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VOTING RIGHTS, CORPORATE CONTROL, AND FIRM PERFORMANCE

By

Yi Zhang

A DISSERATTION

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ABSTRACT

VOTING RIGHTS, COPORATE CONTROL, AND FIRM PERFORMANCE

By

Yi Zhang

This dissertation investigates the impact of corporate control on firm performance of companies with dual class stock where voting rights are separated from cash flow rights. I first examine the issues concerning the decision to issue multiple classes of common stock with different voting rights. Firms often issue these shares to maintain a concentrated ownership structure, while at the same time raising new equity capital. I identify all Compustat listed companies with dual/multiple class common stock during the 1990-1999 time period using various databases including Compustat, CRSP, proxy statements, and 10-K filings. This database should be the most comprehensive sample of dual-class listed firms ever assembled. Using the collected data, I proceed to use logit models to examine which factors affect the likelihood that a firm will issue dual-class shares, and also to see if this relationship has changed over time. My principal findings are as follows: (1) There are strong industry effects in the likelihood of having dual class shares – printing, media, and motion picture firms are relatively more likely to have two classes of common stock while utilities are relatively less likely to do so. (2) Company age affects the likelihood of having a dual-class structure - younger firms are more likely to have two classes outstanding. (3) Firm size does not have any significant effect on the likelihood of having dual-class shares. (4) Firms with high stock-return volatility are relatively less likely to have a dual class structure. I then examine issues concerning the

valuation and performance of dual class firms. I identify insider ownership in dual class firms in 1995 using various databases including proxy statements and 10-K filings. This database should be the most comprehensive ownership data sample of dual-class listed firms ever assembled. I compare valuation and performance of dual class firms and single class firms. I am able to investigate the effects of ownership of voting rights and ownership of cash flow rights on firm value separately. My principal findings are as follows: (1) overall dual class firms do not have a lower Tobin's Q than single class firms, (2) dual class firms that have both classes traded publicly have a lower Tobin's Q than single class firm and Tobin's Q increases as insider ownership of cash flow rights rises and declines as insider ownership of voting rights rises, (3) dual class firms that have one class of stock traded publicly do not have a lower Tobin's O than single class firms, (4) within media industries, dual class firms do not have a lower Tobin's Q than single class firms while within non-media industries dual class firms have a lower Tobin's Q than single class firms, (5) there is no evidence that dual class firms underperform single class peers on certain performance measures, such as the Market-tobook equity ratio and the Price/Earnings ratio. There is some evidence that dual class firms underperform single class peers on some other performance measures, such as ROA, EBIT, and operating cash flow. Of these measures, firm performance rises with insider ownership of cash flow rights and decreases with insider ownership of voting rights, (6) investment-cash flow sensitivities increase with insider ownership of cash flow rights and decrease with insider ownership of voting rights. I explore the implications of these results for our understanding of ownership, control and value.

To my past six years.

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CHAPTER 1

DUAL-CLASS STOCK AND THE BENEFITS OF CONTROL

1.1 Introduction

An important issue in the governance of modern corporations is the structure of managerial incentives. Following the seminal work of Berle and Means (1932), researchers have hypothesized that there are many situations where the preferences of managers and shareholders may substantially diverge. In particular, managers and shareholders may disagree on investment policy (e.g., Jensen (1986)), capital structure policy (e.g., Berger, Ofek, and Yermack (1996)), corporate risk taking (e.g., Amihud and Lev (1981)), and attitudes towards acquisition offers (e.g., Stulz (1988)).

One way to solve this agency problem is via the use of incentive compensation and managerial ownership. Consistent with this hypothesis, Morck, Shleifer, and Vishny (1988) demonstrate empirically that managerial ownership may raise firm value by solving agency problems. However, their analysis indicates that there may be both costs and benefits to high managerial ownership. While high ownership may enhance a manager's incentive to act in shareholders interests, it may also entrench managers by giving them the ability to insulate themselves from outside market forces (e.g., unwanted acquisition attempts).

One interesting situation where increased ownership does not necessarily increase both a manager's degree of entrenchment *and* his economic incentive to raise

firm value arises in the context of dual-class share structures. For firms that adopt this ownership form, cash flow rights and voting rights are partially separated. Thus, by studying dual-class firms, we may be able to better understand some of the components of the costs and benefits to managerial ownership.

In this paper I conduct an analysis of firms that adopt a dual-class share structure. While many existing studies have looked at the share price levels and behavior of dualclass stock, no study has carefully examined the factors underlying the decision to adopt a dual-class structure. Using a comprehensive sample of almost all publicly traded firms in the U.S. over the 1990-1999 time period, I conduct a logit analysis which predicts which types of firms choose to adopt the dual-class structure.

Following the work of Demsetz and Lehn (1985), I hypothesize that dual-class structures will be more likely when a firm's control potential (i.e., the potential managerial benefit from control) is high or when the costs of maintaining managerial control under a one-share one-vote system are high. As my proxy for control potential, I use industry dummy variables. Following Demsetz and Lehn, I expect certain industries, for example the media industry, to have greater control potential owing to managerial preferences. Since it would be very costly for managers of large firms and firms with high return volatility to have a large undiversified stake in their firm, I expect managers of these firms to be relatively more likely to adopt a dual-class structure as a means of ensuring control while minimizing a manager's economic exposure to the firm's profit stream.

