedastic-consistent (White, 1980). The *p*-values are in parentheses.

negative and significant (Eq. (1)), suggesting that high growth companies that split the roles of the chairman and CEO and have a minimum of three non-executives on the board generate lower value than companies that do not adopt the recommendations. I also run, but not report, the regressions using the *Split* and a minimum of three non-executives (*NED3*) dummies. The results indicate that, for high growth firms, *NED3* is negative and significant ($-0.18$, $p = 0.07$) while *Split* is negative but not significant ($-0.21$, $p = 0.19$), suggesting that the negative relationship between firm value and *Adopt* for high growth firms is driven by the minimum of three non-executives recommendation. These results imply that, since high growth companies are likely to make complex and timely decisions, the appointment of a large number of non-executive directors may only result in high wages and co-ordination costs and delay in decision making. In contrast, for low growth firms, the relationship is positive and significant (Eq. (6)), suggesting that low growth firm benefit from adopting the Cadbury recommendations. For these firms the coefficient of *Split* of 0.10 is significant ($p = 0.07$) but that of *NED3* is not (coefficient of 0.05, $p = 0.34$), suggesting that the partition of the offices of the chairman and CEO is likely to decrease the agency costs that might result from the free cash flow problem.

Equations (2) and (7) show that firm value decreases with the board size (*#DIR*). These results are consistent with previous evidence (e.g. Eisenberg et al., 1998; Yermack, 1996) and suggest that large boards do not create value because their size exacerbates the free riding problem among directors *vis-à-vis* the monitoring of management. Firm value also decreases with the number of executive directors on the board (Eqs (3) and (8)). However, the proportion of non-executive directors is only positive and significant for the case of low growth firms (Eq. (9)). For high growth firms the relationship is negative but not significant (Eq. (4)). Similar results are obtained when the number of non-executive directors is used. There are two implications from these results. First, unlike previous studies (e.g. Yermack, 1996), the negative relationship between firm value and number of directors is likely to apply to only executive directors. Second, the monitoring role of non-executive directors differs between the two sets of firms. Low growth firms gain by having a higher proportion of non-executive directors on the board. In contrast, the value of high growth companies is not affected by the presence of non-executive directors. Thus, the results of Hermalin and Weisbach (1991) and Bhagat and Black (2001) that there is no noticeable relation between the proportion of outside directors and firm value appear to apply only to high growth firms.

The relationship between firm value and the appointment of a non-executive as a chairman (*NeChair*) also depends on firm's growth prospects. Equation (5) indicates that the appointment of a non-executive director as a chairman does not

affect the value of high growth companies. In contrast, Eq. (10) shows that, for low growth firms, the relationship between firm value and the appointment of a non-executive as a chairman is positive and statistically significant. The results suggest that low growth firms that appoint a non-executive director as a chairman suffer less from the agency conflicts that result from the free cash flow problem and, as a result they have a higher value than other companies.

The comparison of the pre- and post-Cadbury periods (Panels A & B) indicates that the coefficients of the board structure variables are not only insignificant in the pre-Cadbury period but they are lower than those of the post-Cadbury period. For example, for high growth firms, the coefficient of the proportion of non-executive directors (*%NED*) in the pre-Cadbury period is 0.0022 compared to 0.33 in the post-Cadbury period. This suggests that, in the post-Cadbury period, the relationship between firm value and board structure is not only significant but it is also stronger economically.

Table 4 also reports the results of the relationship between firm value and the control variables. For high growth companies, the relationship between firm value and managerial ownership is quadratic and significant in both the pre- and post-Cadbury periods. For example, Eq. (1) indicates that, for the pre-Cadbury period, the coefficient of managerial ownership of 0.014 is significant ($p = 0.04$) and that of its squared value of −0.15E-03 is also significant ($p = 0.09$). The correspondent coefficients for the post-Cadbury period are 0.02 ($p = 0.03$) and −0.24E-03 ($p = 0.07$). The results suggest that firm value is optimised when managerial ownership reaches 47% in the pre-Cadbury period and 42% in the post-Cadbury period.[14] These finding are consistent with previous U.S. and U.K. studies (e.g. McConnell & Servaes, 1990; Short & Keasey, 1999). In contrast, for low growth firms the coefficients of managerial ownership variable and its squared value are not significant at any confidence level in both sub-periods. The results suggest that high growth firms substitute board structure for managerial ownership as a way of controlling agency costs that may arise from information asymmetry problem.

In terms of external corporate governance mechanisms, Table 4 shows that, in the pre-Cadbury period, the relationship between block ownership and firm value is weak for both high and low growth firms. In contrast, in the post Cadbury period (Panel B), the relationship is negative and significant for high growth firms but weak for low growth firms. To the extent that these block holders are pension funds, the largest investor category in the U.K., these results are consistent with Faccio and Lasfer (2000) who show that pension fund investment is negatively related to firm value. The results also show that leverage is negatively associated with value for high growth firms but it is not significant for low growth companies in both pre- and post-Cadbury periods. When market leverage is used (total debt

over total debt plus market value of equity), the relationship is negative and significant for both high and low growth firms. These results are not consistent with McConnell and Servaes (1995) who find that leverage is positively related to value for low growth firms, but negatively related to value for high growth companies. The results suggest that the monitoring role of block holders and bondholders is not effective.

### *4.3. Adoption of the Cadbury Recommendations and Firm Value*

The results presented above indicate that the internal control mechanisms depend significantly on firm's growth opportunities. In particular, despite the fact that high growth firms are more likely to adopt the Cadbury recommendations, they rely more on managerial ownership as a way of mitigating the potential agency problems than on their board structure. In contrast, low growth firms are slow in adopting the Cadbury recommendations but their value is significantly related to their board structure. In the pre-Cadbury period, there is no relationship between firm value and board structure. These results could be due to differences in sample size or to market perceptions of the importance of the board structure between the pre- and post-Cadbury periods.

To address this question I select companies that had data in both the pre- and post-Cadbury period. In addition, I followed these companies from 1990 to 1997 and exclude any company that changed more than once its growth classification. This condition is necessary to classify companies into high growth in both the pre- and post-Cadbury period (*HG Pre–HG Post*), low growth in both periods (*LG Pre–LG Post*), low growth in the pre-Cadbury period and high growth in the post-Cadbury period (*LG Pre–HG Post*) and, finally, into high growth in the pre-Cadbury and low-growth in the post-Cadbury period (*HG Pre–LG Post*). These restrictions resulted in 374 firms.[15] Then, as in Dahya et al. (2002), I analyse separately firms that always complied with the Cadbury recommendations (*Always*), those that never complied (*Never*), those that complied in the post-Cadbury but not in the pre-Cadbury (*Post-Adopt*) and, finally, those that complied in the pre-Cadbury but not in the post-Cadbury period (*Pre-Adopt*). The results are reported in Table 5. The last two columns provide the *p*-value of differences in means between high growth (*HG Pre–HG Post*) and low growth (*LG Pre–LG Post*) companies. The *Pre-Adopt* results are not reported as there are only 12 firms in the sample that adopted the recommendations in the pre-Cadbury period but not in the post-Cadbury period.[16]

For the sample as a whole the first column indicates that 25.4% of companies (95 firms) always adopted the recommendations, 31.3% (117 firms) never adopted

***Table 5.*** Adoption Rate of Cadbury Recommendations and Firm Value.

| | All 374 Companies (1) | | HG Pre–HG Post (2) | | LG Pre–HG Post (3) | | HG Pre–LG Post (4) | | LG Pre–LG Post (5) | | *p*-Value (2)–(5) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Rate | CAR 1990–1997 | Rate | CAR 1990–1997 | Rate | CAR 1990–1997 | Rate | CAR 1990–1997 | Rate | CAR 1990–1997 | Rate | CAR 1990–1997 |
| Panel A: Rates and average firm value | | | | | | | | | | | | |
| Always | 25.4 | 0.06 | 29.5 | 1.49 | 24.1 | −0.34 | 31.8 | −1.91 | 17.3 | 1.13 | 0.04 | 0.17 |
| Never | 31.3 | −1.71 | 26.7 | 2.03 | 28.9 | −3.28 | 31.7 | −7.04 | 37.5 | 0.00 | 0.09 | 0.01 |
| Post-adopt | 40.1 | −1.21 | 42.9 | −3.97 | 44.6 | 1.86 | 31.7 | −2.67 | 40.4 | 0.58 | 0.72 | 0.02 |
| All (N/Average) | 374 | −0.99 | 105 | −0.49 | 82 | −0.10 | 83 | −3.99 | 104 | 0.17 | – | 0.00 |
| Panel B: *p*-Value of differences in means | | | | | | | | | | | | |
| Always versus never | 0.07 | 0.23 | 0.65 | 0.88 | 0.48 | 0.30 | 0.98 | 0.07 | 0.00 | 0.08 | | |
| Always versus post-adopt | 0.00 | 0.39 | 0.05 | 0.04 | 0.00 | 0.44 | 0.98 | 0.70 | 0.00 | 0.68 | | |
| Never versus post-adopt | 0.01 | 0.74 | 0.01 | 0.04 | 0.04 | 0.09 | 0.99 | 0.04 | 0.67 | 0.74 | | |

*Note:* The table reports the proportion of companies that adopted the Cadbury recommendations and the average annual cumulative abnormal returns from 1990 to 1996. The sample includes 374 companies with data in both the pre- (1990–1991) and post-Cadbury (1996–1997) periods. The sample firms are classified first into four categories according to whether they were high growth in both pre- and post-Cadbury periods (*HG Pre–HG Post*), low growth in both periods (*LG Pre–LG Post*) or whether they were high growth in the pre- and low growth in the post-Cadbury period (*HG Pre–LG Post*), or conversely, low growth in the pre- and high growth in the post-Cadbury period (*LG Pre–HG Post*). Then companies are sorted into four categories according to whether they were: (a) *Always* in compliance with the Cadbury recommendations; (b) Never in compliance with the recommendations; and (c) they complied only in the *Post-Cadbury* period. The results of companies that complied only in the *Pre-Cadbury* period are not reported as there are only nine cases. The last two columns report the differences in means between companies that were classified as high growth in both the pre- and post-Cadbury periods (HG Pre–HG Post) and those that were always low growth (LG Pre–LG Post).

and 40.1% (150 firms) adopted the recommendations in the post-Cadbury period. The differences in mean rates are all statistically significant as reported in Panel B, suggesting that, as expected, there are significantly more companies that adopted the recommendations in the post-Cadbury period ($p = 0.00$ for *Always versus Post-Adopt* and $p = 0.01$ for *Never versus Post-Adopt*) but that there are more companies that never adopted the recommendations compared to those that have always adopted the recommendations ($p = 0.07$). These results are different from Dahya et al. (2002) who show that only 5% of the 460 companies (22 firms) never complied with the recommendations while 33% (150 firms) always complied.[17]

Table 5 shows that high growth companies appear to have significantly higher adoption rates than low growth companies. There are 29.5% of companies in the *HG Pre–HG Post* sample that always adopted the recommendations compared to 17.3% in the *LG pre–LG Post* sample ($p = 0.04$). There are relatively similar number of companies that adopted in the post-Cadbury period for both sub-samples (40.4% compared to 42.9%, p = 0.72). As a result, there are more low growth than high growth companies (37.5% compared to 26.7%) that never adopted the recommendations ($p = 0.09$). The results also show that for high growth firms the proportion of companies in *Always* (29.5%) is similar to that of *Never* (26.7%). In contrast, for low growth firms, there are significantly more companies in the *Never* sample (37.5%) compared to that of *Always* sample (17.3%) but the *Never* and *Post-Adopt* are similar ($p = 0.67$). The differences in the adoption rates in the two remaining sub-samples are not statistically significant, except that there are more *LG Pre–HG Post* compared to *HG Pre–LG Post* companies that adopted in the post-Cadbury period ($p = 0.09$).

To assess the market perception of the adoption of Cadbury recommendations, I first compute the average cumulative annual abnormal returns for each company in the sample from 1990 to 1996. The abnormal returns are computed as the difference between the actual return on the share and the percentage return available over the same period from an investment in a diversified portfolio with the same beta. The data is extracted from the London Business School Risk Measurement Service. Table 5 shows that, for the sample as a whole, the average annual abnormal return is −0.99%. Companies that have always adopted the Cadbury code generate 0.06% (median 0.00%) compared to −1.71% (median −0.93%) for those that have never adopted the code. However, the differences in means reported in Panel B (and median not reported) are not statistically significant ($p = 0.23$). *HG Pre–HG Post* companies that have never adopted the code generate higher abnormal returns of 2.03% per year compared to 1.49% for companies that have always adopted the code, but the differences in means (and medians) are not significant ($p = 0.88$). It is interesting to notice that

companies that adopted in the post-Cadbury period generate negative abnormal returns of −3.97% per year, significantly lower than those of the *Never* or *Always* samples ($p = 0.04$). Unfortunately, data on the exact date of the adoption is not available, thus the negative abnormal returns of the *Post-Adopt* sample may not be necessarily due to the adoption of the Cadbury recommendations.

For the *LG Pre–LG Post* sample the average annual cumulative abnormal returns of companies that have always adopted the code is 1.13 compared to 0.00% for companies that have never adopted the code ($p = 0.08$). The returns of companies that adopted the code in the post-Cadbury period are also higher than those of the *Never* sample (0.58% compared to 0.00%) but the difference in means is not statistically significant (0.74). The remaining two sub-samples also provide interesting results. In particular, *HG Pre–LG Post* companies appear to be distressed as they generate negative abnormal returns of −3.99% per year. This negative performance is much more pronounced for companies that have never adopted the code (−7.04) rather than for companies that have always adopted the code (−1.91%), ($p = 0.07$). These results are not driven by outliers as the median returns, not reported, also show that firms that have never adopted the code generate −4.69% compared to −0.09% for those that have always adopted the code. These results appear to provide support for the findings in the previous section and suggest that there are only low growth companies that benefit from the adoption of the Cadbury recommendations.

As a robustness check, I analysed the cumulative abnormal returns for 1992 and 1997, i.e. one year ahead of the original sample periods. I find, but not report, that in 1992, *HG Pre–HG Post* companies that always adopted the code generate a median CARS of 0.0% and those that never adopted had 1.0% ($p = 0.41$). The CARs of *LG Pre–LG Post* companies that always adopted the code are also 0.0%, but the CARs of those that never adopted the Code are −1.91%. However, the differences between the *Always* and the *Never* sub-samples are not significant ($p = 0.38$). In contrast, in 1997, the corresponding CARs for *HG Pre–HG Post* companies are −7.74 and −9.0% ($p = 0.76$) while for *LG Pre–LG Post* companies they are −0.33% and −12.40% ($p = 0.08$). These results suggest that, in the post-Cadbury period, the market is valuing more low growth companies that adopted the Code.

These results are also simulated using $Q_{t+1}$ to conform to the results presented in the previous section. I find, but not report, that, for the sample as a whole, the average $Q$ in 1997 of companies that have always adopted the recommendations of 1.38 is significantly higher than the 1.06 of those that never adopted ($p = 0.07$) or than the 1.10 of those that adopted in the post-Cadbury period ($p = 0.00$). However, for high growth companies the relationship between firm value and the adoption rate is relatively homogeneous: The average $Q$ of companies that have

always adopted the recommendations is 1.56 compared to 1.46 for companies that have never adopted ($p = 0.75$). In contrast, for low growth companies, $Q$ of companies that have always adopted the recommendations is 1.19 compared to 0.82 for companies that have never adopted ($p = 0.07$). Similarly, the average $Q$ of *HG Pre–LG Post* firms that have always adopted the recommendations of 1.33 is significantly higher than that of the *Never* and *Post-Adopt* samples. This trend is not observed in 1992. For example, the average $Q$ of *LG Pre–LG Post* companies that have always adopted is 1.04, compared to 1.05 for those that have never adopted ($p = 0.90$). These findings are also simulated using changes in firm value from 1990 to 1996 as a measure of performance. The results, not reported, indicate that for the *HG Pre–HG Post* sample, the average increase in $Q$ for the *Always*, *Never* and *Post-Adopt* companies are 12.8, 12.9 and 33.0%, respectively. The differences in means are not significant. In contrast, for *LG Pre–LG Post* companies, the average increase in $Q$ of the *Never* adopted companies is 0.73% compared to 21.4% for the *Always* sample and 24.9% for the *Post-Adopt* companies. The differences in means between the *Always* and *Never* and *Post-Adopt* and *Never* are significant ($p = 0.02$ and $p = 0.03$, respectively). In sum, although there are more high growth companies that adopted the recommendations, such adoption, on average, does not necessarily lead to value creation, while, for low growth companies, the adoption of the recommendations is critical in value creation in the post-Cadbury period.

### *4.4. Robustness*

This section describes the results of of the robustness checks of the findings. I check whether the results are sensitive to alternative proxies for firm value and to endogeneity.

#### *4.4.1. Are the Results Sensitive to the Definition of Firm Value?*

To test whether the regression results in Table 3 are shaped by the choice of the proxy variable for firm value, $Q$, I re-estimate the results using $Q$ adjusted for industry median, $Q_{\text{ADJ}}$ and market-to-sales, M/S.[18] As in Table 4, five regressions are run for both high growth and low growth firms. Table 6 reports the coefficients of each board structure variable obtained from various separate regressions. The results of the control variables are not reported as most are qualitatively similar to those in Table 4.

Panel A reports the results using industry adjusted $Q$ as the dependent variable. The results mimic those reported in Table 4. In the pre-Cadbury period, there are only the coefficients of board size (*#DIR*) and that of the number of executive

***Table 6.*** Robustness Check.

| | Pre-Cadbury Period | | | | | | Post-Cadbury Period | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | High Growth Companies | | | Low Growth Companies | | | High Growth Companies | | | Low Growth Companies | | |
| | Coefficient | *p*-Value | $\overline{R^2}$ | Coefficient | *p*-Value | $\overline{R^2}$ | Coefficient | *p*-Value | $\overline{R^2}$ | Coefficient | *p*-Value | $\overline{R^2}$ |
| Panel A: Dependent variable $Q_{ADJ}$ | | | | | | | | | | | | |
| Adopt | 0.5E-02 | 0.96 | 0.21 | 0.14 | 0.12 | 0.01 | −0.20 | 0.04 | 0.10 | 0.08 | 0.09 | 0.09 |
| #DIR | −0.03 | 0.05 | 0.22 | −0.9E-02 | 0.51 | 0.02 | −0.07 | 0.00 | 0.10 | −0.02 | 0.08 | 0.09 |
| #ED | −0.03 | 0.14 | 0.22 | −0.04 | 0.00 | 0.02 | −0.08 | 0.00 | 0.10 | −0.04 | 0.06 | 0.09 |
| %NED | 0.9E-03 | 0.58 | 0.21 | 0.2E-02 | 0.13 | 0.01 | −0.05 | 0.87 | 0.09 | 0.30 | 0.09 | 0.09 |
| Split | 0.10 | 0.16 | 0.22 | 0.01 | 0.84 | 0.02 | −0.21 | 0.19 | 0.09 | 0.09 | 0.09 | 0.08 |
| NeChair | 0.11 | 0.25 | 0.22 | 0.11 | 0.18 | 0.01 | 0.09 | 0.23 | 0.09 | 0.08 | 0.08 | 0.09 |
| Panel B: Dependent variable market-to-sales | | | | | | | | | | | | |
| Adopt | 0.14 | 0.54 | 0.46 | −0.15 | 0.20 | 0.26 | −0.71 | 0.34 | 0.13 | 0.18 | 0.05 | 0.20 |
| #DIR | −0.05 | 0.09 | 0.46 | −0.04 | 0.18 | 0.26 | −0.14 | 0.27 | 0.13 | −0.07 | 0.03 | 0.20 |
| #ED | −0.06 | 0.06 | 0.46 | −0.03 | 0.18 | 0.26 | −0.11 | 0.64 | 0.13 | −0.11 | 0.00 | 0.21 |
| %NED | 0.2E-02 | 0.51 | 0.46 | 0.3E-02 | 0.16 | 0.26 | −2.08 | 0.50 | 0.13 | 0.86 | 0.01 | 0.21 |
| Split | 0.16 | 0.23 | 0.46 | −0.11 | 0.22 | 0.26 | −0.33 | 0.73 | 0.13 | −0.01 | 0.89 | 0.19 |
| NeChair | 0.27 | 0.18 | 0.46 | 0.14 | 0.21 | 0.26 | −1.14 | 0.11 | 0.13 | 0.17 | 0.06 | 0.20 |
| Panel C: Dependent variable market-to-sales highest growth quintile versus lowest growth quintile | | | | | | | | | | | | |
| Adopt | −0.05 | 0.92 | 0.60 | −0.09 | 0.49 | 0.31 | −2.70 | 0.15 | 0.11 | 0.30 | 0.07 | 0.11 |
| #DIR | 0.03 | 0.79 | 0.60 | −0.03 | 0.22 | 0.32 | −0.31 | 0.50 | 0.11 | −0.12 | 0.04 | 0.11 |
| #ED | 0.07 | 0.53 | 0.60 | −0.01 | 0.64 | 0.31 | 0.13 | 0.82 | 0.11 | −0.23 | 0.00 | 0.15 |
| %NED | −0.5E-02 | 0.61 | 0.60 | −0.1E-02 | 0.40 | 0.32 | −7.05 | 0.27 | 0.11 | 1.68 | 0.03 | 0.12 |
| Split | 0.29 | 0.38 | 0.60 | −0.08 | 0.39 | 0.32 | −1.28 | 0.56 | 0.11 | 0.04 | 0.82 | 0.09 |
| NeChair | 0.24 | 0.61 | 0.60 | −0.02 | 0.84 | 0.31 | −2.59 | 0.19 | 0.11 | 0.28 | 0.06 | 0.11 |