Consistent with my control potential hypothesis, I find that firms in the media industry (e.g., publishing, broadcasting, motion pictures, etc.) are significantly more

likely to have two classes of common stock. I also find that younger firms are more likely to have a dual-class structure. To the extent that managers of young firms are more likely to be founders who care about maintaining control, this can be viewed as additional evidence in support of the control motivation for selling two classes of stock. When I turn to the firm size and volatility measures, my results may be puzzling to some. My estimates suggest that the likelihood of having a dual-class structure is unrelated to firm size and negatively related to volatility. One potential explanation for this last result is that possible concerns about expropriation problems in highly volatile firms make it difficult to sell inferior voting common stock to outsiders.

The rest of the paper is organized as follows. In section 2 I discuss the related literature and explain where my paper fits in the context of these studies. In section 3 I discuss my data and sample selection criteria. In section 4 I report my main results, while section 5 concludes.

1.2 Existing Literature and Hypothesis Development

1.2.1 Existing Literature

Several existing studies have examined the issue of dual-class stocks. The majority of these studies examine the price differential between the superior voting shares and the inferior voting shares (e.g. Lease, McConnell, and Mikkelson (1983, 1984)). In general, the superior voting shares sell at a premium, and the time pattern and cross-

sectional variation in these premia are consistent with votes being worth more when the likelihood of a control contest is high (Zingales (1994, 1995)).¹.

A separate set of studies have examined the announcement returns when a firm announces that it is adopting a dual class structure (e.g., Partch (1987), Jarrell and Poulsen (1988), Cornett and Vetsuypens (1989), Chang and Mayers (1992), and Shum, Davidson and Glascock (1995)). These results are difficult to interpret, since announcement returns are likely to reflect both the value consequences of adopting a dual-class structure *and* information concerning the likelihood that a firm is acquired. Nevertheless, it is interesting that several of these studies indicate a positive market reaction, which suggests that there may be some benefits to the dual-class structure.²

In addition to these studies of stock price behavior, other studies have looked at the ownership composition of firms that have two classes of stock (e.g. DeAngelo and DeAngelo (1985) and Partch (1987)). As one would expect, these studies indicate that dual-class firms tend to have very concentrated inside ownership, and the percentage of votes held by management is typically significantly greater than the percentage of cash flows held by management. Two recent studies by Smart and Zutter (2001) and Grullon and Kanatas (2001) examine related issues by trying to understand the relationship between dual-class stock and other firm decisions.³

¹ Other studies explore the value of voting rights when a single investor holds a large voting block. Barclay and Holderness (1989) find that in private negotiations large blocks of stock trade at a premium to the exchange price, and they argue that such premiums reflect the value of private benefits of control.

² Theoretical work demonstrates that dual-class structures can either benefit or harm shareholders under different conditions. See, for example, Grossman and Hart (1988), Harris and Raviv (1988), Ruback (1988), Fischel (1987), Denis and Denis (1994) and Attari and Banerjee (1999).

³ See also Bohemer, Sanger and Varshney (1996) and Lehn, Netter and Poulson (1990).

Many studies have also looked at dual-class common stock in countries outside the US⁴. In general, the results are similar to those of the US.⁵

1.2.2 Relationship to Existing Literature

While these existing papers present many interesting findings, they do not answer the question as to why firms choose a dual-class structure in the first place. There is a common presumption that firms choose the dual-class structure to ensure managerial control. While this is almost surely true, it begs the question as to why some managers desire control and some do not. Presumably there are some economic tradeoffs that take place in the decision to adopt the dual-class structure. In particular, I would expect managers to weigh their desire for control with the penalties the market may assess to the inferior voting shares. This is very analogous to the issue raised by Demsetz and Lehn (1985) who ask whether patterns in managerial ownership are consistent with the various costs and benefits of control that ownership confers.

In this paper I try to answer this question by identifying which firms have dualclass shares and which do not. I then run logit models that attempt to predict this decision. In addition to understanding the cross-sectional variation in the decision to adopt the dual-class structure, I am able to address two related and interesting issues.

⁴ Outside the US, dual-class firms are quite common in developed countries or regions such as Italy, Sweden, Switzerland, Denmark, Finland, Netherlands, Belgium, Canada, Hong Kong, Japan, United Kingdom and Israel and also emerging economies such as Argentina, Brazil, Mexico, South Korea, Pakistan, Singapore and China.

⁵ See, for example, Jog and Riding (1986), Robinson and White (1990), and Foster and Porter (1993) on Canadian firms; Ang and Megginson (1989) on British firms; Levy (1983) on Israel firms; Horner (1988), Kunz and Angel (1996), and Caramanolis, Gibson and Tuchschmid (1996) on Swiss firms; Bergström and

First, I am able to assess for the first time the overall level of dual-class activity in the United States. This allows us to assess the economic importance of this type of corporate organization in the modern U.S. business environment. Second, my sampling procedures are designed to identify all instances of a dual-class structure – even cases where one of the two classes is not publicly traded. This distinguishes my study from previous studies, which generally restrict their attention to firms where both classes of common stock are listed on CRSP (e.g., Lease, McConnell, and Mikkelson (1983)). Thus, my study is more comprehensive and can for the first time, uncover the propensity for firms to sell one class of shares publicly and the other in the private markets.

1.2.3 Hypothesis Development

In explaining the cross-sectional variation in the choice to adopt a dual-class structure, I must identify the potential costs and benefits of this structure. One potential benefit, initially identified by Demsetz and Lehn (1985), is that managers may experience a large utility payoff from being identified as the controlling party in certain high-profile firms, for example media firms and sports firms. This line of reasoning predicts that I should generally observe strong industry trends in the use of dual-class shares, and specifically I should observe many dual-class structures for firms in the media industry (there are insufficient sports firms in my sample to identify a sports firm effect).

One way managers can ensure control under a one-share one-vote system is to purchase a majority of the shares. For large firms and firms with high volatility, the

Rydqvist (1990), and Liljeblom and Rydquist (1992) on Swedish firms; Zingales (1994) and Nicodano (1998) on Italian firms; Taylor and Whittred (1998) on Australian firms.

potential costs to the manager from pursuing such a policy in terms of the risk they bear could be prohibitive. One way to control the firm while minimizing the manager's economic exposure is to adopt the dual-class structure. This suggests that, ceteris paribus, dual-class structures should be *more likely* in large firms and in firms with high levels of volatility.

A final potential concern with dual-class shares is the valuation of the inferior voting shares. If managerial control has only benefits and no costs, the dual-class structure should not result in a penalty on the inferior voting shares. However, if managerial control results in potentially inefficient managerial behavior and/or expropriation of minority shareholders, this cost will enter into the decision to adopt the dual-class structure. To the extent that large firms and firms with high volatility are more subject to agency problems, these considerations would predict a *negative relationship* between the likelihood of a dual-class structure and firm size and volatility.

1.3 Data

My goal is to identify all dual-class firms chosen by a large set of publicly traded firms. To accomplish this objective, I initially identify the set of all firms from 1990-1999 listed on the Compustat tapes. After deleting limited partnerships, my sample contains 12,069 firms representing 71,679 firm years over the 1990-1999 period.

For the resulting sample, I searched the company name field in the Compustat database and identified all firms with a share class indicator included in the name (e.g., AEL Industries –CL A.) This yields 503 U.S. firms representing 2,888 firm-years over

the 1990-1999 period. Next, I turn to the CRSP tapes and identify all cases where the firm has two classes of common stock listed (e.g., AARON Rents Inc. has share classes A and B.) This procedure yields 666 firms representing 3480 firm years over 1990-1999. After merging the CRSP and Compustat databases (exact merging procedure available from the author), I found that there was substantial overlap in shares identified by the two procedures. After accounting for this duplication, my CRSP search procedure yields 183 new Compustat dual-class firms representing 868 firm-years.

The above procedure is incomplete in that it relies exclusively on the CRSP and Compustat methods for reporting share classes and company names. For example, I suspected that in many cases a firm may have one class of shares that is traded on a major exchange and another that is not. It is not clear that the CRSP and Compustat procedure outlined above will identify all of these cases. To identify other instances of dual-class shares, I exploit the fact that CRSP typically reports a firm's shares outstanding for a single-class of common stock, while Compustat reports the number of shares outstanding for all classes of common stock added together. Thus, for cases where these two numbers differ significantly, it is likely that the firm has a dual-class structure.

Using this line of reasoning, I identify every instance where these figures differ by more than 5%.⁶ I then searched through company financial statements, proxy statements, and the Dow Jones Interactive database to investigate whether the firm has multiple classes of common stock. Using the firm's 10-K statement, I looked up detailed information on the share classes that are outstanding. Firms that are authorized to issue

⁶ My choice of a 5% rule is arbitrary, but probably rather conservative. As I report below, most firms I identify as dual-class by this procedure have a much larger difference in the shares outstanding figure between Compustat and CRSP. Note that if I do miss a few firms, given that they were not flagged by my

two classes but only have one outstanding are classified as single-class firms. Only firms with outstanding shares with different voting rights are classified as dual-class firms. This procedure identifies 198 new dual-class firms representing 1022 firm years. The fact that I found a substantial number of new dual-class firms via this procedure suggests that procedures relying solely on CRSP and Compustat labeling are inadequate for identifying a comprehensive list of dual-class firms. Note that the median difference between the Compustat and CRSP share outstanding figures for the firms identified by this last procedure is 31.6%.

Given my sampling procedures, I believe that I have the most comprehensive database of dual-class listed firms ever assembled. The above procedures yield a total sample of 884 dual class firms (4778 firm-years) out of 12069 firms (71679 firm-years). Thus, the overall rate of adopting the dual-class structure appears to be approximately 4,778/71,679 = 6.67%. To compare my sample to previous samples in the literature, note that Cornett and Vetsuypens (1989) reported 271 dual class firms in 1962-1988 period identified by the Investor Responsibility Research Center (IRRC) and Olrog and Rickhamre (1992) estimated 4 percent of 7200 U.S. firms were dual class firms.

In Table 2 I report summary definitions for all of the variables used in the subsequent analysis. In Tables 3 and 4 I present univariate comparisons of some of the variables of interest for the single-class firms compared to the dual-class firms. I report these results both for the first year of the sample (1990) and the last year (1999). While most of these variables are fairly standard from the literature and are derived in a straightforward manner from the CRSP and Compustat tapes, a few variables are less

^{5%} rule, it is almost surely the case that one of the classes has very few shares outstanding and, therefore, is likely to be economically unimportant.

standard and should be discussed here. The variable Age is a proxy for the firm's true age and is measured by identifying the first year that the firm's stock has return data on the CRSP tape. I derive ownership data from the Compact Disclosure CDs. According to Anderson and Lee (1997), this is the most comprehensive database on inside ownership that is widely available. The variable *Inpct* is defined to equal the percentage of all common stock held by insiders (i.e., officers and directors).

As the t-tests in Tables 3 and 4 indicate, dual class listed firms appear to differ significantly from the single-class listed firms on many dimensions including working capital, the market to book ratio, sales growth, liquidity, the P/E ratio, and some of the volatility measures. As I report in Table 5, the percentage of dual-class firms is particularly high in the publishing, media and motion picture industry, and is particularly low for utility and financial firms.