***Table 6.*** (*Continued*)

| | Pre-Cadbury Period | | | | | | Post-Cadbury Period | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | High Growth Companies | | | Low Growth Companies | | | High Growth Companies | | | Low Growth Companies | | |
| | Coefficient | *p*-Value | $\overline{R^2}$ | Coefficient | *p*-Value | $\overline{R^2}$ | Coefficient | *p*-Value | $\overline{R^2}$ | Coefficient | *p*-Value | $\overline{R^2}$ |
| Panel D: 3SLS Dependent variable: *Q*, Sample: 627 companies in pre-Cadbury and 1171 in post-Cadbury | | | | | | | | | | | | |
| Adopt | 0.002 | 0.92 | 0.32 | 0.10 | 0.09 | 0.09 | −0.15 | 0.03 | 0.19 | 0.12 | 0.07 | 0.15 |
| #DIR | −0.05 | 0.03 | 0.32 | −0.003 | 0.23 | 0.09 | −0.09 | 0.00 | 0.19 | −0.06 | 0.05 | 0.15 |
| #ED | −0.09 | 0.22 | 0.32 | −0.08 | 0.00 | 0.09 | −0.11 | 0.00 | 0.19 | −0.08 | 0.06 | 0.15 |
| %NED | 0.0006 | 0.76 | 0.32 | 0.005 | 0.18 | 0.09 | −0.07 | 0.72 | 0.19 | 0.31 | 0.04 | 0.15 |
| Split | 0.22 | 0.87 | 0.32 | 0.12 | 0.55 | 0.09 | 0.15 | 0.56 | 0.19 | 0.28 | 0.10 | 0.15 |
| NeChair | 0.12 | 0.34 | 0.32 | 0.008 | 0.08 | 0.09 | 0.13 | 0.35 | 0.19 | 0.14 | 0.09 | 0.15 |

*Note:* The table shows the regressions coefficients of the board structure variables using Eqs (1)–(10) in Table 3 with lagged control variables and industry dummies. The coefficients of the control variables are similar to Table 3, thus not reported. *Low (High) Growth Companies* are companies with Earning Price ratio above (below) the industry median. *#DIR* is number of directors; *#ED* is the number of executive directors, %*NED* is the proportion of non-executive directors, *Split* is a dummy variable equal to one if firm splits the roles of CEO and chairman, zero otherwise; *NeChair* is a dummy variable equal to one if firms appointed a non-executive director as a chairman. In Panel A. the dependent variable is $Q_{\mathrm{ADJ}}$, *Q ratio* (the ratio of the sum of market value of equity and book value of long and short-term debt over total assets) less industry median. In Panels B the dependent variable is Market-to-Sales, the ratio of the sum of market value of equity and book value of long and short-term debt over sales. In Panel C the dependent variable is Market – to-Sales but the sample includes very high growth (quintile 1) and very low growth (quintile 5) firms. In Panel D. the coefficients of the board structure are based on three stage least squares equations of *Q*, board and managerial ownership. The *t*-statistics are based on standard errors that are heteroskedastic-consistent (White, 1980).

directors (*#ED*) that are negative and significant for high growth and low growth firms, respectively. In the post-Cadbury period, the adoption dummy is negative and significant for high growth firms but positive and significant for low growth firms, implying that only low growth firms benefit from the Cadbury Code. Board size (*#DIR*) and the number of executive directors (*#ED*) are all negative and significant for both high and low growth firms, suggesting that larger boards and, in particular, higher number of executive directors reduce value. The remaining board structure variables are not significant for high growth companies. In contrast, for low growth firms, the proportion of non-executive directors, the split dummy and the appointment of a non-executive director as a chairman are all positive and statistically significant, suggesting that non-executive directors and the separation of the roles of the chairman and CEO play a significant role in mitigating the agency conflicts between managers and shareholders. The results based on market-to-sales (M/S) as a measure of firm value, reported in Panel B, are qualitatively similar, with two exceptions. First, in the pre-Cadbury period, the number of directors and executive directors are only negative and significant for high growth firms. Second, in the post-Cadbury period, none of the board structure variables of the high growth firms is significant, and, for low growth firms, the coefficient of the split dummy is negative but not significant. This suggests that the results are not too sensitive to the definition of the dependent variable, and, as above, they suggest that board structure is more important in reducing the agency conflict of low growth firms but does not affect the value of high growth firms.

*4.4.2. Is the Impact More Pronounced in Extreme Growth Groups?*

I test the hypothesis that if the board structure effect on low growth firms in the post-Cadbury period is true, then I would expect this effect to be more pronounced in the extreme groups. The results are reported in Table 6, Panel C. The samples include very high growth (quintile 1) and very low growth (quintile 5) firms, as analysed in Table 2 and each quintile includes about 108 firms in the pre-Cadbury period and 220 firms in the post-Cadbury period. The dependent variable is also Market-to-Sales for ease of comparison with Panel B, but the results based on *Q* and industry adjusted *Q* are all similar. The results show that in the pre-Cadbury period, none of the board structure variables is significant at any confidence level. In the post-Cadbury period, the coefficients of the board structure variables are, as in Panel B, all negative but not significant. The levels of the coefficients are all much higher than those reported in Panel B. For low growth firms, the coefficients are all significant and signed as expected with the exception of the split dummy which is not significant. These results are similar to those reported in Panel B, except that the magnitude of the coefficients is much higher in Panel C. For example, the

coefficient of *%NED* increases from 0.86 for all low growth firms to 1.68 for the very low growth firms. Similarly, the coefficient of *Adopt* increases from 0.18 to 0.30 and that of executive directors from −0.11 to −0.23.

The results are also simulated using changes in firm value *Q* from 1990–1991 to 1991–1992 in the pre-Cadbury period and from 1996–1997 to 1997–1998 in the post-Cadbury period. The results, not reported are qualitatively similar. For example, the adoption dummy is not significant in the pre-Cadbury period and for high growth firms in the post-Cadbury period. However, for low growth firms in the post-Cadbury period, the coefficient of *Adopt* is 0.071 ($p = 0.04$). Similarly, for the very low growth firms (quintile 5), the coefficient of the *Adopt* dummy amounts to 0.15 ($p = 0.04$) while for the very high growth firms (quintile 1) and in the pre-Cadbury period none of the board structure variables is significant.

*4.4.3. Endogeneity*

The results using contemporaneous dependent and independent variables may be subject to endogeneity problem of board composition and firm value as companies may adopt a package of responses that will mitigate the agency problem. Thus, board structure will not only be dependent on firm's growth opportunities but also on other factors used to mitigate the agency problem such as managerial ownership and block ownership. In addition, as Hermalin and Weisbach (1998) argue, poor performance leads to increases in board independence. In cross-sectional analysis this effect is likely to lead to a negative relation between firm performance and the proportion of non-executive directors. In this case, a system of equations such as those of Agrawal and Knoeber (1996) or the instrumental variables method as those used by Palia (2001) will overcome the endogeneity problem. An attempt is made to correct for this problem by using a combination of the Agrawal and Knoeber (1996) and Palia (2001) methodologies. As in Agrawal and Knoeber (1996), Bhagat and Black (2001) and Mak and Li (2001), a set of three stage least squares equations (3SLS) for firm value, board structure, and managerial ownership is constructed as follows:

$$\begin{cases} Q = \alpha_0 + \alpha_1 \text{Board} + \alpha_2 \text{MGT} + \alpha_3 \text{MGT}^2 + \alpha_4 \text{Block} + \alpha_5 \text{Blev} + \alpha_6 \text{Ln(ME)} \\ \text{Board} = \beta_0 + \beta_1 Q + \beta_2 \text{MGT} + \beta_3 \text{Block} + \beta_4 \text{Ln(ME)} \\ \text{MGT} = \gamma_0 + \gamma_1 Q + \gamma_2 \text{Board} + \gamma_3 \text{Ln(ME)} \end{cases}$$

Then, I use a set of instrumental variables such as firm size, R&D/Sales, capital intensity (Fixed assets over total assets), standard deviation of stock returns and the age of the firms.[19] The results are reported in Table 6, Panel D. As in Panels A to C, I report only the coefficients of the board structure variables. The dependent variable is, as in Table 4, *Q* and the sample includes 627 companies in

the pre-Cadbury and 1171 companies in the post Cadbury period. The coefficients and the *t*-statistics for board independence are virtually unchanged from Table 4, suggesting that endogeneity and model misspecification are not affecting our results.[20] In the pre-Cadbury period and for high growth firms in the post-Cadbury period none of the board independence variables is significant. These results are consistent with Bhagat and Black (2001) who report similar results for a large sample of U.S. firms. However, these results apply only for high growth firms in the post-Cadbury period. The last three columns of Table 6, Panel C. reports a strong relationship between firm value and board structure for the case of low growth firms. As in Table 4, Panel B, Eqs (6)–(10), the coefficients of all board structure variables are significant and signed as expected. The results suggest that, in low growth firms, independent boards act for the best interest of shareholders by mitigating agency conflicts, while in high growth firms boards reduce their monitoring intensity probably to get more information from the CEO.

## 5. DISCUSSION AND CONCLUSIONS

The purpose of the paper is to analyse the relationship between board structure and firm value in the U.K. I expect boards to differ across firms with different agency costs problems and need for advise. I use growth opportunities as a proxy for the severity of agency problems and the extent to which managers will need advice, and thus disclose information to the board. These propositions imply that low growth firms are expected to have more non-executive directors on their boards but the relationship between the relationship between board structure and firm value is weak. In contrast, in low growth firms where the role of non-executive directors as advisors is low, boards are expected to be less independent but the relationship between firm value and board structure is expected to be strong to reflect the monitoring role of the board. Consistent with these predictions, I find that the board of high growth companies is more likely to be independent, i.e. to have a high proportion of non-executive directors and to split the roles of the chairman and CEO. However, such boards are not positively related to firm value, suggesting that, in high growth firms, boards reduce their monitoring intensity to encourage managers to disclose more information. In contrast, in low growth firms, boards are less likely to be independent, despite the Cadbury (1992) recommendations. However, low growth companies that have a high proportion of non-executive directors and those that split the roles of the chairman and the CEO generate significantly higher returns to their shareholders. These results are also consistent with the agency theory, which predicts that boards are likely to monitor low growth companies to mitigate agency costs that result from the free cash flow problem. In

contrasts, in high growth firms, board of directors may find it difficult to monitor managers because of the complexity in their decision-making and their behaviour is difficult to observe and to monitor because of their discretionary investment opportunities, and the proprietary information they hold. In this case high growth firms are likely to rely on alternative internal and external governance systems to mitigate their agency conflicts.

I find that managerial ownership is one of these alternative monitoring mechanism. The results show that, for low growth firms, the relationship between managerial ownership and firm value is weak, implying that low growth firms rely only on board structure to reduce their agency costs resulting form the free cash flow problems. In contrast, for high growth firms, there is a strong non-linear relationship between firm value and managerial ownership, optimised at about 47% in the pre-Cadbury period and 42% in the post-Cadbury period, suggesting that high growth firms rely more on managerial ownership to mitigate the agency problems. These results are consistent with Hermalin and Weisbach (1991) who show that there is no relationship between board composition and performance, while there is a strong relationship between managerial ownership structure and performance. However, these conclusions apply only to high growth firms. High growth companies do not seem to adopt the Cadbury recommendations to minimise their agency costs, but rather to reflect the need to provide a good corporate governance image so that they can raise additional finance in the market to overcome their severe information asymmetries and capital constraints. The overall results suggest that imposing the same board structure for all companies independently of their specific characteristics and needs is likely to reduce the value of firms that may be forced to depart from corporate governance structures which have been successful.

Although the results highlighted the importance of growth options on the design of internal corporate governance system, further work is required to fully understand some puzzling issues reported in this paper. First, given that Cadbury had a dramatic effect on the board of U.K. companies it is surprising to see that it is only in the post-Cadbury period that the relationship between board structure and firm value is apparent. If the board structure reduces agency conflicts, the relationship between firm value and board variables should have been stronger in the pre-Cadbury period when companies choose, without any obligation, to have a board that includes a large proportion of non-executive directors and to split the roles of the chairman and the CEO. One possible explanation is that in the pre-Cadbury period the board is not likely to be scrutinised by the market, thus allowing companies to recruit non-independent directors. In contrast, in the post-Cadbury period, the market is expected to pay more attention to the quality of the non-executives. The analysis of stock returns of companies with continuous

data over the two sample periods provides support for this argument and suggests that the Cadbury has improved the quality of non-executive directors.[21] However, further research is required to assess the true level of independence of the non-executive directors in the pre- and post-Cadbury periods through, for example, the analysis of cross-directorships.

Second, the results point to a space for a further improvement in the structure of boards of high growth firms as the weak relationship between board structure and value could imply a high demand for more capable managers, instead of a relatively simple restructuring of the board. High growth firms are likely to have more complex decisions to make than low growth firms. Thus, they require non-executive of high calibre who are not likely to be available in the market. This suggests that the non-executive directors appointed on the boards of high growth firms are not capable to fulfil their role in monitoring management, and thus, do not increase firm's value. On the other hand, the weak relationship between the value of high growth firms and board structure could suggest that non-executive directors are not willing to monitor managers because, unlike their U.S. counterparts, they are not likely to be sued if things go wrong. In this case, the results provide support for the recent criticism of the role of non-executive directors in the U.K. who are considered to be the "missing link" in the chain of good corporate governance. They are called upon to reshape their role and to meet once a year with a company's top five or six shareholders without the presence of the company's CEO.[22] The use of data on, say, the qualification of the non-executive directors will provide more insights into this issue.

Finally, it is also important to understand further whether board structure of high growth firms reduces the information asymmetry, especially at a time of raising external financing. In this case I would expect fund raising of high growth firms that adopted the Cadbury recommendations to be much easier and cheaper than high growth companies that have not adopted the *Code.* The extent to which these additional issues will strengthen or alter the results of this paper is the subject of further research.

## NOTES

1. See Bhagat and Black (1998), Denis and McConnell (2003), Hermalin and Weisbach (2003), John and Senbet (1998) and Shleifer and Vishny (1997) for a review.

2. Jensen (1993) argues that the board reacts too late and takes too long to affect major changes because its effectiveness is limited by the lack of information provided by the managers.

3. Growth and free cash flow would be more informative about the extent of agency problems because a low growth firm with lots of free cash flow requires more careful monitoring.

In this paper the focus is more on the advice managers are likely to get from the board but I assume that the measure of growth opportunities captures also the free cash flow problem.

4. Francis and Stokes (1993) find that growth firms incur higher monitoring costs. These costs are measured by external audit fees, internal auditors' salaries and total directors' compensation.

5. *Extel Financial* is a database that reports all the information contained in the financial statements and stock market data of all U.K. companies.

6. There are a number of proxies for growth options, including Tobin's *Q*, market-to-sales and R&D over total assets. Gaver and Gaver (1993) report a high correlation between these growth measures. I replicate the analysis using market-to-book as a proxy for growth. The results are qualitatively similar. I therefore report the results based on EP as a measure of growth opportunities and market-to-book, Tobin's *Q* and market-to-sales to proxy for firm value. I also use firm's age as a proxy for a need to get advice from outside directors. I expect younger firms to have stronger need for advice. The results did not change substantially.

7. The Cadbury (1992) states that companies should appoint independent non-executive directors with high caliber so that their views will carry weight in board discussions. These non-executive directors are to be in a majority on the nominating committee which is responsible for making recommendations for board membership, they should be the sole or majority members of the remuneration committee which makes recommendations to the board on the pay of executive directors, and of the audit committee whose function is to advise on the appointment of auditors, to insure the integrity of the firm's financial statements and to discuss with the auditors any problems arising during the course of the audit. Unfortunately, data on the independence criteria and on the composition of the various committees is not available. Thus, I assume that companies that adopted the recommendations are those that split the roles of the chairman and CEO and those that have three or more non-executive directors on the board.

8. This variable requires that the roles of chairman and CEO are split and that the chairman is a non-executive director.

9. U.K. quoted companies are required to disclose in their financial statements the names of all the board members, and the proportion of shares held directly and indirectly (beneficial and non-beneficial) by executive and non-executive directors, even if the ownership stake is zero (Companies Act, 1985). The officers who are not members of the board are only subject to the ordinary disclosure rules of 3% or above. This legal disclosure requirement meant that I had to define *managerial ownership* as ownership by members of the board of directors. Although this definition is consistent with that of Morck et al. (1988) and Short and Keasey (1999), it differs from that of McConnell and Servaes (1990) and Holderness et al. (1999) as I do not include shares owned by corporate officers not members of the board. I tried to split managerial ownership variable into ownership of executive and non-executive directors. I find that non-executive directors' ownership is very small (less than 1%). I assume that the inclusion of this holding is not going to affect the analysis.

10. I define a block holder as a shareholder, other than directors, that individually holds at least 3% of a company's ordinary shares. This level is set by disclosure rules (Company Act, 1995, Sections 198 and 199). The threshold was 5% from 1985 to 1989. The variable *Block* represents the sum of all the stakes held by block holders.

11. However, the differences in *Q* over the two periods are likely to be driven by the relatively low market values in the 1990–1991 recession period. For the sample of all U.K. non-financial firms the average *Q* in 1990–1991 period is 0.994 compared to 1.696 for the

1996–1997 period ($p = 0.00$). Thus, the intrinsic characteristics of the samples, other than market values, are likely to be similar.

12. This is lower than the 12 reported by Yermack (1996) and 13 by Hermalin and Weisbach (1988) in the U.S. However, these two studies analysed mainly large firms.

13. However, this proportion is different from that reported in U.S. studies. For Fortune 500, the average holding is between 10.6 and 12.4% (e.g. Cho, 1998; Jensen & Warner, 1988; Morck et al., 1988). For a sample of U.S. middle-size firms, Denis and Kruse (2000) find that officers and directors hold on average (median) 20% (11.3%) of shares. For all listed firms in the U.S., Holderness et al. (1999) find an average managerial holding of 21% in 1995, but for NYSE firms, the average holding is 12%.

14. For example, the inflexion points for the pre-Cadbury period are found as a solution to the following equation: $Q = 0.014\text{MGT} - 0.00015\text{MGT}^2$. I differentiate $Q$ with respect to MGT, $\delta Q/\delta\text{MGT} = 0.014 - 0.00030\text{MGT}$ I let $\delta Q/\delta\text{MGT}=0$ and I solve for MGT.

15. This sample is bound to be subject to survivorship bias. However, data unavailability and the low market values in 1990–1991 recession period made it difficult to use control samples based say on size and market-to-book. These 374 firms are significantly larger (mean £1020m compared to £549m, $p = 0.00$) but have lower $Q$ (1.16 compared to 1.30, $p = 0.00$) than the 1171 sample firms used in the previous section.

16. There is one company in the *HG Pre–HG Post* group, two in the *LG Pre–HG Post* group, four in the *HG Pre–LG Post* group and five in the *LG Pre–LG Post* group.

17. It is possible that some of our companies have changed from compliance to non-compliance over the 1991–1995 period which I was unable to capture as the data is not available. However, this is an unlikely case as it may be costly for companies to do so in a relatively short-time period. An alternative explanation could be related to the fact that Dahya et al. (2002) results appear to be based on small companies as the average book value of assets is £157m compared to £1027m for my sample. However, a simple regression shows that the adoption dummy is positively related to size as measured by *ln(ME)* ($t = 14.0$), suggesting that larger companies are more likely to adopt the recommendations.

18. Results based on stock returns are not reported here as they require different explanatory variables such as beta and book-to-market.

19. However, the equations may suffer from misspecification bias as data that is specific to managers and/or board is not available. For example, in their specification of the managerial ownership and proportion of non-executive directors' equations, Agrawal and Knoeber (1996) use tenure and founder dummy as explanatory variables. For instruments Palia (2001) use CEO experience, CEO quality and CEO age and he argues that variables that affect both firm value and managerial ownership cannot be used as instruments. Unfortunately this specific data on managers and similar data on board structure is not available in the U.K. Thus, I recognise that the endogeneity issue may not be directly accounted for in this paper, but I expect the use of the 3SLS, the lagged independent variables and the split of companies in the sample into high and low growth firms to mitigate this problem.