1.4 Analysis and results

1.4.1 The Logit Model: Determinants of Dual-class Common Equity and their measurements

I use a logit model to regress the binary dependent variable *dual*, which indicates if a firm has dual-class stock, on predictors described below. Of the possible general forces affecting issuing dual-class common equity, four are important enough to merit investigation. One of these, size of the firm is not surprising. The second is the age of the firm, which is related to the size of the firm. The third is the profit potential from more effective control of the firm. This is referred to as control potential. The fourth is systematic regulation. Regulation imposes constraints on the scope and impact of shareholder decisions. The amenity potential of firms should be also included. In addition, financial ratios representing financial performance and market expectations should be considered as well.

Size

The size of firms that fit in the various product and input markets varies within and across industries. The larger the competitive viable size is, ceteris paribus, the larger is the firm's capital sources and the greater is the value of fractional ownership. The higher price of a given fraction of the firm should reduce the degree to which ownership is concentrated. This constitutes a legitimate reason for owners to issue dual class shares. So it is logical to expect a nontrivial effect of firm size on the feasibility of issuing dualclass shares. Risk aversion should reinforce the effect. On the other hand larger firms are less likely to be a take-over targets so take-over defenses such as dual-class common stock are needed less for large firms.⁷ I use assets, equity and their logarithms to proxy for size respectively.

Age

The age of the firm is closely related to firm size and ownership structure. A young firm is more likely to have a concentrated ownership structure or to maintain control by holding voting preferred classes of stock. As a firm grows, a larger amount of capital is required and it is harder for managers to maintain control. The use of dual-class stock as a defense against hostile takeovers becomes less important. Well-established

⁷ There were growing numbers of U.S. publicly traded firms issuing dual classes of common stock with differential voting rights in 1980s. The increased adoption of dual classes in 1980s parallels a takeover wave and increased adoption of other antitakeover defense mechanism such as the issuance of 'poison pills' (Jarrell and Poulsen, 1988). This is also the case in Sweden (Liljeblom and Rydqvist, 1992).

firms would face investor pressure due to the issue of transparency and liquidity of the stock if they keep dual-class shares. A reverse relationship between age and the possibility to issue dual-class shares is expected.

Control Potential

Control potential is the gain achievable through more effective monitoring of managerial performance by a firm's owners. Demsetz and Lehn (1985) believe that owners can influence the success of their firms and all outcomes are not completely random. Consequently, they assert that a firm's control potential is directly associated with the noisiness of the environment in which it operates. The noisier a firm's environment, the greater the payoff to owners in maintaining tighter control. Hence, noisier environments should give rise to more a concentrated ownership structure. It is of interest to see if the uncertainty also affects the decision to issue dual-class shares. The three measures of instability examined here are (1) firm-specific risk, as measured by the standard error of the estimate calculated from fitting the market model, (2) the standard deviation of annual accounting profit rates. I favor firm-specific risk as the factor most strongly associated with the type of instability for which control is most useful. I include both a firm-specific risk measure and a firm total risk measure.

Regulation

Systematic regulation restricts the options available to owners thus reduces the control potential. Regulation also brings monitoring and disciplining of the management of the regulated firms. Regulation should reduce the likelihood of issuing dual-class

shares or maintaining a highly concentrated ownership structure. Thus financial and utility industries are expected to be less likely to issue dual class stocks.

Amenity Potential

There is nonpecuniary income associated with the provision of leadership and the ability to deploy resources to suit one's personal preference. Two industries are well known examples for tighter control in order to indulge such personal preference. They are professional sports and mass media firms. To reach the consumption goals arising from the particular tastes of owners, it is necessary that owners are in a position to influence managerial decisions. Previous literature has documented concentrated ownership in these industries. The practice of dual-class shares might also be popular in these industries.

Financial performance related to take-over possibilities

Palepu (1986), and Comment and Schwert (1995) use several accounting and stock market performance measure to predict takeovers or the issuance of poison pills. They are sales growth rate, liquidity, debt ratio, and market to book value and price to earnings ratio. Since dual-class shares are a defense measure against takeovers, these ratios will be helpful in explaining the issuance of dual-class shares.

1.4.2 Results of Logit Analysis

The logit regression is covers the years from 1990 to 1999. The basic results are reported in Table 6-9.

Surprisingly, the size proxy (assets) generally is not statistically significant when assets, age, industry dummies and the standard deviation of monthly return are used as predictors. When the financial ratios such as sales growth, liquidity, debt ratio, market to book ratio and P/E ratio are included in the regressions, assets becomes statistically significant and the sign is negative. However, this is mainly because many small firms are dropped because of missing data on financial ratios the year before or the average of 4 years before. The size of the firms after the small firms are dropped is comparable to previous studies, and a similar result is generated: the assets factor is statistically significant and having large assets reduces the probability of having dual-class shares, ceteris paribus. It does not affect the significance of assets whether age is included in the regression or not. The results are similar using the logarithm of assets

I also use *equity*, the market value of equity to replace *assets* in the regression. *Equity* is statistically significant and the sign is negative whether the financial ratios are included or not (the regressions are not reported here.). The market value of equity might be a better measure in the sense that it is directly related to the size of wealth to maintain certain ownership levels.

Age of the firm is statistically significant and the sign is negative. However, it becomes only marginally significant or not significant when the five financial ratios are included in the regressions. The negative sign shows the young and immature firms are more likely to have dual-class shares.

The industry effect is clear. The dummy *publish* is significant and positive in all regressions, *braodcast* is statistically significant and positive in most regressions, *mo-picture* is significant and positive in all regressions. This is consistent with the notion that

tighter control is required to achieve the amenity potential. Another reason is that personal preference is important in such industries in which it is hard to predict outcome from managerial decisions. Managers are vulnerable and need tighter control and higher ownership to protect them.

The *utility* dummy is statistically significant and negative in all regressions. The *finance* dummy is statistically significant and negative in most regressions. This indicates the likelihood for systematically regulated industries to have dual-class shares is less than that for other firms. It is likely that utility firms are affected more by regulation than are financial firms.

Firm-specific risk is statistically significant in all the years except 1996 and negatively related to issuing dual-class shares. The result is the same if another measure of instability, total risk, is used in place of firm-specific risk. One would think this result is different from what is expected from the literature on ownership concentration. Here, however, I study the decision to have dual-class shares which is not equivalent to ownership concentration. Investors usually would prefer transparency in managerial decisions and the owner-management relationship. There is evidence that investors regard dual-class firms as an indicator of low levels of transparency. Firms with high instability would care more about transparency because investors require more transparency for such volatile stocks. The investors also often believe dual-class firms have much lower liquidity. Firms with high instability would also like to have high stock liquidity because investors require these firms to have high liquidity. A firm with high instability would prefer not to have dual-class shares although it tends to have a higher ownership concentration on average. In addition to linearly estimating the probability to

have dual-class shares, I also estimate this relationship in nonlinear form by adding the square of the instability measure. The squared value of the variables are positively related to probability to have dual-class shares, indicating at lower values of these variables the increase in the probability associated with given a decrease in instability diminishes.

The five financial ratios, both value of the year before and the average of 4 years before, are not statistically significant in general. The merger and acquisition market in the 1990s was very different from that in the 1980s. Hence, dual-class shares may now be less important as a defense against a takeover.

Insider ownership is closely related to dual-class shares. When insider ownership is included in the regression, it is statistically significant and positive as expected. High insider ownership increases the probability of having dual-class shares. I also regress insider ownership on *dual*, *size*, *age*, industry dummies and instability measures (not reported here). As expected, *dual* is statistically significant and positive, size is statistical significant and negative, age is statistical significant and negative, the utility dummy is statistically significant and negative, m-picture dummy is statistically significant and positive. However, both the publish and broadcast dummies are not statistically significant. The instability measure is statistically significant and positive which is consistent with the control potential hypothesis.

1.5 Conclusion

In this paper I examine the propensity of firms to issue two classes of common stock. I hypothesize that dual-class structures should be more common in situations

where a firm's control potential is high. In addition, if the dual-class decision is driven by managerial risk aversion and the fear of having a large undiversified economic stake in a firm, I expect the dual-class structure to be more likely in large firms and firms with high levels of volatility. Conversely, if agency problems are more severe in large and/or risky firms, the dual-class structure may be relatively less likely in these firms owing to a large penalty assessed by the outside market to the inferior voting shares.

To investigate these issues I identify the dual-class status of all Compustat listed firms over the 1990-1999 time period. I find that previous procedures to identify dualclass firms are biased towards under-reporting the frequency of the dual-class structure, and my sample reveals that approximately 6.67% of U.S. firms have adopted a dual class structure. Consistent with my control potential hypothesis, in my logit models I find that firms in the media industry (e.g., publishing, broadcasting, motion pictures, etc.) are significantly more likely to have two classes of common stock. I also find that younger firms are more likely to have a dual-class structure. To the extent that managers of young firms are more likely to be founders who care about maintaining control, this can be viewed as additional evidence in support of the control motivation for selling two classes of stock.

When I turn to the firm size and volatility measures my logit estimates suggest that the likelihood of having a dual-class structure is unrelated to firm size and negatively related to volatility. Thus, the diversification motivation for adopting the dual-class structure does not appear consistent with my data. However, the data do appear highly consistent with the hypothesis that agency problems or concerns about expropriation in

highly volatile firms makes it difficult to sell inferior voting common stock to outsiders in these environments.

CHAPTER 2

Dual-Class Stock, Firm Value, and Performance

2.1 Introduction

One way to solve the agency problem is via the use of incentive compensation and managerial ownership. Morck, Shleifer, and Vishny (1988) demonstrate empirically that managerial ownership may raise firm value by solving agency problems. However, their analysis indicates that there may be both costs and benefits to high managerial ownership. While high ownership may enhance a manager's incentive to act in shareholders interests, it may also entrench managers by giving them the ability to insulate themselves from outside market forces (e.g., unwanted acquisition attempts).

A dual class structure is an interesting way to keep control of the firm. There have been mixed arguments and evidence in the finance literature on whether dual class stocks are value enhancing or value decreasing. Harris and Raviv (1988), and Grossman and Hart (1988) show that one share one vote is optimal although dual class stock can benefit the shareholder under certain conditions in takeovers.

On the other hand, Attari and Banerjee (1999) argue that if the firm requires outside equity financing to undertake the project, it will find separation of the vote and dividend claim optimal in cases. The separation increases the manager's willingness to undertake all positive NPV projects. Managers in single class firm will give up some positive NPV projects requiring managers to issue equity to outsiders because they are worried about losing control of the firm and being replace by outsiders. DeAngelo and DeAngelo (1985) argue that a dual class structure can encourage managers to invest in firm-specific human capital which adds value to the firm.

In this paper I conduct an analysis of the value of firms that choose to adopt a dual-class share structure. While many existing studies have looked at the share price levels and behavior of dual-class stocks, no study has convincingly examined the relationship between dual class stock and firm value. No study has carefully examined the effect of ownership of cashflow rights and ownership of voting rights separately. Using a comprehensive sample of almost all publicly traded firms in the U.S. in 1995, I conduct an analysis that describes whether dual class firms under perform and the effect of dual class stock on firm value. My analysis also shows the relation between firm value and ownership of cashflow rights and voting rights separately.