20. The results are qualitatively similar when I use $Q_{\text{ADJ}}$ or M/S as dependent variables and when I do not use instrumental variables.

21. These results are consistent with Dahya et al. (2002) who find that, following Cadbury adoption, the increase in outside board members has resulted in an increase in the sensitivity of management turnover to corporate performance, thus suggesting that the Cadbury recommendations have improved the quality of the board oversight in the U.K.

22. See for example, *Financial Times*, 18 February 2002.

## ACKNOWLEDGMENTS

I am grateful to Mara Faccio for her suggestions and contribution to an earlier version of the paper and to Yakov Amihud, Lorenzo Caprio, Diane Dennis, Michael Hammerslag, Larry Lang, John McConnell, Gulnur Muradoglu, Geof Stapledon, an anonymous referee and seminar participants at Bilkent University, Hacettepe University, Cass Business School, the 2000 European Financial Management meetings, the 2000 Financial Management meetings and the 2001 Multinational Finance meetings for valuable insights. The usual disclaimer applies.

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# DOES MONETARY POLICY MATTER FOR CORPORATE GOVERNANCE? FIRM-LEVEL EVIDENCE FROM INDIA

Saibal Ghosh and Rudra Sensarma

## ABSTRACT

*The paper assembles data on over 1,000 manufacturing and services firms in India for the entire post-reform period from 1992 through 2002 to examine the association between corporate governance and monetary policy. The findings suggests that: (a) public firms are relatively more responsive to a monetary contraction* vis-à-vis *their private counterparts; and (b) quoted firms lower their long-term bank borrowings in favour of short-term borrowings, post monetary tightening, as compared with unquoted firms. A disaggregated analysis based on firm size and leverage above a certain threshold validates these findings. The study concludes by analyzing the broad policy implications of these findings.*

## 1. INTRODUCTION

Two main competing paradigms dominate the literature on corporate financial structures. The first strand of thinking argues that there is an optimal financial structure in every firm that depends on various attributes of the firm. According

**Corporate Governance**
**Advances in Financial Economics, Volume 9, 327–353**

**ISSN: 1569-3732/doi:10.1016/S1569-3732(04)09013-9**

to this view, the firm is seen as choosing its financial structure by minimizing its overall cost of capital, which is a weighted average of the cost of equity and the cost of debt (Jensen & Meckling, 1976). The second approach to financial structure choice by firms postulates that firms establish a hierarchy of preferences towards sources of funds in that they first fully utilise all available internal resources and only in case their financing needs are not satisfied through this route, they approach the market for external sources (Myers & Majluf, 1984). Even in this case, they prefer to raise money through debt, which does not suffer from asymmetric information problems and only if they cannot meet their remaining requirement through this source, they access the equity route for resource augmentation.

Although information asymmetry lies at the core of the Myers-Majluf argument, it is easy to discern reasons as to why firms might have the same type of lexicographic preference towards sources of finance. The most obvious is that of control and the threat of takeover that equity carries with it. Others relate to the fact that firms might not be keen to reveal their investment plans to public financiers and consequently, prefer to be financed by private capital (such as bank loans). Another possibility might be simply the fact that firms are too small to credibly signal the quality of their investment project to private financiers, and as a result, rely on banks for supplementing their capital base.

On the other hand, recent insights in monetary theory have underscored the fact that it is important to analyze the differences in impact of monetary policy on various types and classes of firms. The first line of thinking, the *credit view* (Bernanke & Gertler, 1995) observes that bank-dependent firms are more likely to be affected by a monetary contraction than firms that rely less on bank financing and more on capital markets. Public firms will be able to adjust their debt positions, e.g. decrease their leverage by issuing equity, while private firms cannot do so if they face higher informational costs. As a consequence, private firms will face higher user cost of capital and probably make lower investment. The second view, the *relationship lending view*, predicts that higher costs of borrowing will induce public firms to adjust their loan portfolio more than private firms. This view opines that bank-dependent firms are more likely to accept higher costs of bank borrowing, because they will benefit from the relationship with the bank.

A third strand of the literature concerns corporate governance. There are four paradigms on corporate governance. The first, *direct control via debt*, implies relationship banking: companies have exclusive financing relationships with a small number of creditors and equity holders. The second, *market control via equity*, implies that firms that deviate most extensively from shareholders objectives, and consequently tend to have lower market value as shareholders dispose of their holdings, have a greater likelihood of being acquired. The third,

*market control via equity*, implies aligning the equity stakes of managers in LBOs with those of equity holders. The fourth is the *direct control via equity* wherein pressure is exerted *via* direct links from institutional investors to management, either formally through annual meetings or informally at other times.

The present paper combines these three strands of literature. In other words, it juxtaposes these viewpoints and investigates the association among corporate finance, corporate governance and monetary policy in India against the backdrop of a decade of economic reforms. Therefore, the line of research pursued in this paper is the interlinkage of the relationships among corporate finance, corporate governance and monetary policy. Empirical research in this area has, however, been largely confined to developed economies like United States (Kashyap et al., 1993, 1996; Oliner & Rudebusch, 1996) and to a limited extent, the EU economies (de Haan & Sterken, 2000) with very limited research being forthcoming in this area in the context of developing countries. One can cite two major reasons for the same. First, until recently, the corporate sector in many developing markets encountered several constraints on their choices regarding sources of funds with rigorous constraints in accessing equity markets. As a consequence, any research on the capital structure and corporate governance features of firms could have been largely constraint-driven and hence less illuminating. Second, several developing countries, even till the late 1980s, suffered from "financial repression," with negative real rates on savings and investment as well high levels of statutory pre-emptions and administered rates on lending and deposits. This could have meant restricted play of competitive forces in resource allocation and limited maneuverability of the central bank in the conduct of monetary policy.

However, questions regarding the interface between corporate governance and monetary policy have gained prominence in recent years, especially in the context of the fast changing institutional framework in these countries. Several developing countries have introduced market-oriented reforms in the financial sector. More importantly, the institutional set-up within which firms operated in the regulated era has undergone substantial transformation since the late 1980s. The move towards market-driven allocation of resources, coupled with the widening and deepening of financial markets, including the capital market, and the stringent disclosure and transparency practices consequent upon initial public offerings has provided the scope for corporates to determine their own capital choice and introduce better corporate governance practices.

The paper attempts to examine the association among corporate governance and monetary policy in India using firm-level data. The corporate sector in the country is characterised by a large number of firms, in both the public and private sectors, operating in a deregulated and increasingly competitive environment. The rigorous listing criteria for corporate houses have meant that they have to enforce strict

corporate governance practices, akin to direct control *via* equity. At the same time, the monopoly of development banks in the provision of long-term debt finance has also diminished with banks being allowed to provide long-term capital to corporates. This has provided greater option to corporates to choose their capital structure. In the financial sector, the deregulation of the administered interest rate structure, lowering of statutory pre-emptions and the introduction of an auction system for Government paper has imparted greater flexibility to the central bank in its conduct of monetary policy. The changing institutional environment for corporates coupled with the increasing freedom of the central bank in monetary policy formulation provides a suitable background for testing the linkage among these issues. It however needs to be recognised that there remains the question of the role of equity-related corporate governance mechanisms. However, the empirical analysis does not incorporate the finer details on ownership structure or features of internal corporate governance mechanisms and has, therefore, not been addressed in the present study.

Apart from attempting to be the first research paper to examine this issue in the Indian context, the major contributions of the paper is three-fold: first, the firm-level dataset employed in the study for the post-liberalisation period provides a more illuminating evidence on capital choices by firms and to what extent is the same impacted by a monetary policy shock. Secondly, the study distinguishes firms with different corporate governance features in analysing the impact of monetary policy shocks. And finally, the study examines the differential response to monetary policy for manufacturing firms as compared to those in services.

The broad findings can be summarized as follows. First, public firms in India are found to be more responsive to a monetary contraction *vis-à-vis* their private counterparts. Second, as compared with unquoted firms, quoted firms lower their long-term bank borrowings in favour of short-term borrowings, post monetary tightening. Finally, manufacturing firms are found to be relatively more responsive to monetary shock than services firms. A disaggregated analysis based on firm size and leverage above a certain threshold indicates that the above results are equally valid in the case of large firms, as well as firms, with varying degrees of leveraging.

The rest of the paper proceeds along the following lines. The next section develops a theoretical model of relationship lending. The central feature of the model is the differential response of public and private firms consequent upon a change in the policy interest rate. We make a clear distinction between public and private firms, since the subsequent analysis explicitly distinguishes these two classes of firms. Section 3 provides an overview of the received literature and explains the position of this paper in the field. The database employed in the study

is detailed in Section 4. Section 5 describes the basic hypothesis to be tested and specifies the empirical model and the methodology adopted for the study. The main findings and a discussion of the results are contained in Section 6. The ultimate section highlights the policy implications of the findings and syncopates the concluding remarks.

## 2. THEORETICAL MODEL

Assume that any firm (either public or private) employs both bank and non-bank capital. The main corporate governance difference between public and private firms is that the latter are able to acquire capital from an inner circle of financiers that often have a special connection with the firm, while the former obtain funds externally from a widely scattered group of investors that does not seek a special relation with the firm. Consequently, it can be assumed, without loss of generality, that public firms will have greater incentive to reveal more information about the company to financiers (such as banks) than private firms. Therefore, the former are able to pay lower interest rates on loans than the latter. The reverse side of the process is that banks do not have the opportunity to collect greater information on public firms than the average financier, and consequently, cannot use this information to extract possible future profits. In that case, banks will make less investment in acquiring firm-specific information on public firms. As a result, public firms are likely to benefit less than private firms from banking relationships in terms of a higher probability of success in carrying out the investment project. Therefore, while public firms will possibly pay a lower lending rate, it will probably not be able to internalise the additional benefits of a relationship loan. This view has implications for the impact of monetary policy on bank borrowing by firms. If monetary policy is tightened so that banks face higher funding costs and are forced to increase lending rate, public firms are likely to be the first to switch over to the relatively cheaper non-bank financing. In contrast, privately owned firms, benefiting from bank relationships and having less access to non-bank forms of finance, will stick longer to bank loan financing.

It is assumed that each firm is a collection of investment projects. Each project requires an investment of $I$. If the project is successful, it yields an output $Y > 0$ with probability $\theta$ and $Y = 0$ with probability $(1–\theta)$. Firms pay a premium of $\delta_i$ ($i$ = public or private) on top of the floor lending rate which is assumed to be $R$. This premium is the compensation for the services of banks offered to the firms. Since information gathering on private firms is more costly *vis-à-vis* public firm, the premium will be set higher for private firms relative to public firms. During the term of the contract, the interest rate on loans might decrease (Berger & Udell,

1995) or increase (Kaplan & Minton, 1994), which banks pass on to firms through changes in the base lending rate. It is assumed that the banking market is perfectly competitive. In other words, there exists perfect competition in supplying loans to public and private firms separately.

The primary focus of the model is on the sensitivity of the demand for bank loans to changes in interest rates. Towards this end, expected profits for various firm projects have been modeled. The expected profits of firm $i$ [i.e. $E(P_i^F)$] from a bank-financed project are:

$$E[P_i^F] = \theta[Y - (1 + R + \delta_i)] \tag{1}$$

Likewise, the expected profits of bank $i$ [i.e. $E(P_i^B)$] can be expressed as

$$E[P_i^B] = \theta(1 + R + \delta_i) - 1 \tag{2}$$

Assuming perfect competition in the banking market (hence, $E[P_i^B = 0]$), it follows that:

$$\theta = (1 + R + \delta_i)^{-1} \tag{3}$$

The above equation illustrates that, in equilibrium, the benefits firms enjoy from bank relationships are inversely related to the interest rate premium paid. Substituting this expression into the equation of expected firm profits (1) yields expression (4), i.e.:

$$E[P_B^F] = [Y - (1 + R + \delta_i)][1 + R + \delta_i]^{-1} \tag{4}$$

This leads to the basic proposition:

**Proposition.** Bank financed projects of private firms are less sensitive to monetary policy shocks than bank financed projects of public firms.

*Proof:* The proof of the proposition is straightforward. Note that, the partial derivative of expected firm profits consequent upon a change in interest rate is given by Eq. (5):

$$\frac{\partial E[P_i^F]}{\partial R} = -\frac{Y}{(1 + R + \delta_i)^2} < 0 \tag{5}$$

□

Since the premium ($\delta$) of a privately-owned firm is higher than that for publicly-owned firm, Eq. (5) reveals that the elasticity of the profitability of bank-financed projects of the private firm is smaller in absolute value than that of the public firm. The intuition behind this result can be stated as follows. A rise in interest rate changes the composition of projects towards high-risk ones and to that extent lowers expected firm profitability. Since the premium $\delta$ is higher for private

*vis-à-vis* public firms, this would imply that the decline in expected profits for private firms is higher as compared with public firms.

## 3. RECEIVED LITERATURE

Academic interest in monetary issues has devoted significant attention to the different transmission channels of monetary policy. The credit channel of monetary policy advocates the twin channels: balance sheet channel and the bank-lending channel (Bernanke & Gertler, 1995). The former channel concentrates on the impact of monetary policy shocks on the strength of the firm's balance sheet, making the firm less or more collateralised when seeking external funds, The latter channel, on the other hand, focuses on the monetary policy impact on the credit supply which filters through into the external financing premium for firms (and households).

The literature on monetary transmission has expanded rapidly in recent years. Empirical studies on this aspect can be split into several categories. The first class of models are essentially microeconomic in nature. These models seek to analyze the impact of monetary innovations in Vector Auto Regression (VAR) models (Bernanke & Blinder, 1992). These studies are couched on the notion that banks actively reshuffle their portfolio of assets following a change in the stance of monetary policy. The second class of studies analyzes firm-level investment behaviour. More particularly, the focus of these studies is to ascertain the effect of financial constraints on investment (Fazzari et al., 1988). The general conclusion of this strand of literature is that small firms are typically more liquidity constrained. A third line of thinking analyzes bank behaviour in response to monetary shocks. It is likely that smaller banks, like firms, have more trouble in attracting external funds in case of a monetary contraction (Kashyap & Stein, 1997). The final strand of research analyzes the corporate financial structure along changes in monetary regimes. These studies have focused on the U.S. economy (Kashyap et al., 1993; Oliner & Rudebusch, 1996). Kashyap et al. (1993) empirically examine the existence of a loan supply (or a bank lending) channel of monetary policy transmission for the U.S. economy using quarterly data for the period 1963–1989. Their findings suggest that tighter monetary policy tends to induce firms' to employ a convex combination of external finance wherein the issuance of commercial paper rises, while that of bank loans fall. The net effect is an overall decline in loan supply. Oliner and Rudebusch (1996), on the other hand, investigate changes in the investment behavior of small and large manufacturing firms consequent upon a change in monetary policy. In contrast to the Kashyap et al. (1993) study which employs aggregate data, the latter employ quarterly data

on manufacturing firms covering the period 1962:1–1992:4 and arrive at the conclusion that monetary tightening has differential effect on small *vis-à-vis* large firms. Specifically, for small firms, it was an observed tightening of the association between internal funds and investment after a monetary contraction. In contrast, no such association was in evidence for large firms. This would suggest a scarcity of external finance (broad credit channel) after a monetary tightening for small firms.

The present paper belongs to this last genre of thinking. In particular, the paper analyzes the impact of monetary policy on capital structure of firms with different corporate governance characteristics. With respect to corporate governance structure, international evidence has highlighted significant differences across the world (Rajan & Zingales, 1995). The choice of the corporate financial structure is dependent on the opinions with respect to governance of the suppliers of capital. This leads to the viewpoint that changes in monetary policy might have differential effect on firms in bank-based economies *vis-à-vis* market-based systems. However, studies correlating corporate financial structure with changes in monetary policy have been limited. In one of the earliest studies, Dedola and Lippi (2000) analyze four European countries and the U.S. They estimate the elasticities of output with respect to monetary policy indicators for various industries and employ firm-level indicators to explain the magnitude of these elasticities. The findings indicate that financial structure is important at the industry level: industries that have a greater concentration of small firms or firms with a lower leverage or industries that are more capital intensive are more likely to be significantly impacted by a monetary contraction. Industries that have relatively many firms in financial distress (measured by a large interest burden) are also more sensitive to monetary policy shocks. Using business survey data, findings for Germany have uncovered the evidence that smaller firms are more affected by monetary shocks than large firms (Ehrmann, 2000).

In the Indian context, there have been several studies on the analytics of monetary policy (Rangarajan, 1988; Reddy, 2002), on the financing pattern of corporate houses (Cobham & Subramanium, 1998) as well as the role of large shareholders in corporate governance (Sarkar & Sarkar, 2000) and the differential corporate governance pattern in public versus private banks (Jalan, 2002). However, research analyzing the interface between corporate finance, corporate governance and monetary policy has not been adequately addressed. The present paper attempts to address this shortcoming in the Indian context.

## 4. THE DATABASE

The database employed in the study is the publicly available *Prowess* database, generated and maintained by CMIE, the Centre for Monitoring the Indian

Economy. The database is broadly akin to the *Compustat* database of U.S. firms and is increasingly employed in the literature for firm-level analysis on Indian industry for analysis of issues like the effect of foreign ownership on the performance of Indian firms (Chibber & Majumdar, 1999), performance of firms affiliated to diversified business groups (Khanna & Palepu, 2000) and the role of large shareholders in corporate governance (Sarkar & Sarkar, 2000). The dataset contains financial information on around 8,000 companies, which are either listed (on either the Stock Exchange, Mumbai or the National Stock Exchange) as well as major unlisted public limited companies having sales exceeding Rs.10 million. In addition, an entity qualifies for inclusion in the database if the average sum of sales and total assets is more than or equal to Rs.200 million for the latest audited financial results and the entity is not listed.[1] There is detailed information on the financial performance of these companies culled out from their profit and loss accounts, balance sheets and stock price data. The database also contains background information, including ownership pattern, product profile, plant location and new investment projects for these companies.

The selection of the sample is guided by the availability of data. From the entire database, all the firms which maintained its identity and reported its annual accounts without any gaps for the entire sample period, *viz*., 1992 through 2002 have been selected. This has been done with a view to take into consideration all firms, whether listed or otherwise, since the inception of reforms in 1992 and in existence over the entire sample period. Screening for data consistency[2] on the basis of this criterion led to the selection of a sample of 1096 firms comprising public and private, belonging to both manufacturing and services sectors.[3]

A word is in order as regards the choice of the sample period. Until 1992, the corporate sector in India faced several constraints on its choices regarding sources of funds. Access to the equity market was regulated by the Controller of Capital Issues (CCI), an agency under the Government, which imposed stringent restrictions on corporate houses intending to raise funds through the equity route. Long-term debt was largely under the purview of state-owned development banks, which, either through direct lending or through refinancing arrangements, virtually monopolised the supply of debt finance to the corporate sector.

In the financial sector likewise, till the initiation of reforms in 1991, financial institutions had heavy restrictions on application of funds. In July 1991, for instance, commercial banks had to hold in cash reserves and government debt instruments as much as 63.5% of increases in deposits. In addition, they had to extend 40% of their credit to priority sectors such as agriculture, small-scale industries and housing with sub-targets for each at subsidized rates differentiated by purpose, size of loan and borrower (there were 50 such rates in 1989). Even the free portion of banks' resources was subject to "credit norms," which set inflexible limits to loans according to sector, purpose and security. The Government also

regulated the use of financial instruments as well as interest rates on loans and deposits; lending rates were fixed for both priority and non-priority sectors.

In 1992, as part of the sweeping set of reforms relating to the equity market, the CCI was abolished and corporate houses have been given the freedom to access capital markets and price their securities, subject to prudential regulations of the Securities and Exchange Board of India (SEBI), the regulator of stock markets. Furthermore, Indian firms in sound financial condition have been allowed to issue equity and convertible bonds abroad. Likewise, as regards raising resources domestically through debt capital, institutional reforms have been aimed at curtailing the monopoly in supply of long-term funds by development banks, with banks being also permitted to extend long-term financing.

In the financial sector, the administered interest rate structure of banks has been rationalised. The prescriptions of rates on all term deposits, including conditions of premature withdrawal and offering uniform rate, irrespective of the size of deposits, have been dispensed with. On the lending side, lending rates have been deregulated. Likewise, the Bank Rate (the rate at which the central bank refinances commercial banks), after being dormant for several decades, has been activated as a signalling rate and simultaneously, the statutory pre-emptions on bank deposits have been gradually lowered, providing them with greater freedom in credit allocation. The removal of these twin restrictions meant that a greater role of the price mechanism (interest rate) in the resource allocation process and allowing corporates to freely raise resources from domestic capital markets, enabling a greater role of the corporate governance mechanism in company affairs.