Following the work of Morck, Shleifer and Vishny (1988), I hypothesize that managers in dual class firms can maintain control without worrying about being replaced and having less cash flow rights than voting rights, thus leading to sluggish management and unwise investment. Dual class structure makes it more likely that an inefficient manager will keep control than in one share/one vote. One share/one vote aligns the interests of managers more closely with shareholders. Thus I expect a lower Tobin's Q for a dual class firms compared with its industry peers.

On the other hand, according to the shareholder interest hypothesis, managers may want some form of takeover defense for surplus-protection and surplus-extraction which is in the interest of target shareholders. Perhaps a more common occurrence is that a dual class structure creates stability that can be beneficial. According to the under-

investment hypothesis developed by Attari and Banerjee (1999), the dual class structure mitigates the under-investment problem when managers have to issue equity to finance new projects. Thus, I expect a higher or similar Tobin's Q for a dual class firm compared with its industry peers if the shareholder interest hypothesis is true.

Overall, I find that dual class firms do not have a lower Tobin's Q than their peers of similar size in the same industry. However dual class firms that have both classes traded publicly have a lower Tobin's Q than single class firms and Tobin's Q increases as insider ownership of cash flow rights rises and declines as insider ownership of voting rights rises in the sub sample of dual class firms that have both classes traded and single class firms. On the other hand, dual class firms that have one class stock traded publicly do not have a lower Tobin's Q than single class firm.

The media industries are special in that the control potential is large as shown in my first essay. I find within media industries, dual class firms do not have a lower Tobin's Q than single class firm while within non- media industries dual class firms have a lower Tobin's Q than single class firms. In media industries, dual class firms pay less dividends than single class firms, the dividend payouts increases as insider ownership of cash flow rights rises and declines as insiders ownership of voting rights rises – there is no such relation in the non-media industries.

There is no evidence that dual class firms underperform single class peers on certain performance measures, such as Market-to-book equity ratio and Price/Earnings ratio. There is some evidence that dual class firms underperform single class peers on some other performance measures, such as ROA, EBIT, and operating cash flow. On

these measures, firm performance rises with insider ownership of cash flow rights and decreases with insider ownership of voting rights.

The rest of the paper is organized as follows. In section 2 I discuss the related literature and explain where my paper fits in the context of these studies. In section 3 I discuss my data and sample selection criteria. In section 4 I report my main results, while section 5 concludes.

2.2 Existing Literature and Hypothesis Development

2.2.1 Existing Literature

Many studies find that superior voting shares sell at a premium. They also examine the time pattern and cross-sectional variation in price differential between the superior voting shares and the inferior voting shares (e.g. Lease, McConnell, and Mikkelson (1983, 1984)). In general this premium is consistent with votes being worth more when the likelihood of a control contest is high (Zingales (1994, 1995))

Several existing studies have examined the issuance of dual-class stock. Many authors study the wealth effect of dual class recapitalization in attempt to find out the impact of a dual class structure on firm value. Partch (1987) finds nonnegative abnormal returns on the announcement of a recapitalization. Jarrel and Poulsen (1988) find significant negative returns while Cornett and Vetsuypen (1989) report positive abnormal returns⁸. These results are inconclusive since announcement returns are likely to reflect both the value consequences of adopting a dual-class structure *and* information

concerning the likelihood that a firm is acquired. Nevertheless, it is interesting that several of these studies indicate a positive market reaction, which is suggestive that there may be some benefits to the dual-class structure.

In addition to these studies of stock price behavior, other studies have looked at the ownership composition of firms that have two classes of stock (e.g. DeAngelo and DeAngelo (1985), Partch (1987)). As one would expect, these studies indicate that dualclass firms tend to have very concentrated inside ownership, and the percentage of votes held by management is typically significantly greater than the percentage of cash flows held by management.

2.2.2 Relationship to Existing Literature

While these existing papers present many interesting findings, they do not answer the question as to whether a dual class structure destroys or enhances firm value and performance. There is a well-known hypothesis that managerial control is inefficient since it leads to entrenchment. However, a firm's decision to have dual class stock may not be just to the interest of insiders. Presumably there are some economic tradeoffs that take place in the decision to adopt the dual-class structure. In particular, I would expect there to be a benefit to outsiders and to the firm as a whole to have dual class stock, thus firm value will not simply decline because of manageerial entrenchment.

In this paper I try to answer this question by identifying the separation of cash flow rights and voting rights of dual class firms. I then match dual class firms with their industry peers to compare firm value and performance. I run regressions to examine the

⁸ Also see Chang and Mayers (1992) and Shum, Davidson and Glascock (1995).

cross sectional variation of firm value and performance with different degrees of separation of cash flow rights and voting rights. In addition to understanding the relation between firm value and dual class stocks, I am able to address related interesting issues. I am able to assess for the first time the overall level of insider ownership in dual classes and the degree of the separation of cash flow rights and voting rights of dual class firms in the United States. This allows me to assess the economic importance of this type of corporate control in the modern U.S. business environment.

2.2.3 Hypothesis Development

In explaining the valuation and performance of the dual-class firms compared with single class firms, I must identify the potential costs and benefits of this structure. In general there is trade off between the cost and the benefits.

According to Morck, Shleifer, and Vishny (1988), the managerial entrenchment hypothesis claims that managers in dual class firms can maintain control without worrying about being replaced, thus leading to sluggish management and unwise investment. The dual class structure protects inefficient incumbent managers from a control contest. A dual class structure makes it more likely that an inefficient manager will keep control than in one share/one vote. One share/one vote aligns the interest of managers more closely with shareholders. If there is no benefit of control, there is substantial cost of dual class shares because outside investors would pay more for the equity issued by a single-class firm than for the equity issued by a dual-class firm. Thus, the managerial entrenchment hypothesis predicts a lower Tobin's Q for a dual class firm
compared with its industry peers. Dual class firms could also be outperformed by single class firms in other operating performance measures. The managerial entrenchment hypothesis also predicts that Tobin's Q declines with insider ownership of voting rights while increases with insider cashflow rights.

On the other hand, according to the shareholder interest hypothesis, managers may want some form of takeover defense for surplus-protection and surplus-extraction which is in the interest of target shareholders. Perhaps more important, a dual class stability which can be beneficial. First, according to the structure creates underinvestment hypothesis developed by Attari and Banerjee (1999), the dual class structure mitigates the under-investment problem when managers have to issue equity to finance new projects. Managers in a single class firm will give up the positive NPV projects because the equity issue will dilute their equity ownership thus gradually reducing their control. However, if a firm issues a restricted voting class of equity to outside investors then managers can undertake all positive NPV projects without dilution of voting control. Second, DeAngelo and DeAngelo (1985), Fischel (1987) and Denis and Denis (1994) argue that the reduced threat of displacement provides managers with incentives to invest in firm-specific human capital. Thus, the shareholder interest hypothesis predicts a higher or similar Tobin's Q for a dual class firm compared with its industry peers. Dual class firms also should not be outperformed by single class firms in other operating performance measures. Unlike the managerial entrenchment hypothesis, the shareholder interest hypothesis does not predict that Tobin's Q declines with insider ownership of voting rights while increases with insider cashflow rights.

2.3 Data

My goal is to identify all dual-class firms and their ownership chosen from a large set of publicly traded firms⁹. To accomplish this objective, I initially identify the set of all firms from 1990-1999 listed on the Compustat tapes. For the resulting sample, I search the company name field in the Compustat database and identify all firms with a share class indicator included in the name (e.g., AEL Industries -CL A.) Next, I turn to the CRSP tapes and identify all cases where the firm has two classes of common stock listed (e.g., AARON Rents Inc. has share classes of A and B.) The above procedure is incomplete in that it relies exclusively on the CRSP and Compustat methods for reporting share classes and company names. It is not clear that the CRSP and Compustat procedure outlined above will identify all of these cases. To identify other instances of dual-class shares, I exploit the fact that CRSP typically reports a firm's shares outstanding for a single-class of common stock, while Compustat reports the number of shares outstanding for all classes of common stock added together. I identify every instance where these shares figures differ by more than 5%.¹⁰ I then search through company financial statements, proxy statements, and the Dow Jones Interactive database to investigate whether the firm has multiple classes of common stock. The above procedures yield a total sample of 391 dual class firms out of 8286 firms in year 1995.

⁹ See more details in the first essay.

¹⁰ My choice of a 5% rule is arbitrary, but probably rather conservative. As I report below, most firms I identify as dual-class by this procedure have a much larger difference in the shares outstanding figure between Compustat and CRSP. Note that if I do miss a few firms, given that they were not flagged by my 5% rule, it is almost surely the case that one of the classes has very few shares outstanding and, therefore, is likely to be economically unimportant.

Given my sampling procedure, I believe that I have the most comprehensive database of dual-class listed firms ever assembled. I then search through the proxy statements, 10K filings, annual reports and Dow Jones Interactive to identify the number of votes per share for each class, number of shares outstanding for each class, the level of insider ownership, and CEO ownership and block holdings in each class of dual class firms in 1995. Insider ownership includes ownership of firm executives and board directors. Block holdings refers to any block of ownership more than 5% of the class. I use ownership data from Compact Disclosure for insider ownership of single class firm in 1995. According to Anderson and Lee (1997), this is the most comprehensive database on inside ownership that is widely available. I also identify whether the dual class firm trade both classes publicly or only trade one class publicly. The exchanges where the shares traded are also recorded.

In Table 1 I report summary definitions of all the variables I use in the subsequent analysis. In Table 2 I present univariate comparisons of some of the variables of interest for the single-class firms compared to the dual-class firms. I report these results the year 1995. While most of these variables are fairly standard from the literature and are derived in a straightforward manner from the CRSP and Compustat tapes, a few variables are less standard and should be discussed here. Ownsuper is the insider ownership in the superior voting class and Owninfer is the insider ownership in the inferior voting shares. Sharesuper is the number of shares outstanding in superior voting class and Shareinfer is the number of shares outstanding in the inferior voting class. Votesuper is the votes per share for the superior voting class and Voteinfer is the votes per share for the inferior voting class. The Voting Rights is insider ownership of voting rights of common stocks.

The insiders' voting rights are measured as a percentage of the total number of outstanding votes.

The Cashflow rights is insider ownership of common stocks based on monetary value and I calculate the insiders' implied common stock cash interest as the weighted average of their percentage holdings in the superior and inferior voting classes:

The variable SEPARATION is the separation index of ownership of voting rights and cashflow rights and SEPARATION = Voting Rights/Cashflow Rights. STDF is the standard error of the monthly stock market rates of return in the previous four years estimated from a market model in which the firm's monthly return in the previous four years is regressed on the average monthly return on a value-weighted market portfolio. The variable Age is a proxy for the firm's true age and is measured by identifying the first year that the firm's stock has return data on the CRSP tape.