Table 1 gives the representation of the sample. In addition, it also provides the number of firms by governance type. About 10.2% of the companies in the sample are public and the remaining are private firms. Within this broad categorization, 74% of the public firms are in manufacturing and the remaining belongs to services. As regards private firms, nearly 89% are in manufacturing, with 11% being in services. Listed firms comprise around 63% of the private firms.

***Table 1.*** Break-Up of Sample Firms by Ownership and Industry Type, 1992–2002 (Numbers).

| Firm Type | Public | | Private | | Total | |
|---|---|---|---|---|---|---|
| | | Of Which Listed | | Of Which Listed | | Of Which Listed |
| Manufacturing | 83 | 36 | 884 | 557 | 967 | 593 |
| Services | 29 | 12 | 100 | 87 | 129 | 99 |
| Total | 112 | 48 | 994 | 644 | 1096 | 692 |

*Source:* Compiled from *Prowess* database.

In terms of the main governance features, the minimum paid up equity capital of the firm in order to be listed should not be less than Rs.100 million, whereas post-issue, the capitalization of the company should not be lower than Rs.250 million, irrespective of the type of ownership. In addition, the applicant needs to satisfy certain minimum criteria as laid down in the SEBI Act, 1992 and Companies Act, 1956.[4] In addition, the company needs to provide certain critical information regarding its distribution of share holding, details of pending litigation and grievance redressal mechanism, besides submitting its audited balance sheet of three preceding years prior to year of listing. In addition, shareholders have the right to select members on the boards of directors and pressure is exerted from institutional investors to management through annual meetings.

The basic features of the sample firms and their financing pattern over the period of study are summarized in Table 2.

Private firms, on an average, are larger than their public counterparts. Regarding the source of financing, it is observed that bank debt has been the predominant source of financing for public firms including quoted ones, whereas the situation obtaining has been markedly different for private firms, for whom reliance on bank financing was comparatively lower. This was more evident in the case of quoted private firms. However, private firms had a significant focus on working capital, although its overall short-term bank debt was more than a third lower as compared with public firms. On the uses side, it was clear that public firms tended to hold larger inventories *vis-à-vis* private ones: quoted private firms had the lowest inventory holding over this period.

***Table 2.*** External Financing Pattern by Governance Type: Aggregate Averages for 1992–2002 (Percent to Respective Total).

| | Of Which | | Of Which | |
|---|---|---|---|---|
| | Public | Quoted | Private | Quoted |
| Paid-up capital | 10.02 | 10.00 | 31.46 | 40.57 |
| Long-term debt | 8.09 | 8.11 | 5.22 | 1.87 |
| Short-term debt | 52.33 | 52.44 | 13.13 | 6.87 |
| Of which | | | | |
| Working capital | 10.61 | 10.50 | 24.42 | 21.03 |
| Other current liabilities | 9.35 | 9.34 | 23.86 | 29.66 |
| Trade credit | 9.60 | 9.62 | 1.92 | 0.00 |
| Memo | | | | |
| Bank debt | 60.43 | 60.55 | 18.35 | 8.75 |

*Source:* Authors' calculation.

## 5. EMPIRICAL MODEL

The main interest of the study concerns the impact of monetary policy shocks on the financing behaviour of firms and its dependence on corporate governance characteristics. Concerning the capital structure, the study focuses on four debt ratios:

(a) total debt to total assets (DEBT);
(b) bank debt to total assets (BKDEBT) as the main focus is on the special role of bank debt;
(c) long-term bank loans to total assets (LTBANK);
(d) short-term bank debt to total assets (STBANK), in order to distinguish between the differential maturity profile of short and long-term bank loans.

In addition to the above four ratios, following Petersen and Rajan (1997), the study considers the ratio of trade credit to total assets (TRADE). This variable has received a lot of attention in the literature for its substitutability with bank debt in general and, more specifically, in relation to monetary contraction.

Following previous research in this area (Oliner & Rudebusch, 1996), the estimated equation is assumed to have the following reduced form:

$$Y_{it} = \alpha X_{it} + \beta \mathrm{MPI}_t + \gamma \mathrm{MPI}_t \times \mathrm{GOV}_i + e_{it} \tag{6}$$

where $i = 1, 2, \ldots, 1096$ (number of firms) and $t = 1, 2, \ldots, 11$ (number of years). The panel is balanced, so that one is left with equal number of firms in each year.

In the aforesaid specification, $Y_{it}$ denotes one of the aforementioned debt ratios of firm $i$ in year $t$, $X_{it}$ are a vector of control variables, explaining the capital structure choices of firms; MPI is the monetary policy indicator at time $t$ and GOV is a dummy variable for the governance type of firm.

More specifically, there are two sets of dummy variables. The first dummy (PUBLIC), takes the value 1 for public firms and 0, otherwise. The second dummy variable, labeled QUOTED, is 1 if the firm (public or private) is quoted on the stock exchange and 0, otherwise. In other words, PUBLIC focuses on the ownership features, while QUOTED captures the governance characteristics of firms. Finally, $e_{it}$ denotes the error component.

The vector of variables $X$ is included to control for idiosynchratic effects on firm's capital structure. These are explanatory variables which are commonly employed in the literature to explain debt ratios, *viz*., interest expenses (INT), tangible assets (TAN), intangible assets (INTANG), firm size (SIZE), depreciation (DEPCN) and earnings before interest and taxes (EARN). All these variables are expressed as ratios to total assets, except SIZE, which is the natural logarithm of

total assets itself. The direct effect of monetary policy on the firm's capital structure is captured by the coefficient β, whereas the differential effects of monetary policy for particular governance type of firms are captured by γ. The interaction of the monetary policy variable with the two sets of dummy variables intends to ascertain whether monetary policy has differential effects on public versus private firms and quoted versus unquoted firms. Fully specified, Eq. (6) can be re-written as:

$$\begin{aligned} Y_{it} = {} & \alpha_1 \mathrm{INT}_{it} + \alpha_2 \,\mathrm{TAN}_{it} + \alpha_3 \,\mathrm{INTANG}_{it} + \alpha_4 \mathrm{SIZE}_{it} \\ & + \alpha_5 \mathrm{DEPCN}_{it} + \alpha_6 \mathrm{EARN}_{it} + \beta \,\mathrm{MPI}_t + \gamma_1 \mathrm{MPI}_t \\ & \times \mathrm{PUBLIC}_i + \gamma_2 \mathrm{MPI}_t \times \mathrm{QUOTED}_i + e_{it} \end{aligned} \tag{7}$$

The priors with respect to the expected signs of the coefficients of the control variables can be stated as follows:

INT is the ratio of interest payments to total assets. Firms that have high interest expenses provide a signal to the market of possible financial distress. Alternately, high interest expense could imply the presence of a large debt tax shield. Both interpretations lead to the expectation of a negative coefficient of interest expenses. Hence, the sign of the coefficient $\alpha_1$ is *a priori* expected to be negative.

TAN is the ratio of tangible assets to total assets. Tangibility of assets is measured as the sum of property, plant and equipments of the firm (Kroszner & Strahan, 2001). Firms with relatively few tangible assets are likely to be more opaque to the markets (i.e. have greater informational asymmetry problems) than firms with more tangible (hence collateralizable) assets. Firms with low proportion of tangible assets should, therefore, have more difficulty obtaining external finance. This would imply a positive sign on $\alpha_2$.

INTANG is the ratio of intangible assets to total assets. A high proportion of intangible assets denote lower collateral value and hence the coefficient $\alpha_3$ is expected to be negative. Intangible investments are also considered a proxy for high growth opportunities for the firm. High growth options should, according to agency theory, negatively influence the use of debt, and hence, would imply a negative sign for this coefficient.

SIZE is measured as the natural logarithm of total assets. Large firms tend to be well-diversified and better known to outside investors, so that they have fewer asymmetric information problems on the capital market and run lower business risks. Therefore, SIZE is expected to be positively related to the use of debt, i.e. the coefficient $\alpha_4$ would be positive.

DEPCN is the ratio of depreciation to total assets. A high depreciation implies the presence of a large non-debt tax shield, making the use of debt tax shields relatively redundant. This would suggest a negative sign on $\alpha_5$.

EARN is the ratio of earnings before tax to total assets. The "pecking order" theory of finance predicts that firms prefer internal finance over external finance, including debt. High earnings enable firms to finance their investments largely with retained earnings, so that substantial debt finance is not necessary. Hence, the coefficient $\alpha_6$ is expected to be negative.

The priors with respect to the monetary policy indicator and its governance interaction terms are as follows:

The traditional view on monetary transmission focuses on the interest rate channel. A monetary policy-induced rise in the short-term interest rate reduces both interest sensitive investment spending and the corporate demand for bank debt. However, the interest rate channel can have different implications for debt of differing maturity. It is probable that short-term debt will be reduced after a monetary policy-induced rise in short-term interest rate, but it is not so clear for long-term debt. The credit view of monetary transmission puts on stage the broad credit channel, comprising of the credit channel and the lending channel. These channels enhance the negative effects of monetary policy tightening. According to the lending channel theory, monetary policy tightening constrains the supply of bank credit, which exerts an additional negative effect for bank-dependent firms. This would suggest a negative coefficient for the monetary policy indicator, $\beta$, especially for short-term loans. For long-term loans, the expected sign on this coefficient is ambiguous.

The interaction term of the monetary policy indicator with the public firm dummy has been included to capture the possibility as to how public firms adjust their capital structure consequent upon a monetary policy shock. Public firms, being better known to outside investors *vis-à-vis* their private counterparts, are less prone to asymmetric information problems and consequently, have easier access to capital markets. The implication of this observation for the sign of the coefficient $\gamma_1$ is ambiguous. In accordance with the credit view, it is expected that public firms would be less severely impacted upon by restrictive monetary policy which would not necessarily curtail the supply of bank credit. This would imply the coefficient $\gamma_1$ to be non-negative. On the other hand, the relationship lending view contends that it is private firms and not public firms that benefit most from building and maintaining long-term banking relationships. As a result, during conditions of monetary tightening, public firms diminish their demand for bank loans and switch to other forms of finance. In such a case, the coefficient $\gamma_1$ is expected to be negative.

The reasoning for the interaction term of the monetary policy indicator with the quotation dummy proceeds along similar lines. Quoted firms are invariably subject to stringent disclosure requirements which are necessary for being listed on the stock exchange. One might therefore expect quoted firms to be less impacted

upon after a monetary tightening as compared with unquoted firms. Hence, one would expect coefficient $\gamma_2$ to be positive under the credit view hypothesis and to be negative under the relationship lending hypothesis.

Two issues deserve a mention at this juncture. The first is the choice of the monetary policy indicator. The second is the econometric estimation procedure employed in the analysis.

As regards the monetary policy indicator, the focus is on two variables. First, in line with the literature in this area, the Bank Rate (BKRT) is employed as an indicator of monetary policy (Reddy, 2000). We alternately employ the cash reserve ratio (CRR) as an alternative monetary policy indicator. It may be mentioned over the sample period, statutory pre-emption in the form of CRR have been significantly lowered from 15% at end-March 1992 to 5% at end-March 2002. We also consider the case where both policy shocks operate simultaneously. Evidence of such simultaneous change in the Bank Rate (price variable) and the CRR (quantity variable) is increasingly evidenced in recent years, wherein the central bank has been found to resort to these twin measures in conjunction (RBI, various years).

Secondly, the analysis focuses primarily on the performance of individual firms. As a result, the above model was tested using panel data. However, some of the explanatory variables are likely to be endogenous, notably INT. Illustratively, a high debt ratio would engender high interest payments. Therefore, standard panel data estimators would be inefficient and therefore, an instrumental variable panel data estimator would be more appropriate. As a consequence, the two-stage least squares fixed effects estimator has been employed (Baltagi, 1995). Accordingly, the explanatory variable INT has been instrumented by all other right-hand side variables.

## 6. RESULTS AND DISCUSSION

Table 3 presents the correlation coefficients for the relevant variables. Several salient features that can be gleaned from the table. First, the correlation between debt ratio and all its components are positive, except for trade debt, which is, however, quite small in absolute terms. Second, trade debt is negatively correlated with overall bank debt as well as its short-term component, whereas it is positively related with long-term bank debt. This might be indicative of substitution of trade debt with other (particularly, short-term) debt. Third, debt and all its components are negatively related to most of the control variables; exceptions being tangibles and interest payments. The substitutability aspect of trade debt is borne out by the positive relationship with all control variables, except interest payments. Likewise,

***Table 3.*** Correlation Matrix Among the Variables.

| Variable | DEBT | BANK | LTBANK | STBANK | TRADE |
|---|---|---|---|---|---|
| DEBT | 1.000 | | | | |
| BANK | 0.298 | 1.000 | | | |
| LTBANK | 0.152 | 0.778 | 1.000 | | |
| STBANK | 0.295 | 0.681 | 0.069 | 1.000 | |
| TRADE | −0.026 | −0.010 | 0.082 | −0.111 | 1.000 |
| INT | 0.479 | 0.681 | 0.706 | 0.259 | −0.037 |
| TAN | 0.205 | 0.089 | 0.049 | 0.085 | 0.008 |
| INTANG | −0.008 | −0.011 | −0.002 | −0.015 | 0.004 |
| SIZE | −0.120 | −0.161 | −0.042 | −0.207 | 0.056 |
| DEPCN | −0.013 | −0.040 | −0.008 | −0.054 | 0.005 |
| EARN | −0.041 | −0.057 | −0.016 | −0.072 | 0.009 |
| MPI | −0.042 | −0.037 | −0.027 | −0.026 | 0.036 |

*Note:* MPI is proxied by Bank Rate.

a monetary contraction (proxied by a rise in Bank Rate) induces firms to move out of total debt (including its sub-components) and possibly into trade debt.

The results of the estimation process of Eq. (7) are presented in Table 4. The variables are discussed under four broad heads: control variables, monetary policy indicator, ownership dummy and governance dummy.

As regards the control variables, most of these are highly significant at conventional levels and have the expected signs. Thus, higher debt leads to higher interest expenses. The coefficient on TAN has the expected positive sign. Exceptions to the rule are the coefficients on INTANG, which was found to be positive for DEBT, which would suggest limited growth opportunities for firms with high intangibles. Also, SIZE was found to have a positive relationship with most debt types, except for total debt, bank debt as well as short-term bank debt, where the influence was found to be opposite. This would suggest that small-size firms make more use of these debt types. In the case of depreciation, the expected negative coefficients were observed; earnings, however, did not seem to have any influence on firm's capital structure.[5]

The main focus is on the effects of monetary policy and hence, on the coefficients of MPI and its interaction with the governance characteristics dummy variables, PUBLIC and QUOTED. From the estimated coefficients of MPI, it can be concluded that the signs of the coefficients of MPI are significant and negative in most equations, except for trade debt, wherein there is an observed positive relationship. Hence, a significant decrease in firms' debt ratios occurs after monetary policy tightening, particularly for total debt, bank debt and short-term debt. In contrast, for trade debt, it seems that when short-term interest rate is raised, firms rearrange their debt profile towards trade debt.

***Table 4.*** 2SLS Within Sample Estimation for the Whole Sample.

| Variables | $DEBT_{it}$ | $BANK_{it}$ | $LTBANK_{it}$ | $STBANK_{it}$ | $TRADE_{it}$ |
|---|---|---|---|---|---|
| Control variables | | | | | |
| $INT_{it}$ | 1.333 (0.00) | 0.301 (0.00) | 0.294 (0.00) | 0.007 (0.21) | −0.036 (0.00) |
| $TAN_{it}$ | 0.705 (0.00) | 0.093 (0.00) | 0.004 (0.49) | 0.090 (0.00) | 0.010 (0.04) |
| $INTANG_{it}$ | 0.188 (0.05) | 0.0006 (0.97) | −0.003 (0.79) | 0.003 (0.82) | −0.002 (0.85) |
| $SIZE_{it}$ | −16.476 (0.00) | −0.358 (0.02) | 1.478 (0.00) | −1.836 (0.00) | 2.756 (0.00) |
| $DEPCN_{it}$ | −0.059 (0.01) | 0.004 (0.27) | 0.002 (0.44) | 0.002 (0.56) | 0.0002 (0.93) |
| $EARN_{it}$ | −0.003 (0.68) | −0.0008 (0.47) | 0.0004 (0.58) | −0.001 (0.24) | −0.0007 (0.34) |
| Monetary policy indicator | | | | | |
| $MPI_t$ | −2.753 (0.00) | −0.237 (0.00) | 0.066 (0.30) | −0.303 (0.00) | 0.400 (0.00) |
| Ownership dummy | | | | | |
| $MPI_t \times$ PUBLIC | −13.152 (0.00) | 0.883 (0.00) | 1.037 (0.00) | −0.155 (0.39) | −0.428 (0.00) |
| Governance dummy | | | | | |
| $MPI_t \times$ QUOTED | 2.668 (0.00) | 0.118 (0.29) | −0.149 (0.06) | 0.267 (0.01) | 0.136 (0.08) |
| Constant | 101.879 (0.00) | 11.674 (0.00) | −6.652 (0.00) | 18.327 (0.00) | −16.558 (0.00) |
| Diagnotics | | | | | |
| $R^2$ | 0.080 | 0.383 | 0.381 | 0.028 | 0.005 |
| No. of observations | 11555 | 11555 | 11555 | 11555 | 11555 |
| No. of firms | 1096 | 1096 | 1096 | 1096 | 1096 |

*Note:* *p*-Values in brackets. MPI is proxied by Bank Rate.

The positive coefficient on the interaction term MPI × PUBLIC in the equations for bank debt and long-term bank debt would indicate that the negative monetary policy impact is smaller for public firms than for private firms. As for total debt and trade debt, this finding could be interpreted as evidence in support of the relationship lending view.

Finally, the coefficients on the cross-term MPI × QUOTED is positive and significant in most equations, while it is negative and significant with respect to long-term loans. This would suggest that after a monetary contraction, listed firms adjust their debt levels away from long-term bank loans and more towards short-term debt, which implies that their overall capital structure is more geared towards bank debt (note that the sum of long-term and short-term bank debt equals total bank debt).

The analysis was subsequently repeated with an alternate variant of monetary policy, *viz*., cash reserve ratio (Table 5). The general picture which emerges with respect to this monetary policy indicator is that there is a significant decrease in firms' debt ratios occurs after monetary policy tightening, particularly for total debt, bank debt and short-term debt. Trade debt is consistently observed to have a positive relationship with MPI suggesting that a monetary contraction forces firms to rearrange their debt profile in favour of trade debt.

The same findings are obtained in case of the interaction terms as well. Thus, a monetary contraction has a positive effect on bank debt and long-term bank debt, indicating that the negative monetary policy impact is smaller for public firms than for private firms when these two debt forms are considered. The negative coefficient on the trade debt equation provides strong support for the relationship lending view. Likewise, a monetary contraction engenders a shift away from long-term bank debt and towards short-term bank debt, with an overall increase in bank debt and overall debt for listed firms. This is evidenced from the fact that the signs of the coefficients are materially unaltered with some alterations in their magnitudes in some instances.

Finally, in the case where both the CRR and the Bank Rate are considered in conjunction (Table 6), it is observed that the sign of the ownership dummy with respect to Bank Rate and the same with respect of the quantity indicator (CRR) and its interaction term with ownership are positive and significant at conventional levels. This would suggest that public firms increase their short-term bank debt after a monetary contraction. The intuition behind this result lies in the fact that a monetary tightening raises the cost of funds and limits the availability of long-term funds. With long-term funds at a premium, public firms perforce take recourse to relatively cheaper short-term bank borrowings in order to maintain credit lines (relationship lending).

***Table 5.*** 2SLS Within Sample Estimation for the Whole Sample.

| Variables | $DEBT_{it}$ | $BANK_{it}$ | $LTBANK_{it}$ | $STBANK_{it}$ | $TRADE_{it}$ |
|---|---|---|---|---|---|
| Control variables | | | | | |
| $INT_{it}$ | 1.332 (0.00) | 0.300 (0.00) | 0.294 (0.00) | 0.006 (0.29) | −0.035 (0.00) |
| $TAN_{it}$ | 0.694 (0.00) | 0.093 (0.00) | 0.006 (0.23) | 0.086 (0.00) | 0.013 (0.01) |
| $INTANG_{it}$ | 0.184 (0.06) | 0.001 (0.93) | −0.004 (0.75) | 0.005 (0.74) | −0.002 (0.86) |
| $SIZE_{it}$ | −18.035 (0.00) | −0.536 (0.09) | 1.629 (0.00) | −2.166 (0.00) | 3.164 (0.00) |
| $DEPCN_{it}$ | −0.057 (0.02) | 0.003 (0.36) | 0.002 (0.40) | 0.001 (0.73) | 0.0004 (0.87) |
| $EARN_{it}$ | −0.004 (0.59) | −0.0008 (0.49) | 0.0006 (0.48) | −0.001 (0.20) | −0.0007 (0.36) |
| Monetary policy indicator | | | | | |
| $MPI_t$ | −2.202 (0.00) | −0.158 (0.02) | 0.107 (0.03) | −0.265 (0.00) | 0.299 (0.00) |
| Ownership dummy | | | | | |
| $MPI_t \times PUBLIC_t$ | −9.386 (0.00) | 0.537 (0.00) | 0.840 (0.00) | −0.303 (0.02) | −0.292 (0.00) |
| Governance dummy | | | | | |
| $MPI_t \times QUOTED_t$ | 1.734 (0.00) | 0.016 (0.85) | −0.136 (0.02) | 0.152 (0.025) | 0.194 (0.00) |
| Constant | 108.749 (0.00) | 12.818 (0.00) | −7.959 (0.00) | 20.777 (0.00) | −18.515 (0.00) |
| Diagnostics | | | | | |
| $R^2$ | 0.102 | 0.410 | 0.384 | 0.035 | 0.005 |
| No. of observations | 11555 | 11555 | 11555 | 11555 | 11555 |
| No. of firms | 1096 | 1096 | 1096 | 1096 | 1096 |

*Note:* *p*-Values in brackets. MPI is proxied by cash reserve ratio (CRR).

***Table 6.*** 2SLS Within Sample Estimation for the Whole Sample.

| Variables | $DEBT_{it}$ | $BANK_{it}$ | $LTBANK_{it}$ | $STBANK_{it}$ | $TRADE_{it}$ |
|---|---|---|---|---|---|
| Control variables | | | | | |
| $INT_{it}$ | 1.328 (0.00) | 0.301 (0.00) | 0.294 (0.00) | 0.006 (0.28) | −0.035 (0.00) |
| $TAN_{it}$ | 0.687 (0.00) | 0.093 (0.00) | 0.006 (0.29) | 0.087 (0.00) | 0.014 (0.00) |
| $INTANG_{it}$ | 0.193 (0.05) | 0.0005 (0.98) | −0.004 (0.74) | 0.004 (0.78) | −0.002 (0.89) |
| $SIZE_{it}$ | −18.194 (0.00) | −0.521 (0.10) | 1.619 (0.00) | −2.139 (0.00) | 3.181 (0.00) |
| $DEPCN_{it}$ | −0.061 (0.01) | 0.004 (0.29) | 0.002 (0.39) | 0.002 (0.61) | 0.0003 (0.90) |
| $EARN_{it}$ | −0.004 (0.59) | −0.0008 (0.46) | 0.0006 (0.48) | −0.001 (0.18) | −0.0007 (0.36) |
| Monetary policy indicators | | | | | |
| $BKRT_t$ | −1.222 (0.24) | −0.262 (0.12) | −0.166 (0.16) | 0.156 (0.54) | 0.328 (0.00) |
| $CRR_t$ | −1.448 (0.06) | 0.009 (0.94) | 0.211 (0.02) | 0.117 (0.08) | 0.093 (0.28) |
| Ownership dummy | | | | | |
| $BKRT_t \times PUBLIC_t$ | −8.197 (0.00) | 0.959 (0.00) | 0.232 (0.37) | 0.342 (0.03) | −0.359 (0.16) |
| $CRR_t \times PUBLIC_t$ | −4.259 (0.01) | −0.065 (0.81) | 0.694 (0.00) | 0.252 (0.00) | −0.065 (0.73) |
| Governance dummy | | | | | |
| $BKRT_t \times QUOTED_t$ | 2.051 (0.13) | 0.329 (0.13) | 0.081 (0.59) | 0.201 (0.20) | −0.233 (0.19) |
| $CRR_t \times QUOTED_t$ | 0.423 (0.67) | −0.191 (0.23) | −0.188 (0.09) | 0.149 (0.98) | 0.343 (0.00) |
| Constant | 112.743 (0.00) | 12.672 (0.00) | −7.570 (0.00) | 1.979 (0.00) | −19.152 (0.00) |
| Diagnostics | | | | | |
| $R^2$ | 0.080 | 0.388 | 0.3777 | 0.034 | 0.0053 |
| No. of observations | 11555 | 11555 | 11555 | 11555 | 11555 |
| No. of firms | 1096 | 1096 | 1096 | 1096 | 1096 |

*Note:* *p*-Values in brackets.

We re-estimated the equations for the sub-samples. Since the control variables are unaltered in sign and significance, Table 7 reports only the estimated coefficients for MPI and the two-cross terms with the dummy variables, PUBLIC and QUOTED. The first two sub-samples comprise of the top 20% and the bottom 20% of the size distribution, respectively, where size is measured by SIZE. The general picture that emerges for the whole sample is confirmed in Table 7 for large firms, but not for small firms. In particular, it is observed that large public firms increase their short-term debt more than private firms in response to monetary tightening supporting the evidence of relationship lending. At the other end of the spectrum, small firms increase their overall debt, and in particular, bank debt, in response to a monetary contraction. This is all the more so for public firms for whom it is found that monetary tightening induces them to alter their debt composition from short-term loans and into long-term loans, increasing their overall debt in the process. Quoted public firms, on the other hand, lower their overall debt by reducing their overall bank debt as compared with unquoted firms.

The third and fourth sub-samples consist of the top 20 percentiles and the bottom 20 percentiles of the leverage distribution, where leverage is measured by DEBT. Once again, the results obtained for the whole sample is repeated for high- and low-leveraged firms (sub samples 3 & 4: Table 7). Two features of the result merit attention. First, it is observed that quoted firms, irrespective of whether they are high or low leveraged, exhibit limited response to a monetary tightening. This is clearly evidenced from the insignificance of the coefficients on the interaction term of the QUOTED dummy with MPI. Second, it is observed that low-leveraged firms increase their debt in response to a monetary contraction. This would suggest that given their low debt-equity profile, firms within this category attempt to maintain relationship lending by increasing their overall debt, which is effected by raising bank borrowing, and in particular, short-term borrowings.

A final issue of interest is whether manufacturing firms exhibit a higher response to a monetary policy shock as compared with those in services. Given that the sample comprises of firms encompassing both manufacturing and services, where the former with its greater preponderance on bank borrowings are perceived to be relatively more responsive to a monetary policy shock *vis-à-vis* the latter, it is of interest therefore to understand whether firms in one sector display differential response to monetary policy shock *vis-à-vis* the latter. Towards this end, a dummy variable (MFG) was constructed, which was 1 if the firm belonged to the manufacturing sector, and 0 otherwise. This variable was interacted with the monetary policy variable to ascertain the differential impact of monetary policy. The results of the analysis, presented in Table 8 shows that, *vis-à-vis* services, manufacturing firms lower their short-term bank debt by almost the same magnitude as they increase their long-term debt, and consequently raise

***Table 7.*** 2SLS Within Sample Estimation for Four Sub-Samples-Select Coefficients.

| Variables | $DEBT_{it}$ | $BANK_{it}$ | $LTBANK_{it}$ | $STBANK_{it}$ | $TRADE_{it}$ |
|---|---|---|---|---|---|
| Sub sample 1: Large firms (top 20 percentile with respect to SIZE) | | | | | |
| $MPI_t$ | −7.515 (0.00) | −0.346 (0.16) | −0.083 (0.62) | −0.263 (0.32) | 0.474 (0.00) |
| $MPI_t \times PUBLIC_t$ | −108.079 (0.00) | 13.344 (0.00) | 9.020 (0.00) | 4.324 (0.00) | 0.494 (0.54) |
| $MPI_t \times QUOTED_t$ | 1.576 (0.84) | 0.124 (0.91) | 0.320 (0.66) | −0.196 (0.86) | 0.200 (0.80) |
| $R^2$ | 0.011 | 0.275 | 0.389 | 0.050 | 0.005 |
| No. of firms | 423 | 423 | 423 | 423 | 423 |
| Sub sample 2: Small firms (bottom 20 percentile with respect to SIZE) | | | | | |
| $MPI_t$ | 1.486 (0.00) | 0.345 (0.09) | 0.483 (0.00) | −0.138 (0.44) | 0.427 (0.03) |
| $MPI_t \times PUBLIC_t$ | 0.417 (0.08) | −0.356 (0.02) | 0.008 (0.93) | −0.347 (0.00) | −0.395 (0.00) |
| $MPI_t \times QUOTED_t$ | −0.805 (0.00) | −0.229 (0.23) | −0.419 (0.00) | 0.191 (0.25) | 0.223 (0.21) |
| $R^2$ | 0.388 | 0.016 | 0.004 | 0.039 | 0.004 |
| No. of firms | 262 | 262 | 262 | 262 | 262 |
| Sub sample 3: High-leveraged firms (top 20 percentile with respect to DEBT) | | | | | |
| $MPI_t$ | −14.233 (0.00) | −1.858 (0.00) | 0.117 (0.79) | −1.975 (0.00) | −0.023 (0.94) |
| $MPI_t \times PUBLIC_t$ | −57.636 (0.00) | 5.364 (0.00) | 4.938 (0.00) | 0.426 (0.66) | 0.045 (0.93) |
| $MPI_t \times QUOTED_t$ | −1.561 (0.79) | 0.755 (0.38) | 0.576 (0.38) | 0.180 (0.83) | 1.643 (0.00) |
| $R^2$ | 0.019 | 0.268 | 0.245 | 0.063 | 0.005 |
| No. of firms | 457 | 457 | 457 | 457 | 457 |
| Sub sample 4: Low-leveraged firms (bottom 20 percentile with respect to DEBT) | | | | | |
| $MPI_t$ | 0.429 (0.00) | 0.273 (0.00) | 0.032 (0.19) | 0.241 (0.00) | 1.003 (0.00) |
| $MPI_t \times PUBLIC_t$ | −0.096 (0.49) | −0.130 (0.25) | 0.142 (0.00) | −0.272 (0.01) | −0.297 (0.54) |
| $MPI_t \times QUOTED_t$ | 0.163 (0.06) | −0.069 (0.34) | −0.026 (0.41) | −0.042 (0.52) | 0.121 (0.69) |
| $R^2$ | 0.168 | 0.018 | 0.0011 | 0.026 | 0.008 |
| No. of firms | 486 | 486 | 486 | 486 | 486 |

*Note:* *p*-Values in brackets. MPI is proxied by Bank Rate.

***Table 8.*** 2SLS Within Sample Estimation for the Whole Sample.

| Variables | $DEBT_{it}$ | $BANK_{it}$ | $LTBANK_{it}$ | $STBANK_{it}$ | $TRADE_{it}$ |
|---|---|---|---|---|---|
| Control variables | | | | | |
| $INT_{it}$ | 1.330 (0.00) | 0.300 (0.00) | 0.293 (0.00) | 0.007 (0.24) | −0.035 (0.00) |
| $TAN_{it}$ | 0.703 (0.00) | 0.093 (0.00) | 0.008 (0.13) | 0.085 (0.00) | 0.013 (0.01) |
| $INTANG_{it}$ | 0.192 (0.05) | 0.002 (0.93) | −0.003 (0.77) | 0.005 (0.75) | −0.003 (0.82) |
| $SIZE_{it}$ | −17.995 (0.00) | −0.486 (0.13) | 1.614 (0.00) | −2.099 (0.000) | 3.200 (0.000) |
| $DEPCN_{it}$ | −0.060 (0.00) | 0.004 (0.35) | 0.002 (0.35) | 0.001 (0.77) | 0.0004 (0.86) |
| $EARN_{it}$ | −0.003 (0.63) | −0.0008 (0.48) | 0.0005 (0.57) | −0.001 (0.23) | −0.0008 (0.34) |
| Monetary policy indicator | | | | | |
| $MPI_t$ | −5.083 (0.00) | −0.161(0.37) | −0.243 (0.05) | 0.083 (0.62) | 0.536 (0.00) |
| Ownership dummy | | | | | |
| $MPI_t \times PUBLIC_t$ | −13.087 (0.00) | 0.734 (0.00) | 1.165 (0.00) | −0.432 (0.02) | −0.445 (0.00) |
| Governance dummy | | | | | |
| $MPI_t \times QUOTED_t$ | 2.177 (0.00) | 0.028 (0.81) | −0.209 (0.01) | 0.237 (0.03) | 0.238 (0.00) |
| Industry dummy | | | | | |
| $MPI_t \times MFG_t$ | 2.445 (0.03) | −0.048 (0.79) | 0.445 (0.00) | −0.493 (0.00) | −0.089 (0.00) |
| Constant | 112.234 (0.00) | 12.584 (0.00) | −8.100 (0.000) | 20.684 (0.00) | −19.666 (0.00) |
| $R^2$ | 0.084 | 0.404 | 0.353 | 0.024 | 0.005 |
| No. of observations | 11555 | 11555 | 11555 | 11555 | 11555 |
| Diagnostics | | | | | |
| No. of firms | 1096 | 1096 | 1096 | 1096 | 1096 |

*Note:* *p*-Values in brackets. MPI is proxied by Bank Rate.

their overall debt in the process. This would suggest that manufacturing firms exhibit relationship lending as compared with those in services.

## 7. POLICY IMPLICATIONS AND CONCLUDING REMARKS

The paper addresses the response of the financing behaviour of firms to changes in monetary policy employing firm-level data on Indian firms in manufacturing and services. The primary focus of the paper is on the differential responses of public versus private firms, quoted versus non-quoted firms and manufacturing versus services firms. The sample comprises of these types of firms for the period 1992–2002.

The main findings of the study can be stated as follows:

First, a significant decrease in firms' debt ratios occurs after a monetary tightening. This is particularly the case for total debt, bank debt and short-term debt. In contrast, for trade debt, there was an observed increase in the debt ratio. Therefore, it seems that when short-term interest rates are raised, firms reshuffle their debt maturity away from short-term debt and towards trade debt.

Second, a split of the sample into smaller and larger firms indicates that the negative monetary policy effect on short-term bank debt is significantly higher for public firms as compared with private firms, which can be interpreted as evidence in support of the relationship lending view.

Third, another split of the sample into low and high-leveraged firms suggests that both categories of firms exhibit relationship lending, although the observed effect is stronger for low-leveraged firms. Further the results indicate that quotation does not significant impact the debt profile of firms in most firms.

Finally, manufacturing firms are found to be relatively more responsive to monetary shock than services firms. In effect, manufacturing firms lower their short-term bank borrowings in favour of long-term borrowings in response to a monetary tightening *vis-à-vis* services firms.

These findings have important implications for policy. At the micro-theoretic level, this implies that the real effects of a monetary shock differs markedly among public versus private firms, quoted versus unquoted firms as well as manufacturing versus services companies. This indicates that policy authorities need to take into account not only the differential ownership characteristics and the corporate governance features of the firm, but also the nature of economic activity that the firm pursues. Since manufacturing firms tend to be more interest sensitive than those in services, a monetary policy shock impinges much more on the former *vis-à-vis* the latter. From the macro standpoint, economists have long debated the

relative merits and de-merits of bank-based versus market-based systems (Van Damme, 1994). While the comparative advantages of one *vis-à-vis* the other are as yet unresolved (Levine, 2002), recent research has observed that industries that are heavy users of external capital grow faster in countries with higher overall levels of financial development. In other words, merely whether a system is bank-based or market-based does not bear any relationship with the efficiency of capital allocation. This would suggest that as countries achieve higher levels of financial development and rely more on external finance, it is important that policy makers remove the constraints on intermediation rather than tilt the playing field in favour of banks or markets.

## NOTES

1. $US1∼Rs.43.85.
2. Firms that underwent merger/acquisition during this period were dropped from the sample.
3. Banking firms, given their high degree of leveraging, were excluded from the sample.
4. Companies Act, 1956 provides a set of rules and regulations for registration of companies, irrespective of whether they are public limited or private limited companies.
5. We considered an alternate case wherein the natural logarithm of sales (instead of SIZE) was employed as the control variable (Chibber & Majumdar, 1999). The results were materially unaltered in that case. We also introduced a control for AGE, where AGE was defined as the natural logarithm of the number of years since the incorporation of the firm. Majumdar (1997) had observed that in the Indian context, SIZE and AGE are key organizational determinants of firm performance. In the regression analysis, the variable AGE consistently turned out to be insignificant at conventional levels, and hence, was not included in subsequent regressions.

## ACKNOWLEDGMENTS

The authors would like to thank, without implicating, an anonymous referee and Anil Makhija for their comments and insights on an earlier draft of the paper. The opinion expressed and the approach followed in the paper are entirely the authors' personal views and do not necessarily reflect those of the institution to which they belong.

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# CORPORATE GOVERNANCE AND OWNERSHIP STRUCTURE IN THE MALAYSIAN CORPORATE SECTOR

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## ABSTRACT

*This study outlines some major findings of the impact of ownership concentration on corporate performance, investment and financing decisions in the Malaysian corporate sector. Earlier studies on corporate governance linked very concentrated ownership structure to weak corporate governance, thus leading firms to make poor investment and financing decisions. However, a firm that strives towards maximising shareholder's wealth would select its investment and financing strategy with care. Thus concentrated ownership has also been found to lead to better corporate performance, and that composition of ownership is an important element to spur better corporate performance.*

## 1. INTRODUCTION

Corporate governance has received a lot of attention in the wake of the Asian financial crisis in 1997. Many contend that weakened corporate governance in East Asian countries led to poor investment decisions, excessive diversification of large business groups and excessive exposure to debt, especially unhedged short-term foreign debt and risky financing practices. Weak corporate governance in these countries owe much to their very concentrated ownership structure,

**Corporate Governance**
**Advances in Financial Economics, Volume 9, 355–385**

**ISSN: 1569-3732/doi:10.1016/S1569-3732(04)09014-0**

excessive government interventions, under-developed capital markets, and weak legal and regulatory framework for investor protection.[1]

In Malaysia, reforms in corporate governance were a focus of government responses to the crisis. The recommendations of the high-level Finance Committee on Good Governance (FCGG) constituted the main agenda for reforms in corporate governance covering the entire corporate sector, whether publicly listed or privately owned. Among the recommendations are to develop the best domestic institutions by building the capabilities of domestic institutions and increasing the incentives for domestic institutions to drive performance; and to maintain stability of the financial system through an efficient infrastructure, more resilient institutions as well as strong prudential regulations and supervision. In addition to that, there were also a number of reforms instituted by Securities Commission and the Kuala Lumpur Stock Exchange (KLSE) for better disclosure and greater transparency of information.

This study outlines some major findings on ownership concentration, and investment and financing decisions which may raise some questions with respect to corporate governance in Malaysia.

## 2. LITERATURE REVIEW

Berle and Means (1932) conducted the pioneering study on ownership and control. In their study they highlighted the potential conflict of interest between managers and diffuse shareholders when managers do not have any ownership interest in the firm. They recognised that more concentrated ownership will establish a stronger link between managerial behaviour and owner interests, thus leading to higher profit rates. When salaried managers are running companies with dispersed ownership, they may not act in the best interests of shareholders. A sound corporate governance system should provide effective protection for shareholders and creditors such that they can assure themselves of getting a good return on their investments.[2] It should consist of a set of rules that define the relationships between shareholders, managers, creditors, government and other stakeholders (i.e. their respective rights and responsibilities) and a set of mechanisms that help, directly or indirectly, to enforce these rules.

Ownership structure is the most important factor in shaping the corporate governance system of any country. In particular, it determines the nature of the agency problem, that is, whether the dominant conflict is between managers and shareholders, or between controlling and minority shareholders.

The degree of ownership concentration determines the distribution of power between managers and shareholders in a company. When ownership is dispersed,

shareholder control tends to be weak because of inadequate shareholder monitoring. The inadequacy of shareholder monitoring is due to the so-called free-rider problem, that is, a small shareholder would bear all the monitoring costs, but only share a small proportion of the benefit; therefore, he or she would not be interested in monitoring. If all small shareholders behave in a similar way, no monitoring of managerial efforts would take place. When ownership is concentrated, large shareholders could play an important role in monitoring management.

However, a fundamental problem for corporate governance under concentrated ownership is how to protect minority shareholders from expropriation by controlling shareholders. Controlling shareholders may act in their own interests at the expense of minority shareholders and other investors. Morck, Shleifer and Vishny (1988) found an inverted "U-shaped" relationship between the degree of ownership concentration and corporate profitability. A possible interpretation of this relationship is that as ownership concentration rises to a certain level, its costs may outweigh its benefits, leading to a fall in profitability.

Using Tobin's $Q$[3] ratio in their study, McConnell and Servaes (1990) found a curvilinear relationship between the $Q$ ratio and the degree of insider ownership, which suggests a positive effect of institutional ownership on corporate performance. However, in an earlier study, Holderness et al. (1988) found no evidence to suggest that corporate performance can be explained by the degree of ownership concentration.

Another key aspect of corporate ownership structure is its composition, namely, who are the shareholders, and more importantly, who are the controlling or significant shareholders. A shareholder can be an individual, a family or family group, a holding company, a bank, an institutional investor, or a non-financial corporation. A family or family group as a significant shareholder is more likely to be interested in control benefits as well as profits. On the other hand, an institutional investor as a significant shareholder is more likely to be interested only in profits. Fama and Jensen (1983) demonstrated various possibilities that managers who own enough stock to dominate the board of directors could expropriate corporate wealth while Stulz (1988) explained how owning large blocks of shares makes it easier for managers to be entrenched. Thus, greater stock ownership by managers increases the power of internal constituency, but decreases the power of the external constituency in influencing corporate performance.

Several studies had been conducted on the effect of ownership structure and corporate performance in Malaysia. In a similar study in nine East Asian Countries including Malaysia, Claessens, Djankov, Fan and Lang (1998), found a positive and significant relationship between ownership concentration and corporate performance, while Yee (1998) found the effect of ownership concentration to be insignificant.

Earlier studies on corporate governance found that very concentrated ownership structure leads to weak corporate governance. While some studies suggested that concentrated ownership would lead to better corporate performance, other studies also indicate that the composition of ownership is an important element to spurring better corporate performance. Corporate performance depends very much on the investment and financing strategies of a firm. A firm that strives towards maximising shareholder wealth would select its investment and financing strategy with care. By outlining some major findings on the degree of ownership concentration in publicly listed companies, as well as corporate performance, investment and financing patterns, this paper intends to provide some insight into the relationship between concentrated ownership and corporate governance in Malaysia.

## 3. RESEARCH FINDINGS

### *3.1. Corporate Ownership and Control*

This study measures ownership concentration in terms of shareholdings by the top five shareholders. Ownership and control of corporations in Malaysia are highly concentrated, a feature that is believed to have impaired the effectiveness of existing regulatory mechanisms in the corporate sector. Table 1 shows the total shareholdings of the five largest shareholders in the KLSE (as at December 1998). The top five largest shareholders held about 58.8% of total equity in the corporate sector. In an extreme case, the five largest shareholders accounted for 92.3% of the outstanding shares.[4] About half of the publicly listed companies had five shareholders owning about 60.4% of the outstanding shares. The largest five shareholders accounted for more than half the voting shares or stocks in an average company. It implies that minority shareholders are practically powerless to prevent

***Table 1.*** Total Shareholdings of Five Largest Shareholders in KLSE Companies (Percentages, as at December 1998).

| Statistics | 1st | 2nd | 3rd | 4th | 5th | Percent of Total Shares Owned by Five Largest Shareholders |
|---|---|---|---|---|---|---|
| Mean | 30.30 | 12.47 | 7.32 | 5.01 | 3.74 | 58.84 |
| Minimum | 2.35 | 0.00 | 0.00 | 0.00 | 0.00 | 7.99 |
| Maximum | 79.29 | 37.81 | 23.81 | 16.94 | 14.72 | 92.28 |
| Median | 27.80 | 11.51 | 6.94 | 4.84 | 3.65 | 60.43 |
| Std. Dev. | 15.62 | 6.42 | 3.81 | 2.59 | 2.01 | 16.53 |

*Source:* Calculated using data from KLSE.

large shareholders from implementing their plans for the company. The largest shareholder held, on average, about 30.3% of the shares of an average company. It further suggests that because the Malaysian corporate sector is dominated by large shareholders, protection of minority shareholders may be a problem.

### *3.2. Ownership Concentration at Critical Levels of Control*

The KLSE listing rules requires at least 25% of outstanding shares of a company to be issued to the public. An interesting question is whether in reality the publicly listed companies in Malaysia are truly public or barely meet this listing requirement. Table 2 provides an analysis of the number of companies in which the top five shareholders owned more than 50% (signifying operating control), 66% (signifying strategic control), or 80% (only nominally publicly listed). Analysis of shareholdings of public listed companies is based on board categories – namely, main board companies and second board companies.

Table 2 shows that ownership of the publicly listed corporate sector is highly concentrated in the hands of a few shareholders. Some 522 companies or 71.4% of all companies were under majority ownership and control by their five largest shareholders. Second board companies had even more concentrated ownership than main board companies. About 76.1% of second board companies were under majority ownership by their largest five shareholders.

The number of KLSE companies that had two-thirds ownership level by the top five shareholders was much less. In 272 companies, or 37.2% of the total, the largest five shareholders owned more than two-thirds of the outstanding shares. The proportion is about the same for main board and second board companies.

***Table 2.*** Ownership Concentration at Critical Levels of Shareholder Control for Publicly Listed Companies in the KLSE, 1997.

| Board | No. of Companies | Operating Control (No. of Shareholders Controlling More than 50%) | | Strategic Control (No. of Shareholders Controlling More than 66.7%) | | Nominally Public (No. of Shareholders Controlling More than 80%) | |
|---|---|---|---|---|---|---|---|
| | | No. | Percent | No. | Percent | No. | Percent |
| Main | 512 | 356 | 69.5 | 189 | 36.9 | 49 | 9.6 |
| Second | 218 | 166 | 76.1 | 83 | 38.0 | 13 | 6.0 |
| Total | 731 | 522 | 71.4 | 272 | 37.2 | 62 | 8.5 |

*Source:* Calculated using data from KLSE Annual Handbook.

Finally, in 62 companies, or 8.5% of the total, the largest five shareholders owned more than 80% of the outstanding shares. The latter case points out the importance of the shareholder spread ruling by the KLSE requiring a shareholder spread of a minimum of 25% of outstanding shares in public hands. At this time, companies still have very concentrated ownership since the shareholder spread ruling only affects companies who have sought to be listed on the KLSE after February 1998.

### *3.3. Composition of Corporate Ownership*

Another important issue concerning corporate ownership is the composition of the controlling shareholders. Who are the top five shareholders? A profile of the category or type of large shareholders in Malaysia's publicly listed sector is shown in Table 3.[5] Based on the total market capitalisation of companies with ownership data as, it classifies the top five shareholders category companies as nominees, government, foreign, individual, non-financial companies and finance companies. Nominee shareholders are clearly the largest in terms of market capitalisation-weighted average ownership of both financial and non-financial, owning about 47.3% of all public listed companies on the KLSE in 1998. However, with amendments to the Securities Act 1983 requiring identification of beneficial owners, there could be a reduction in the practice of using nominee accounts in the future. On an industry sector basis, nominee companies owned an even higher proportion of capitalisation in certain sectors. Nominees held 65.2% of the construction sector, 57.2% of the hotel sector, 48% of the industrial products sector and 45.2% of the property sectors. Construction sector involves large government projects and the award of these contracts may be highly controversial, thus this could be part of the reason behind high concentration of nominee shareholders in the construction sector compared to other sectors.

Non-financial companies are the second largest shareholders in terms of average market capitalisation-weighted ownership, with 30% of total shareholdings. Non-financial companies are the largest shareholders in the plantations (39.8%), hotels (33.8%), consumer products (33.8%) and properties (27.5%) sectors. Government was the third largest shareholder type in 1998, holding about 16.8% of shares of the corporate sector in terms of market value. Government was the largest shareholder in the mining sector with 57.2% of outstanding shares in terms of market capitalisation. It was prominent in the plantation (18.7%), properties (15.7%) and industrial products (13.8%) sectors. Individual shareholders were the fourth largest group, with an 11.4% ownership share. Individual shareholders were prominent in the consumer product sector, holding 17.8% of shares of

***Table 3.*** Top Five Shareholdings of Publicly-listed Companies by Shareholder Types and by Industry Sector, 1997.

| Industry Sector | Total Market Capitalisation of Companies with Ownership Data (RM Million) | Percentage Share by Type of Largest Shareholders | | | | | |
|---|---|---|---|---|---|---|---|
| | | Nominees (%) | Gov't (%) | Foreign (%) | Individual (%) | Non-Financial Companies (%) | Finance Companies (%) |
| A. Financial companies | | | | | | | |
| Banks and other financial institutions | 16,201 | 47.98 | 15.56 | 2.26 | 2.99 | 14.60 | 16.61 |
| B. Non-financial companies | | | | | | | |
| Construction | 6,789 | 65.23 | 7.23 | 0.00 | 5.56 | 14.01 | 7.97 |
| Consumer products | 9,636 | 29.06 | 6.41 | 5.36 | 17.80 | 33.42 | 7.95 |
| Industrial products | 16,656 | 48.00 | 13.75 | 4.90 | 5.74 | 24.07 | 3.54 |
| Hotels | 1,211 | 57.15 | 5.56 | 0.00 | 0.02 | 33.75 | 3.51 |
| Mining | 1,010 | 43.49 | 52.27 | 0.00 | 0.04 | 3.18 | 1.02 |
| Plantation | 6,227 | 30.51 | 18.73 | 0.11 | 1.73 | 39.81 | 9.11 |
| Properties | 10,323 | 45.65 | 15.65 | 0.13 | 2.82 | 27.48 | 8.27 |
| Total | 68,053 | | | | | | |
| Market capitalisation-weighted average ownership of non-financial companies | | 47.27 | 16.84 | 5.01 | 11.35 | 29.27 | 7.38 |

*Source:* The Kuala Lumpur Stock Exchange Annual Handbook.

consumer product companies. Their other large holdings were in the industrial products (5.7%) and construction (5.6%) sectors.

Financial companies owned about 7.4% of publicly listed companies. They were prominent shareholders in the plantations (9.1%), properties (8.3%), construction (8.0%) and consumer products (7.9%) sectors. Foreign shareholders do not appear as large shareholders in any sector except in consumer products (5.4%) and industrial products (4.9%). However, this result could be due to the reluctance of foreign shareholders to figure among the top five shareholders of a publicly listed company. Foreigners are more likely to own more than what the table indicates.

### *3.4. Growth and Financial Performance of the Corporate Sector*[6]

#### *3.4.1. Performance of All Companies*

The analysis of corporate performance in this section used financial data from the Kuala Lumpur Stock Exchange over the period from 1989 to July 1998. The financial indicators are net sales, net income, fixed assets, total assets, total liabilities, shareholders' equity, and retained earnings.

On average, all these indicators showed double-digit growth during the period 1989 through 1997. However, most financial indicators indicated negative growth between 1997 and 1998, except for shareholders' equity and retained earnings. Net income for non-financial companies was reduced by 98%, while total assets were reduced by almost 50%. Between 1989 and 1990, non-financial companies were profitable, registering 51% growth of net income.

Even with the crisis, the non-financial corporate sector performed well in terms of growth of revenue, earnings and assets during the period 1989 through 1998. In that period, revenue and investment in corporate assets grew by 14 and 17.5% annually, respectively. Capital grew annually by 14.5%, but liabilities increased at a higher annual rate of 21.9%. The corporate sector has been investing at a slightly higher rate than revenue growth, and has been heavily financing these investments with debt. Return on equity increased from 1989 levels of 9.4% to its peak in 1994 of 12.2%. Thereafter, ROE declined to only 7.6% in 1997 and became negative at −3.4% in 1998. Similar trends were evident in the return to assets ratio, indicating diminishing efficiency in use of investments by the Malaysian non-financial corporate sector in the years preceding the Asian crisis. There was a significant increase in the leverage ratio of the corporate sector. From a level of 43% of equity, debt increased to 70% by 1996 and then to 112% in 1998. Debt-to-equity ratio more than doubled in the three-year period 1995–1998. The positive response of the stock market to corporate sector performance is evident in the price-to-earnings ratios. In 1989, the average P-E ratio was 27.6 but by

***Table 4.*** Aggregate Growth and Financial Performance of the Corporate Sector Non-financial Companies, 1989–July 1998.

| | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | Compound Growth Rate 1989–1998, % |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Financial indicators (billion ringgit) | | | | | | | | | | | |
| Net sales | 51.31 | 69.85 | 91.09 | 109.51 | 137.16 | 154.74 | 197.86 | 249.66 | 301.52 | 166.63 | 13.98 |
| Net income | 6.04 | 9.11 | 12.31 | 15.65 | 19.85 | 22.67 | 27.97 | 34.57 | 33.42 | 0.58 | −22.92 |
| Fixed assets | 33.79 | 45.56 | 54.80 | 80.52 | 97.78 | 122.38 | 153.90 | 177.25 | 223.31 | 145.66 | 17.63 |
| Total assets | 78.68 | 111.95 | 140.21 | 189.33 | 314.78 | 269.09 | 350.69 | 490.99 | 658.86 | 334.51 | 17.45 |
| Total liabilities | 33.34 | 45.85 | 61.12 | 80.66 | 101.59 | 139.38 | 209.94 | 261.78 | 376.44 | 197.71 | 21.87 |
| Shareholders' equity | 22.72 | 31.14 | 35.77 | 44.46 | 51.09 | 59.10 | 69.70 | 55.60 | 64.59 | 76.69 | 14.47 |
| Retained earnings | 17.86 | 28.50 | 35.84 | 54.61 | 67.50 | 87.42 | 113.03 | 78.43 | 102.15 | 131.38 | 24.82 |
| Financial performance ratios | | | | | | | | | | | |
| Return on equity (percent) | 9.39 | 10.06 | 11.80 | 11.19 | 11.54 | 12.18 | 11.93 | 11.99 | 7.57 | −3.38 | 9.43 |
| Return on assets (percent) | 4.59 | 5.10 | 5.64 | 5.56 | 5.67 | 5.63 | 5.22 | 4.71 | 2.92 | −1.23 | 4.38 |
| Earnings per share (RM) | 0.13 | 0.14 | 0.17 | 0.18 | 0.20 | 0.22 | 0.23 | 0.25 | 0.18 | −0.07 | 0.16 |
| Price earnings ratio | 27.60 | 21.39 | 18.59 | 23.25 | 33.04 | 29.55 | 23.92 | 25.60 | 24.02 | −30.97 | 19.60 |
| Debt to equity ratio | 0.43 | 0.40 | 0.45 | 0.45 | 0.42 | 0.46 | 0.49 | 0.71 | 0.88 | 1.12 | 0.58 |
| Number of non-financial companies | 234.00 | 259.00 | 294.00 | 332.00 | 352.00 | 413.00 | 462.00 | 520.00 | | | |

*Source:* Calculated using data from KLSE.

1993, investors had begun to value the earnings of publicly listed companies by a multiple of 33. During 1997, the P-E multiple went down to 24 times, and became negative when the corporate sector suffered losses in 1998.

As a result of the crisis, financial performance ratios declined abruptly from 1997 to 1998. Many performance ratios were already declining even before 1997. For example, return on assets had declined since 1992, indicating declining financial productivity in investments. Earnings per share (EPS) were highest in 1995 at RM0.25 rising from RM0.13 in 1989. Non-financial companies had their first negative EPS of −RM0.07 during the first half of 1998, a direct effect of the financial crisis of 1997–1998 (Table 4).

*3.4.2. Corporate Sector by Firm Size*

Financial Performance data for the corporate sector categorised by firm size is shown in Table 5.[7]

The large-sized firms accounted for about 33.1% of the companies selected for this study. Sales of large-sized firms grew at an average rate of 16.3% per year, higher than medium- and small-sized firms. On average, the medium-sized sector outperformed the large- and small-sized sector in terms of net income and reserves. This is further reflected by the 22.7% average growth of the medium-sized sector's net profit margins.

The large-sized firms showed higher return on equity (ROE), as compared to the medium-and small-sized sector, averaging 11.17% for the period 1989 to 1998. Although the medium-sized sector had a stronger profit position, it was not able to outperform the large-sized sector in terms of ROE due to its lower share of shareholders' equity compared to the large-sized sector.

The Asian Financial Crisis of 1997–1998 affected the large firms severely. This effect can be seen in the financial indicators and ratios of 1998, where net income showed a loss of RM5,489 million, ROE had a negative value of −6.4%, Return on Assets (ROA) had a negative value of −1.3%, and net profit margin also had a negative value of −4.5%. It is important to note here that items reported in 1997 were only officially published in 1998.

*3.4.3. Corporate Sector by Corporate Control Structure*

Information collected for this study enables classification of the selected public listed companies according to corporate control structure as shown in Table 6. It is expected that companies belonging to conglomerate groups tend to enjoy economies of scale and economies of scope. It appears that net sales for the conglomerate were greater compared to independent companies.

Although companies belonging to a conglomerate enjoy certain benefits, it appears that in times of economic downturn, they are adversely affected more

***Table 5.*** Growth and Financial Performance of Selected Public Listed Companies by Firm Size, 1989–1998.

| | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | Compound Growth Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Large-sized companies (RM million) | | | | | | | | | | | |
| Net sales | 31,377 | 35,431 | 40,585 | 46,742 | 53,344 | 63,007 | 80,636 | 99,928 | 116,544 | 121,871 | 16.27% |
| Net income | 2,455 | 3,339 | 4,780 | 4,403 | 5,390 | 7,243 | 8,516 | 9,694 | 9,584 | −5,489 | −9.35% |
| Fixed assets | 17,322 | 19,667 | 22,904 | 26,078 | 32,009 | 37,859 | 49,869 | 49,005 | 72,104 | 86,881 | 19.62% |
| Total assets | 61,498 | 86,381 | 97,186 | 115,083 | 113,101 | 272,086 | 226,076 | 313,295 | 411,761 | 411,736 | 23.52% |
| Total liabilities | 37,057 | 44,804 | 58,447 | 68,860 | 83,872 | 105,589 | 142,898 | 209,480 | 286,118 | 279,623 | 25.18% |
| Shareholders' equity | 19,679 | 24,460 | 30,703 | 34,624 | 49,632 | 49,885 | 60,539 | 71,693 | 89,600 | 86,021 | 17.81% |
| Reserves | 10,530 | 13,033 | 17,696 | 20,482 | 27,990 | 34,600 | 42,857 | 51,477 | 68,218 | 60,891 | 21.53% |
| Financial performance | | | | | | | | | | | Average |
| Leverage | 0.60 | 0.52 | 0.60 | 0.60 | 0.74 | 0.39 | 0.63 | 0.67 | 0.69 | 0.68 | 0.61 |
| Return on equity | 12.48% | 13.65% | 15.57% | 12.72% | 10.86% | 14.52% | 14.07% | 13.52% | 10.70% | −6.38% | 11.17% |
| Return on assets | 3.99% | 3.87% | 4.92% | 3.83% | 4.77% | 2.66% | 3.77% | 3.09% | 2.33% | −1.33% | 3.19% |
| Asset turnover | 0.51 | 0.41 | 0.42 | 0.41 | 0.47 | 0.23 | 0.36 | 0.32 | 0.28 | 0.30 | 0.37 |
| Net profit margin | 7.82% | 9.42% | 11.78% | 9.42% | 10.10% | 11.50% | 10.56% | 9.70% | 8.22% | −4.50% | 8.40% |
| Number of companies | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48.0 |
| Average sales per company (RM million) | 654 | 738 | 846 | 974 | 1111 | 1313 | 1680 | 2082 | 2428 | 2539 | 1436 |
| Medium-sized companies (RM million) | | | | | | | | | | | |
| Net sales | 7,182 | 10,093 | 12,211 | 12,606 | 12,977 | 15,262 | 19,019 | 21,956 | 25,518 | 24,197 | 14.45% |
| Net income | 334 | 662 | 829 | 1,218 | 1,161 | 1,834 | 2,740 | 2,802 | 3,413 | 353 | 0.62% |
| Fixed assets | 4,720 | 5,358 | 6,118 | 6,131 | 6,904 | 8,003 | 9,252 | 11,228 | 13,050 | 16,506 | 14.92% |
| Total assets | 13,142 | 15,069 | 18,196 | 19,598 | 21,845 | 25,808 | 32,699 | 40,806 | 49,236 | 56,027 | 17.48% |
| Total liabilities | 5,371 | 6,247 | 7,562 | 7,796 | 8,224 | 10,040 | 12,490 | 16,328 | 21,429 | 24,835 | 18.55% |
| Shareholders' equity | 7,426 | 7,822 | 10,047 | 11,271 | 12,599 | 15,386 | 19,561 | 23,421 | 27,249 | 29,289 | 16.47% |
| Reserves | 2,807 | 3,187 | 3,972 | 4,907 | 5,726 | 7,129 | 10,214 | 13,114 | 16,004 | 18,047 | 22.97% |
| Financial performance | | | | | | | | | | | |
| Leverage | 0.41 | 0.41 | 0.42 | 0.40 | 0.38 | 0.39 | 0.38 | 0.40 | 0.44 | 0.44 | 0.41 |
| Return on equity | 4.50% | 8.46% | 8.25% | 10.81% | 9.22% | 11.92% | 14.01% | 11.96% | 12.53% | 1.21% | 9.29% |

***Table 5.*** (*Continued*)

| | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | Compound Growth Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Return on assets | 2.54% | 4.39% | 4.56% | 6.21% | 5.31% | 7.11% | 8.38% | 6.87% | 6.93% | 0.63% | 5.29% |
| Asset turnover | 0.55 | 0.67 | 0.67 | 0.64 | 0.59 | 0.59 | 0.58 | 0.54 | 0.52 | 0.43 | 0.58 |
| Net profit margin | 4.65% | 6.56% | 6.79% | 9.66% | 8.95% | 12.02% | 14.41% | 12.76% | 13.37% | 1.46% | 9.06% |
| Number of companies | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49.0 |
| Average sales per company (RM million) | 147 | 206 | 249 | 257 | 265 | 311 | 388 | 448 | 521 | 494 | 329 |
| Small-sized companies (RM million) | | | | | | | | | | | |
| Net sales | 4,505 | 5,392 | 6,371 | 6,682 | 6,952 | 7,502 | 9,006 | 14,556 | 10,850 | 10,965 | 10.39% |
| Net income | 246 | 209 | 275 | 368 | 426 | 748 | 764 | 837 | 708 | −444 | −6.78% |
| Fixed assets | 2,500 | 2,686 | 2,962 | 3,290 | 3,522 | 3,675 | 4,238 | 4,798 | 6,071 | 7,183 | 12.44% |
| Total assets | 5,977 | 7,869 | 7,209 | 7,652 | 8,733 | 10,080 | 12,007 | 14,069 | 17,034 | 18,807 | 13.58% |
| Total liabilities | 2,547 | 2,737 | 3,080 | 3,268 | 3,729 | 3,799 | 4,466 | 6,265 | 7,211 | 8,715 | 14.65% |
| Shareholders' equity | 3,618 | 3,723 | 4,146 | 4,356 | 5,037 | 6,187 | 7,275 | 8,449 | 9,539 | 9,579 | 11.43% |
| Reserves | 995 | 1,101 | 1,261 | 1,363 | 1,908 | 2,725 | 3,794 | 4,582 | 5,459 | 5,370 | 20.60% |
| Financial performance | | | | | | | | | | | |
| Leverage | 0.43 | 0.35 | 0.43 | 0.43 | 0.43 | 0.38 | 0.37 | 0.45 | 0.42 | 0.46 | 0.41 |
| Return on equity | 6.80% | 5.61% | 6.63% | 8.45% | 8.46% | 12.09% | 10.50% | 9.91% | 7.42% | −4.64% | 7.12% |
| Return on assets | 4.12% | 2.66% | 3.81% | 4.81% | 4.88% | 7.42% | 6.36% | 5.95% | 4.16% | −2.36% | 4.18% |
| Asset turnover | 0.75 | 0.69 | 0.88 | 0.87 | 0.80 | 0.74 | 0.75 | 1.03 | 0.64 | 0.58 | 0.77 |
| Net profit margin | 5.46% | 3.88% | 4.32% | 5.51% | 6.13% | 9.97% | 8.48% | 5.75% | 6.53% | −4.05% | 5.20% |
| Number of companies | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48.0 |
| Average sales per company (RM million) | 94 | 112 | 133 | 139 | 145 | 156 | 188 | 303 | 226 | 228 | 172 |

***Table 6.*** Growth and Financial Performance of Selected Public Listed Companies by Corporate Control Structure, 1989–1998.

| | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | Compound Growth Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Conglomerate Financial indicators (RM million) | | | | | | | | | | | |
| Net sales | 27,476 | 31,107 | 36,254 | 40,980 | 46,825 | 53,141 | 69,027 | 86,215 | 100,373 | 99,613 | 15.39% |
| Net income | 1,947 | 2,898 | 4,261 | 3,603 | 4,728 | 5,711 | 7,077 | 8,342 | 10,068 | −6,055 | −13.44% |
| Fixed assets | 13,748 | 15,752 | 18,764 | 21,126 | 27,026 | 31,963 | 41,716 | 47,126 | 56,723 | 71,568 | 20.12% |
| Total assets | 53,360 | 65,685 | 87,001 | 103,385 | 98,718 | 253,050 | 196,955 | 275,499 | 363,407 | 356,104 | 23.48% |
| Total liabilities | 32,843 | 40,015 | 53,243 | 63,401 | 76,863 | 95,935 | 125,011 | 185,182 | 255,192 | 249,664 | 25.28% |
| Shareholders' equity | 16,382 | 20,376 | 26,418 | 29,313 | 43,115 | 41,470 | 50,161 | 60,404 | 75,397 | 73,327 | 18.12% |
| Reserves | 7,573 | 9,678 | 14,206 | 16,398 | 22,770 | 27,646 | 34,537 | 42,339 | 56,018 | 50,589 | 23.49% |
| Financial performance | | | | | | | | | | | |
| Leverage | 0.62 | 0.61 | 0.61 | 0.61 | 0.78 | 0.38 | 0.63 | 0.67 | 0.70 | 0.70 | 0.63 |
| Return on equity | 11.88% | 14.22% | 16.13% | 12.29% | 10.97% | 13.77% | 14.11% | 13.81% | 13.35% | −8.26% | 11.23% |
| Return on assets | 3.65% | 4.41% | 4.90% | 3.49% | 4.79% | 2.26% | 3.59% | 3.03% | 2.77% | −1.70% | 3.12% |
| Asset turnover | 0.51 | 0.47 | 0.42 | 0.40 | 0.47 | 0.21 | 0.35 | 0.31 | 0.28 | 0.28 | 0.37 |
| Net profit margin | 7.09% | 9.32% | 11.75% | 8.79% | 10.10% | 10.75% | 10.25% | 9.68% | 10.03% | −6.08% | 8.17% |
| Number of companies | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56.0 |
| Average sales per company (RM million) | 491 | 555 | 647 | 732 | 836 | 949 | 1233 | 1540 | 1792 | 1779 | 1055 |
| Independent Financial indicators (RM million) | | | | | | | | | | | |
| Net sales | 15,589 | 19,810 | 22,915 | 25,060 | 26,448 | 32,631 | 39,635 | 50,225 | 52,539 | 57,420 | 15.59% |
| Net income | 1,089 | 1,312 | 1,624 | 2,387 | 2,249 | 4,115 | 4,949 | 4,991 | 3,638 | 475 | −8.81% |
| Fixed assets | 10,794 | 11,959 | 13,220 | 14,372 | 15,409 | 17,574 | 21,640 | 26,905 | 34,503 | 39,002 | 15.34% |
| Total assets | 27,257 | 43,634 | 35,589 | 38,948 | 44,962 | 55,177 | 73,828 | 92,672 | 114,624 | 130,466 | 19.00% |
| Total liabilities | 12,132 | 13,774 | 15,845 | 16,523 | 18,962 | 23,493 | 34,968 | 46,890 | 59,567 | 63,510 | 20.19% |
| Shareholders' equity | 14,340 | 15,629 | 18,478 | 20,938 | 24,153 | 29,989 | 37,264 | 43,160 | 50,991 | 51,563 | 15.28% |
| Reserves | 6,759 | 7,643 | 8,723 | 10,353 | 12,854 | 16,808 | 22,329 | 26,834 | 33,663 | 33,719 | 19.55% |

***Table 6.*** (*Continued*)

| | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | Compound Growth Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Financial performance | | | | | | | | | | | |
| Leverage | 0.45 | 0.32 | 0.45 | 0.42 | 0.42 | 0.43 | 0.47 | 0.51 | 0.52 | 0.49 | 0.45 |
| Return on equity | 7.59% | 8.39% | 8.79% | 11.40% | 9.31% | 13.72% | 13.28% | 11.56% | 7.13% | 0.92% | 9.21% |
| Return on assets | 4.00% | 3.01% | 4.56% | 6.13% | 5.00% | 7.46% | 6.70% | 5.39% | 3.17% | 0.36% | 4.58% |
| Asset turnover | 0.57 | 0.45 | 0.64 | 0.64 | 0.59 | 0.59 | 0.54 | 0.54 | 0.46 | 0.44 | 0.55 |
| Net profit margin | 6.99% | 6.62% | 7.09% | 9.53% | 8.50% | 12.61% | 12.49% | 9.94% | 6.92% | 0.83% | 8.15% |
| Number of companies | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89.0 |
| Average sales per company (RM million) | 175 | 223 | 257 | 282 | 297 | 367 | 445 | 564 | 590 | 645 | 385 |

severely. Comparing the net income figure for both groups in the sample, it can be seen that conglomerate companies suffered a total loss of RM6,055 million in 1998, while independent companies only suffered a decrease in their net income. Due to the loss incurred by conglomerate companies, their average net profit margins declined tremendously from 10.0% in 1997 to −6.1% in 1998.

Despite a negative ROE for the conglomerate companies in 1998, their average ROE for the period 1989–1998 were still higher than for independent companies, as the conglomerate companies were consistently reported higher ROE values. However, the ROA for independent companies outperformed the conglomerate companies as their net sales continued to increase in 1998 even though by less. Net sales for conglomerate companies declined by approximately 1% in 1998.

### *3.5. Patterns of Corporate Investment*

#### *3.5.1. Investment Patterns for All Non-financial Companies*

A summary of aggregate investment indicators[8] of the non-financial corporate sector is presented in Table 7. The average rate of new investment in fixed assets for the 10-year period was 36%. From 1989 to 1993, this rate has been high, averaging about 40% per year. From 1994 to 1998, this rate went down to 30% per year. An opposite pattern appears for other assets. The rate of new investments in other assets is 64% for the 10-year period. The rate of investment in other assets grew from 60% per year in 1989–1993 to 70% per year in 1994–1998. These data suggest that there was a slowdown in investment in fixed capacities prior to the crisis and a corresponding growth in other assets. As a result, other assets grew while fixed assets accounted for a declining proportion of total assets. From a high level of 43% of total assets in 1992, its share of total assets went down to 32% by 1998. Investments in fixed assets grew at a stable rate of about 26% between 1989 and 1998. By comparison, total assets grew at a much faster rate, at 34%. Thus prior to the crisis, growth in total assets was comparatively high, and this growth was not in the form of fixed assets.

#### *3.5.2. Corporate Investment Patterns by Firm Size*

Corporate investment indicators by firm size are shown in Table 8. The large-sized firms invested least in fixed assets. Due to the huge deficit in fixed asset investment by the large-sized firms in 1998, its average is pulled down to a negative figure. However, incremental investment in fixed assets by the medium-and small-sized firms is 26%. This indicates that medium-and small-sized firms outgrew their large-sized counterparts.

***Table 7.*** Aggregate Investment Patterns, Non-financial Companies, Corporate Sector, 1989–1997. For the Years Ending December 31.

| Investment Flow Indicators | 1989 | 1990 | 1991 | 1992 | 1993 | 1989–1993 Avg. | 1994 | 1995 | 1996 | 1997 | 1998 | 1994–1998 Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rate of new investment – Fixed assets | 0.37 | 0.35 | 0.36 | 0.49 | 0.41 | 0.40 | 0.35 | 0.28 | 0.30 | 0.27 | 0.29 | 0.30 |
| Rate of new investment – Other assets | 0.63 | 0.65 | 0.64 | 0.51 | 0.59 | 0.60 | 0.65 | 0.72 | 0.70 | 0.73 | 0.70 | 0.70 |
| Growth rate – Fixed assets | 0.21 | 0.35 | 0.20 | 0.47 | 0.21 | 0.29 | 0.25 | 0.26 | 0.15 | 0.26 | 0.22 | 0.23 |
| Growth rate – Other assets | 0.24 | 0.42 | 0.23 | 0.38 | 0.22 | 0.30 | 0.30 | 0.37 | 0.19 | 0.34 | 0.32 | 0.30 |
| Fixed assets/Total assets | 0.43 | 0.41 | 0.40 | 0.43 | 0.42 | 0.42 | 0.41 | 0.37 | 0.36 | 0.34 | 0.33 | 0.37 |

*Source:* KLSE.

***Table 8.*** Corporate Investment Patterns of Selected Public Listed Companies by Firm Size (1989–1998).

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | Avg. |
|---|---|---|---|---|---|---|---|---|---|---|
| Large sized companies | | | | | | | | | | |
| Corporate investment indicators | | | | | | | | | | |
| Incremental investments in fixed assets | 0.09 | 0.30 | 0.18 | −2.99 | 0.04 | −0.26 | −0.01 | 0.23 | −591.08 | −65.94 |
| Incremental investments in total assets | 0.91 | 0.70 | 0.82 | 3.99 | 0.96 | 1.26 | 1.01 | 0.77 | 592.08 | 66.94 |
| Average growth rate of fixed assets | 0.14 | 0.16 | 0.14 | 0.23 | 0.18 | 0.32 | −0.02 | 0.47 | 0.20 | 0.20 |
| Average growth rate of total assets | 0.40 | 0.13 | 0.18 | −0.02 | 1.41 | −0.17 | 0.39 | 0.31 | 0.00 | 0.29 |
| Medium sized companies | | | | | | | | | | |
| Corporate investment indicators | | | | | | | | | | |
| Incremental investments in fixed assets | 0.33 | 0.24 | 0.01 | 0.34 | 0.28 | 0.18 | 0.24 | 0.22 | 0.51 | 0.26 |
| Incremental investments in total assets | 0.67 | 0.76 | 0.99 | 0.66 | 0.72 | 0.82 | 0.76 | 0.78 | 0.49 | 0.74 |
| Average growth rate of fixed assets | 0.14 | 0.14 | 0.00 | 0.13 | 0.16 | 0.16 | 0.21 | 0.16 | 0.26 | 0.15 |
| Average growth rate of total assets | 0.15 | 0.21 | 0.08 | 0.11 | 0.18 | 0.27 | 0.25 | 0.21 | 0.14 | 0.18 |
| Small sized companies | | | | | | | | | | |
| Corporate investment indicators | | | | | | | | | | |
| Incremental investments in fixed assets | 0.10 | −0.42 | 0.74 | 0.21 | 0.11 | 0.29 | 0.27 | 0.43 | 0.63 | 0.26 |
| Incremental investments in total assets | 0.90 | 1.42 | 0.26 | 0.79 | 0.89 | 0.71 | 0.73 | 0.57 | 0.37 | 0.74 |
| Average growth rate of fixed assets | 0.07 | 0.10 | 0.11 | 0.07 | 0.04 | 0.15 | 0.13 | 0.27 | 0.18 | 0.13 |
| Average growth rate of total assets | 0.32 | −0.08 | 0.06 | 0.14 | 0.15 | 0.19 | 0.17 | 0.21 | 0.10 | 0.14 |

*Source:* Calculated from KLSE.

The total assets of large-sized firms contracted in 1993 and 1995, and their total assets remained constant in 1998. This suggests that large-sized firms tend to invest less or not at all during economic booms and troughs.

From Table 8, it can also be observed that average values of the corporate investment indicators do not differ much between medium- and small-sized firms, although their investment composition may differ within the 10-year period. However, these two groups did in fact invest heavily in other assets during the economic boom in 1993, and switched their investments to fixed assets during the crisis in 1998.

*3.5.3. Corporate Investment Patterns by Corporate Control Structure*

Whether a company belongs to a conglomerate or independent influences its corporate investment patterns. This is shown in Table 9.

The fixed assets of conglomerate companies experienced a negative incremental investment, averaging −31% compared to the independent companies' average of 20%. Independent companies invested in fixed assets rather consistently, except in 1992. Besides that, fixed assets average growth rate ranged between 9 and 28%, with an annual average of 16%.

## *3.6. Patterns of Corporate Financing*

*3.6.1. Financing Patterns for All Non-financial Companies*

Aggregate financing indicators[9] for the publicly listed non-financial corporate sector in Malaysia are summarized in Table 10. Self-financing ratio (SFR) for fixed assets is high, averaging 70% of growth in fixed assets for 1989–1998. It suggests that internal funds are sufficient to finance fixed assets requirements of the corporate sector. SFR (fixed assets) fluctuated from year-to-year. Prior to the financial crisis, the SFR (fixed assets) was at its peak, reaching 112%. By 1997 however, the ratio went down to only 44% because companies did not make much profit during this crisis year, and by 1998 a negative ratio is observed.

The self-financing ratio for total assets on average is much lower at 3%. This indicates that income net of dividends is not sufficient to finance the growth of total assets of publicly listed companies. Over the years, this level had not exceeded 8% and was even negative in the crisis year 1997 and 1998. Publicly listed companies seem to be relying more on new equity finance of total assets growth, especially in 1992 when the new equity financing ratio was as high at 56%. On average, during 1989 to 1998, companies relied on new equity financing to finance 43% of growth in total assets. Incremental debt financing ratio ranged between 38% to 68% during the period up to the crisis. Between 1989 and 1990 new equity

***Table 9.*** Corporate Investment Patterns of Selected Public Listed Companies by Corporate Control Structure, 1989–1998.

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | Avg. |
|---|---|---|---|---|---|---|---|---|---|---|
| Conglomerate | | | | | | | | | | |
| Corporate investment indicators | | | | | | | | | | |
| Incremental Investments in fixed assets | 0.16 | 0.14 | 0.14 | −1.26 | 0.03 | −0.17 | 0.07 | 0.11 | −2.03 | −0.31 |
| Incremental Investments in other assets | 0.84 | 0.86 | 0.86 | 2.26 | 0.97 | 1.17 | 0.93 | 0.89 | 3.03 | 1.31 |
| Average growth rate of fixed assets | 0.15 | 0.19 | 0.13 | 0.28 | 0.18 | 0.31 | 0.13 | 0.20 | 0.26 | 0.20 |
| Average growth rate of total assets | 0.23 | 0.32 | 0.19 | −0.05 | 1.56 | −0.22 | 0.40 | 0.32 | −0.02 | 0.30 |
| Independent | | | | | | | | | | |
| Corporate investment indicators | | | | | | | | | | |
| Incremental investments in fixed assets | 0.07 | −0.16 | 0.34 | 0.17 | 0.21 | 0.22 | 0.28 | 0.35 | 0.28 | 0.20 |
| Incremental investments in other assets | 0.93 | 1.16 | 0.66 | 0.83 | 0.79 | 0.78 | 0.72 | 0.65 | 0.72 | 0.80 |
| Average growth rate of fixed assets | 0.11 | 0.11 | 0.09 | 0.07 | 0.14 | 0.23 | 0.24 | 0.28 | 0.13 | 0.16 |
| Average growth rate of total assets | 0.60 | −0.18 | 0.09 | 0.15 | 0.23 | 0.34 | 0.26 | 0.24 | 0.14 | 0.21 |

*Source* : Calculated from KLSE.

***Table 10.*** Financing Patterns in the Aggressive Corporate Sector: Non-financial Companies (1989–1998). For Years Ending December 31.

| Financial Flow Indicators | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Self-financing ratio – fixed assets | 0.75 | 0.62 | 0.96 | 0.49 | 0.94 | 0.79 | 0.77 | 1.12 | 0.44 | −0.29 | 0.70 |
| Self-financing ratio – total assets | 0.08 | 0.07 | 0.04 | 0.06 | 0.07 | 0.04 | 0.02 | 0.03 | −0.04 | −0.10 | 0.03 |
| New equity financing ratio | 0.51 | 0.57 | 0.41 | 0.56 | 0.47 | 0.40 | 0.32 | 0.32 | 0.27 | 0.45 | 0.43 |
| Incremental debt financing ratio | 0.39 | 0.38 | 0.60 | 0.38 | 0.50 | 0.54 | 0.63 | 0.66 | 0.68 | −0.19 | 0.48 |
| Incremental equity financing ratio | 0.61 | 0.62 | 0.40 | 0.62 | 0.50 | 0.46 | 0.37 | 0.34 | 0.32 | 1.19 | 0.54 |

*Source:* KLSE.

was preferred to debt in financing growth in total assets. However, by 1993 we could see a trend towards preference for debt compared to equity to finance asset growth. In 1994, 54% of total asset growth was financed by debt but by 1995 the percentage increased to 63%. Prior to the financial crisis, 68% of total assets growth (i.e. the highest in the period of study) was financed by debt. In short, debts financed about two-thirds of total asset growth of the corporate sector. By 1998, the percentage decreased to −19% because during this period, banks started to impose strict credit requirements and require more collateral for loan applications.

*3.6.2. Corporate Financing Patterns by Firm Size*

Corporate financing indicators by firm size are presented in Table 11.

The self-financing ratio for fixed assets is the highest for the medium-sized firms, with an average rate of more than 1000%. This shows that the net income of medium-sized firms had the ability to finance up to more than ten times the growth of its fixed assets. However, the self-financing ratios for large-sized firms indicate that they are unable to finance its growth in fixed assets solely with net income. The large-sized firms are also unable to finance growth in total assets just by obtaining additional new equity. Therefore, they relied mainly on debt financing for assets growth.

Medium-and small sized firms relied more on equity financing rather than debt financing, with an average 60–40 ratio for medium-sized firms, and an average 68–32 ratio for small-sized firms. However, medium- and small-sized firms did not rely heavily on new equity financing, with averages of only 18 and 6% respectively.

*3.6.3. Corporate Financing Patterns by Corporate Control Structure*

Most conglomerates have financing arms, an example, Sime Darby's financing arm was Sime Bank (until 1998), while AMMB Holdings has Arab-Malaysian Finance. Conglomerates are deemed to have an advantage in financing as they are able to relocate funds within the group and obtain better access to credit facilities on behalf of the group as a whole. Corporate financing indicators by corporate control structure are shown in Table 12.

The tabulations show that self-financing ratios for fixed assets of independent companies are slightly higher than for conglomerates. Net income financed 103% of the conglomerate companies' fixed assets growth, while reserves covered only 1% of total assets growth. Comparatively, independent companies used more of their reserves, an average of 23%, to finance total asset growth.

Generally, companies under both corporate control structures tend to rely more on equity financing. However, conglomerates used up to 90% equity financing on average, while independent companies used two-thirds equity with respect to debt on average. This indicates that investments were mainly financed internally. These

***Table 11.*** Corporate Financing Patterns for Selected Public Listed Companies by Firm Size, 1989–1998.

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | Avg. |
|---|---|---|---|---|---|---|---|---|---|---|
| Large sized companies | | | | | | | | | | |
| Financing patterns Indicators | | | | | | | | | | |
| Self-financing ratio (fixed assets) | 1.42 | 1.48 | 1.39 | 0.91 | 1.24 | 0.71 | −11.22 | 0.41 | −0.37 | −0.45 |
| Self-financing ratio (total assets) | 0.10 | 0.43 | 0.16 | −3.79 | 0.04 | −0.18 | 0.10 | 0.17 | 293.08 | 32.23 |
| New equity financing ratio | 0.09 | 0.15 | 0.06 | −3.78 | −0.04 | −0.05 | 0.03 | 0.01 | −149.92 | −17.05 |
| Incremental debt financing ratio | 0.31 | 1.26 | 0.58 | −7.57 | 0.14 | −0.81 | 0.76 | 0.78 | 259.80 | 28.36 |
| Incremental equity financing ratio | 0.69 | −0.26 | 0.42 | 8.57 | 0.86 | 1.81 | 0.24 | 0.22 | −258.8 | −27.36 |
| Medium sized companies | | | | | | | | | | |
| Financing patterns indicators | | | | | | | | | | |
| Self-financing ratio (fixed assets) | 1.04 | 1.09 | 93.69 | 1.50 | 1.67 | 2.19 | 1.42 | 1.87 | 0.10 | 11.62 |
| Self-financing ratio (total assets) | 0.20 | 0.25 | 0.67 | 0.36 | 0.35 | 0.45 | 0.36 | 0.34 | 0.30 | 0.36 |
| New equity financing ratio | 0.01 | 0.46 | 0.21 | 0.23 | 0.35 | 0.16 | 0.12 | 0.11 | 0.00 | 0.18 |
| Incremental debt financing ratio | 0.45 | 0.42 | 0.17 | 0.19 | 0.46 | 0.36 | 0.47 | 0.61 | 0.50 | 0.40 |
| Incremental equity financing ratio | 0.55 | 0.58 | 0.83 | 0.81 | 0.54 | 0.64 | 0.53 | 0.39 | 0.50 | 0.60 |
| Small sized companies | | | | | | | | | | |
| Financing patterns indicators | | | | | | | | | | |
| Self-financing ratio (fixed assets) | 1.12 | 1.00 | 1.12 | 1.84 | 4.89 | 1.36 | 1.49 | 0.56 | −0.40 | 1.44 |
| Self-financing ratio (total assets) | 0.06 | −0.24 | 0.23 | 0.50 | 0.61 | 0.55 | 0.38 | 0.30 | −0.05 | 0.26 |
| New equity financing ratio | 0.00 | −0.40 | 0.24 | 0.13 | 0.25 | 0.01 | 0.19 | 0.07 | 0.07 | 0.06 |
| Incremental debt financing ratio | 0.10 | −0.52 | 0.42 | 0.43 | 0.05 | 0.35 | 0.87 | 0.32 | 0.85 | 0.32 |
| Incremental equity financing ratio | 0.90 | 1.52 | 0.58 | 0.57 | 0.95 | 0.65 | 0.13 | 0.68 | 0.15 | 0.68 |

*Source:* Calculated from KLSE.

***Table 12.*** Corporate Financing Patterns for Selected Public Listed Companies by Corporate Control Structure, 1989−1998.

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | Avg. |
|---|---|---|---|---|---|---|---|---|---|---|
| Conglomerate | | | | | | | | | | |
| Financing patterns indicators | | | | | | | | | | |
| Self-financing ratio (fixed assets) | 1.45 | 1.41 | 1.53 | 0.80 | 1.16 | 0.73 | 1.54 | 1.05 | −0.41 | 1.03 |
| Self-financing ratio (total assets) | 0.17 | 0.21 | 0.13 | −1.37 | 0.03 | −0.12 | 0.10 | 0.16 | 0.74 | 0.01 |
| New equity financing ratio | 0.15 | 0.07 | 0.04 | −1.59 | −0.04 | −0.03 | 0.03 | 0.01 | −0.46 | 0.20 |
| Incremental debt financing ratio | 0.58 | 0.62 | 0.62 | −2.88 | 0.12 | −0.52 | 0.77 | 0.80 | 0.76 | 0.10 |
| Incremental equity financing ratio | 0.42 | 0.38 | 0.38 | 3.88 | 0.88 | 1.52 | 0.23 | 0.20 | 0.24 | 0.90 |
| Independent | | | | | | | | | | |
| Financing patterns indicators | | | | | | | | | | |
| Self-financing ratio (fixed assets) | 1.13 | 1.29 | 2.07 | 2.17 | 1.90 | 1.22 | 0.95 | 0.48 | 0.11 | 1.26 |
| Self-financing ratio (total assets) | 0.05 | −0.13 | 0.49 | 0.42 | 0.39 | 0.30 | 0.24 | 0.31 | 0.00 | 0.23 |
| New equity financing ratio | 0.02 | −0.22 | 0.25 | 0.12 | 0.18 | 0.09 | 0.07 | 0.05 | 0.03 | 0.07 |
| Incremental debt financing ratio | 0.10 | −0.26 | 0.20 | 0.41 | 0.44 | 0.62 | 0.63 | 0.58 | 0.25 | 0.33 |
| Incremental equity financing ratio | 0.90 | 1.26 | 0.80 | 0.59 | 0.56 | 0.38 | 0.37 | 0.42 | 0.75 | 0.67 |

*Source:* Calculated from KLSE.

results support earlier findings that conglomerate companies were substantially more leveraged than independent companies.

### *3.7. Corporate Governance with Corporate Performance, Investment and Financing Patterns*[10]

Previous studies on corporate governance have often associated ownership concentration with heightened risk-taking by companies. Large shareholders may borrow extensively to undertake risky projects, knowing that if an investment turns out to be successful they could capture most of the gain; while if it fails, creditors bear the consequences. Large shareholders may also overuse financial leverage to avoid diluting ownership and control.

#### *3.7.1. Corporate Governance and Corporate Performance*

Results of the regression analysis for corporate performance, using ROE, ROA and leverage as proxies, are shown in Table 13. ROE, ROA and leverage are each regressed with firm size, corporate control structure and industry sector, which are the three corporate governance variables used in this study.

From the regression results, ROE are ROA are each significantly positively related to firm size, but significantly negatively related to industry sectors. Leverage is significantly positively related to firm size and industry sectors. This implies that as companies become larger in terms of total assets, ROE and ROA increased i.e. returns on investment increase, and they also tend to rely more on debt financing. This substantiates the statistical data presented in Table 5. However, even though regression results show that ROE, ROA and leverage are each negatively related to corporate control structure, the results are not significant enough for us to conclude that corporate governance can be linked to corporate performance.

#### *3.7.2. Corporate Governance and Corporate Investment Patterns*

Each of the corporate investment indicators, i.e. incremental investment in fixed assets, incremental investment in other assets, average growth rate in fixed assets and average growth rate in total assets, was regressed with corporate governance variables, i.e. firm size, corporate control structure and industry sectors. The statistical results are shown in Table 14.

The regression results show that incremental investment in fixed assets and the average growth in fixed assets are negatively related with firm size, with the former showing significant statistical results ($p < 0.10$). This implies that as companies grew larger in terms of total assets, they tend to invest less in fixed assets relative to total assets growth. On the other hand, the results are reversed

***Table 13.*** Corporate Performance Relative to Corporate Governance Variables.

| Regression Variables | Coefficient | Standard Error | *t*-Value | Significance Level |
|---|---|---|---|---|
| Dependent variable: Return on equity | | | | |
| Independent variables | | | | |
| Firm size | 0.02883 | 0.012 | 2.493 | 0.014 |
| Corporate control structure | −0.01971 | 0.019 | −2.266 | 0.309 |
| Industry sectors | −0.01099 | 0.005 | −1.021 | 0.025 |
| Overall regression statistics | | | | |
| Adjusted $R^2 = 0.072$ | | | 4.726 | 0.004 |
| *F* | | | | |
| Dependent variable: Return on assets | | | | |
| Independent variables | | | | |
| Firm size | 0.00375 | 0.006 | 0.660 | 0.511 |
| Corporate control structure | −0.00512 | 0.009 | −0.540 | 0.590 |
| Industry sectors | −0.00627 | 0.002 | −2.629 | 0.010 |
| Overall regression statistics | | | | |
| Adjusted $R^2 = 0.032$ | | | 2.602 | 0.054 |
| *F* | | | | |
| Dependent variable: Leverage | | | | |
| Independent variables | | | | |
| Firm size | 0.05119 | 0.024 | 2.120 | 0.036 |
| Corporate control structure | −0.03604 | 0.040 | −0.894 | 0.373 |
| Industry sectors | −0.01933 | 0.010 | −1.909 | 0.058 |
| Overall regression statistics | | | | |
| Adjusted $R^2 = 0.048$ | | | 3.426 | 0.019 |
| *F* | | | | |

when analysing incremental investment in other assets. When the growth rate of total assets was regressed on firm size, significant results were obtained which show that, as firms grew larger in terms of their total assets, average growth rate of their total assets increased. However, when the average growth rate in fixed assets was regressed with the three corporate governance variables, the results show that they were negatively related, but not significantly.

Although the statistical relationships correspond with the descriptive analysis, the regression results between corporate investment indicators and corporate governance variables do not produce statistically significant results.

Hence, based on the strict criteria imposed in the sample selection, the null hypothesis stating no relationship between corporate governance and investment patterns cannot be rejected, since results of the regressions were generally insignificant. Therefore, it can be concluded that while there might be a relationship

***Table 14.*** Corporate Investment Patterns Relative to Corporate Governance Variables.

| Regression Variables | Coefficient | Standard Error | *t*-Value | Significance Level |
|---|---|---|---|---|
| Dependent Variable: Incremental investment in fixed assets | | | | |
| Independent variables | | | | |
| Firm size | −0.15100 | 0.082 | −1.848 | 0.067 |
| Corporate control structure | −0.20700 | 0.137 | −1.514 | 0.132 |
| Industry sectors | 0.05676 | 0.034 | 1.654 | 0.100 |
| Overall regression statistics | | | | |
| Adjusted $R^2 = 0.025$ | | | 2.244 | 0.086 |
| *F* | | | | |
| Dependent variable: Incremental investment in other assets | | | | |
| Independent variables | | | | |
| Firm size | 0.15100 | 0.082 | 1.848 | 0.067 |
| Corporate control structure | 0.20700 | 0.137 | 1.514 | 0.132 |
| Industry sectors | −0.05676 | 0.034 | −1.654 | 0.100 |
| Overall regression statistics | | | | |
| Adjusted $R^2 = 0.025$ | | | 2.244 | 0.086 |
| *F* | | | | |
| Dependent variable: Average growth rate in fixed assets | | | | |
| Independent variables | | | | |
| Firm size | −0.36100 | 0.789 | −0.457 | 0.648 |
| Corporate control structure | −0.02806 | 1.316 | −0.155 | 0.983 |
| Industry sectors | −0.03813 | 0.331 | −0.021 | 0.908 |
| Overall regression statistics | | | | |
| Adjusted $R^2 = 0.013$ | | | 0.081 | 0.970 |
| *F* | | | | |
| Dependent variable: Average growth rate in total assets | | | | |
| Independent variables | | | | |
| Firm size | 0.16900 | 0.080 | 2.113 | 0.036 |
| Corporate control structure | 0.09998 | 0.134 | 0.748 | 0.456 |
| Industry sectors | 0.01484 | 0.034 | 0.442 | 0.659 |
| Overall regression statistics | | | | |
| Adjusted $R^2 = 0.013$ | | | 1.608 | 0.190 |
| *F* | | | | |

between corporate governance and corporate investment patterns, they are not statistically significant.

*3.7.3. Corporate Governance and Financing Patterns*

The corporate financing patterns indicators were each regressed with firm size, corporate control structure and industry sectors. The results of the regression analysis are presented in Table 15.

***Table 15.*** Corporate Financing Patterns Relative to Corporate Governance Variables.

| Regression Variables | Coefficient | Standard Error | *t*-Value | Significance Level |
|---|---|---|---|---|
| Dependent variable: Self-financing ratio (fixed assets) | | | | |
| Independent variables | | | | |
| Firm size | −0.78000 | 2.831 | −0.275 | 0.783 |
| Corporate control structure | −4.33100 | 4.723 | −0.917 | 0.361 |
| Industry sectors | 0.34600 | 1.187 | 0.291 | 0.771 |
| Overall regression statistics | | | | |
| Adjusted $R^2 = -0.015$ | | | 0.303 | 0.823 |
| *F* | | | | |
| Dependent variable: Self-financing ratio (total assets) | | | | |
| Independent variables | | | | |
| Firm size | −0.54400 | 0.480 | −1.134 | 0.259 |
| Corporate control structure | 0.49700 | 0.800 | 0.621 | 0.536 |
| Industry sectors | 0.12800 | 0.201 | 0.634 | 0.527 |
| Overall regression statistics | | | | |
| Adjusted $R^2 = -0.003$ | | | 0.875 | 0.456 |
| *F* | | | | |
| Dependent variable: New equity financing ratio | | | | |
| Independent variables | | | | |
| Firm size | 0.33200 | 0.372 | 0.894 | 0.373 |
| Corporate control structure | −0.30700 | 0.620 | −0.746 | 0.621 |
| Industry sectors | −0.11600 | 0.156 | −0.495 | 0.457 |
| Overall regression statistics | | | | |
| Adjusted $R^2 = -0.020$ | | | 0.642 | 0.589 |
| *F* | | | | |
| Dependent variable: Incremental debt financing ratio | | | | |
| Independent variables | | | | |
| Firm size | 0.20200 | 0.129 | 1.574 | 0.118 |
| Corporate control structure | −0.20700 | 0.214 | −0.965 | 0.336 |
| Industry sectors | −0.02338 | 0.054 | −0.434 | 0.665 |
| Overall regression statistics | | | | |
| Adjusted $R^2 = 0.013$ | | | 1.620 | 0.188 |
| *F* | | | | |
| Dependent variable: Incremental equity financing ratio | | | | |
| Independent variables | | | | |
| Firm size | −0.21200 | 0.120 | −1.764 | 0.080 |
| Corporate control structure | 0.18900 | 0.200 | 0.945 | 0.346 |
| Industry sectors | 0.01127 | 0.050 | 0.224 | 0.823 |
| Overall regression statistics | | | | |
| Adjusted $R^2 = 0.013$ | | | 1.833 | 0.144 |
| *F* | | | | |

The regression analysis shows that the self-financing ratio for fixed assets, self-financing ratio for total assets and the incremental equity financing ratio are negatively related to firm size, with the coefficient for incremental equity financing ratio being significant at the 10% level. This indicates that the larger the company in terms of total assets, the less it relied on equity financing. On the other hand, the incremental debt financing ratio is positively related to firm size, implying that as companies grew larger in terms of total assets, they relied more on debt financing, even though the results are not statistically significant. These conclusions confirm the statistical data presented in Table 11.

When corporate financing patterns indicators are regressed with corporate governance variables, the statistical results are generally insignificant. Hence there is sufficient evidence not to reject the null hypothesis stating no relationship between corporate governance and financing patterns. Again, as mentioned earlier, the results were not statistically significant. Therefore, it can be concluded that there might be a relationship between corporate governance and corporate financing patterns, but they are generally not statistically significant.

The regression analysis sought to establish the relationships between corporate governance with corporate performance, investment and financing patterns. However, statistical tests only show a significant relationship for corporate governance and corporate performance. Statistical results for corporate investment and financing patterns were generally insignificant.

## 4. SUMMARY AND CONCLUSION

This study analyses corporate performance, investment and financing patterns in relation to corporate governance variables from 1989 to 1998. Over this 10-year period, the Malaysian corporate sector grew in terms of company size and formation of conglomerates in all industrial sectors. The profitability and performance of these companies presumably reflected in the way these companies were managed and governed by their agents.

Corporate governance variables considered in this study are firm size, corporate control structure and industry sectors. Based on the findings of the study, corporate governance is related to corporate performance, investment and financing patterns.

The relationship between corporate governance and corporate performance shows statistically significant results. The regression results between financial performance indicators such as return on equity (ROE), return on assets (ROA) and leverage and corporate governance variables show that as companies grew larger, they attained higher returns on investment and relied less on debt financing.

This conclusion confirmed those of previous research carried out by Saldana (1999), Xu and Wang (1997) and Emmons and Schmid (1999).

The relationship between corporate governance with corporate investment patterns and corporate financing patterns is also established in this study. Descriptive analysis has suggested that the Malaysian corporate sector was relatively efficient in investment and financing activities. However, the statistical results testing the relationship between corporate governance with respect to corporate investment patterns and corporate financing patterns were generally insignificant. This could be due to the strict criteria used in the sample selection for this study, causing the null hypothesis not to be rejected. Hence, this might explain the weak statistical relationship between corporate governance with investment and financing patterns.

The Asian Financial Crisis had very unusual effects. This study only found a significant relationship between corporate governance and corporate performance. Perhaps removing the crisis effect could lead to more significant results. A study with a narrower scope encompassing the years 1994–1996 (a three-year study) may give rather different results. This could then be compared with an earlier time period say, between 1990 and 1992, for comparative purposes.

## NOTES

1. Asian Development Bank (1999). Corporate Governance and Financing in Selected Developing Countries in East Asia. Unpublished report.
2. Webb, D. (1998). Some Conceptual Issues in Corporate Governance and Finance. ADB report November 1998.
3. The market value of debt plus the market value of equity divided by the replacement cost of all assets.
4. Since the KLSE requires that at least 25% of the shares should be public, it means that the largest five shareholders control the supply of publicly traded shares in this case.
5. Limiting the analysis to the largest five shareholders results in a bias against small shareholders. Consequently, it is likely that the analysis understates the importance of categories where there are many small shareholders like individuals and foreigners.
6. The author wishes to acknowledge the assistance of Ms Lim Sue Lin for this section.
7. Large-sized companies had total assets of over RM1,000 million. Medium-sized companies had average total assets of RM 390 to RM 1,000 million, and those companies with average total assets of less than RM 390 million are classified as small-sized firms.
8. The non-financial corporate sector's investments are evaluated using investment pattern indicators such as incremental investment in fixed assets, incremental investment in other assets and average growth rates in fixed assets and total assets. Thus fixed assets and total assets are the main proxies for investment patterns. Incremental investments in fixed assets are measured by the change in fixed assets relative to the change in total assets. It describes the significance of growth in fixed assets relative to total investment needs of the corporate sectors. Incremental investments in other assets measure the importance

of working capital and other investments in the corporate sector. The key limitation of these indicators is that it does not indicate the direction of investments. Large government privatisation projects in the 1990s may also have had great influence on the pattern of investments in the corporate sector.

9. Five indicators of corporate financing patterns are self-financing ratio (fixed assets), the self-financing ratio (total assets), the new equity financing ratio, the incremental debt financing ratio and the incremental equity financing ratio. Self-financing ratio (fixed assets) or SFR is defined as the ratio of net income change in fixed assets. It measures the capacity of net income to finance growth in fixed assets. The self-financing ratio (total assets) is defined as the ratio of the change in retained earnings to the change in total assets. It measures the capacity of increases in retained income to finance growth in total assets. The increase in retained earnings is equal to net income minus dividends declared during the year. The new equity financing ratio is the ratio of the change in stockholders' equity (net of change in retained earnings) to the change in total assets. It measures the degree of financing of total asset growth from new equity. This definition of capital includes all sources of capital including revaluation capital, a non-cash item. The incremental debt financing ratio is the ratio of the change in total liabilities to the change in total assets. It measures the degree of financing growth in total assets by additional debts (net of debt repaid during the year). Incremental equity financing ratio is the ratio of change in stockholders' equity to change in total assets. It measures the degree of financing growth in total assets by additional equity, consisting of internally generated capital (retained earnings) and new equity capital. The patterns of aggregate corporate financing for the non-financial sector are reviewed from 1989 through 1997. The analysis uses data from the combined profit and loss and balance sheet statements published by KLSE as performance statistics for its member companies. Analysis reveals the patterns of corporate financing based on historical fund flows in the non-financial corporate sector.

10. The author wishes to acknowledge Ms Lim Sue Lin for her contribution in this section.

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