As the t-tests in Table 2 indicate, dual class listed firms appear to differ significantly from the single-class listed firms on many dimensions including the market-to-book equity ratio, sales growth, liquidity, the P/E ratio, and some of the measures of volatility. As I report in Table 3 and also in the first essay, the percentage of dual-class firms is particularly high in the publishing, broadcasting and motion picture industry, and it is particularly low for utilities and financial firms.

2.4 Analysis and Results

2.4.1 The Separation of cash flow rights and voting rights

Table 4A document insider ownership in each of the two classes. (The table does not include the firms with more than two classes of common stocks.) Table 4B reports the insiders' voting rights and cash flow rights from common stocks. Insiders include executive officers and board directors. Ownership includes shares owned by officers and directors, trusts for their benefactors and foundations or corporations they control. The level of insider ownership in each class is hand collected from proxy statements, 10K filings and annual reports.

Insiders in dual class firms hold a substantially higher percentage of the stock with more votes than of the stocks with fewer votes. In Table 4A the mean insider ownership in the superior voting class is 63.73% and the mean insider ownership in the inferior voting class is 21.65%. The t-statistic for equal means is 20.81. Insider ownership in the superior voting shares is substantially greater than that of inferior voting shares. The insiders hold a median of 71.23% in the superior voting class while they hold a median of 14.60% in the inferior class. The Wilcox sign-rank test for equal medians is 13.51. Both the mean insider ownership and median insider ownership are significantly higher in the superior voting class than in the inferior voting class. In Table 4.B., the insiders hold a mean of 34.65% of cash flow rights from common stock and a mean of 54.80% of voting rights. The t-statistic for equal means is 17.92. The insiders hold a median of 32.25% of cash flow rights from common stock and a median of 60.58% of

voting rights. The Wilcox sign-rank test for equal medians is 12.59. Both the mean and median insider cash flow rights are significantly lower than those of voting rights. The mean SEPARATION Index is 1.875 and the median SEPARATION Index is 1.500.

Table 4C shows the holdings of CEOs in the two classes. The mean CEO ownership in the superior voting class is 34.75% and the mean CEOs' ownership in the inferior voting class is 9.94%. The t-statistic is 13.53. The CEOs hold a median of 25.05% in the superior voting class while they only hold a median of 2.2% in the inferior class. The Wilcox sign-rank test is 11.28. Both mean CEO ownership and median CEO ownership are significantly higher in the superior voting class than in the inferior voting class. Table 4F shows the holdings of the largest block shareholder in the two classes. The mean largest blockholder's ownership in the superior voting class is 60.13% and the mean largest blockholder's ownership in the inferior voting class is 27.25%. The largest blockholder holds a median of 56.67% in the superior voting class while they only hold a median of 19.29% in the inferior class.

The voting rights and cash rights of insiders in firms in the media industry are compared with those in non-media industries in Table 4D. Insiders hold similar mean and median ownership of voting rights and cash flow rights in media industries and nonmedia industries. There is no significant difference found. The separation of voting rights and cash flow rights are similar across industries with different likelihood to issue dual class stock (or different control potential.)

Table 4E reports the voting rights and cash flow rights in firms that have both classes publicly traded and have only one class traded publicly. In both sub-samples the insiders in dual class firms hold substantially higher levels of ownership of voting rights

compared to cashflow rights. The insiders in firms with one class traded publicly have a mean ownership of voting rights of 57.0%, significantly higher than their mean ownership of cashflow rights of 34.3%. The insiders in firms with one class traded publicly have a median ownership of voting rights of 63.8%, significantly higher than their median ownership of cashflow rights of 31.4%. The insiders in firms with both classes publicly traded have a mean ownership of voting rights of 49.2%, significantly higher than their mean ownership of cashflow rights of 33.0%. The insiders in firms with both classes traded publicly have a median ownership of cashflow rights of 33.0%. The insiders in firms with both classes traded publicly have a median ownership of voting rights of 32.6%.

A more interesting issue is whether dual class firms with both classes traded publicly have less separation of voting rights and cash flow rights since the voting preferred stocks can be purchased in the market by outsiders. The insiders in firms with one class traded publicly have a mean ownership of voting rights of 57.0%, significantly higher than a mean of 49.2% for firms with both classes traded publicly, t-statistic = 1.963. The insiders in firms with one class publicly traded have a median ownership of voting rights of 63.8%, significantly higher than a median of 52.2% for firms with both classes traded publicly, Wilcox sign-rank test = 1.963. Insiders in the two types of dual class firms have about same mean and median ownership of cash flow rights. The insiders in firms with one class traded publicly have a mean ownership of a median of 34.3% and a median of 31.4%. The insiders in firms with both classes traded publicly have a mean ownership of cashflow rights of 33.0% and a median of 32.6%. By letting both classes publicly trade the dual class firms do have a little less control. However, these dual class firms still hold a median of 52.2% voting rights compared to a median of

32.58% of cash flow rights. Letting the superior voting shares trade publicly does not significantly reduce insider control of the firm. Insiders still hold a large amount of those superior voting shares, although they appear to sell out a little portion.

2.4.2 Matching of dual class firms with single class firms

My major goal is to compare the value and performance of dual class firms with single class firms. It is well established that corporate governance affects firm value. Gompers, Ishii and Metrick (2001) show corporate governance is highly correlated with firm value and stock returns. The authors excluded dual class firms from their sample. In this section I use a matching approach to study whether the variation in a firm's decision to issue dual class stock is related to cross sectional differences in firm value and performance. As is well known, industry and size are the major factors in firm value and performance. I match each dual class firm with a firm closest in size (total assets) in the same industry. I use the two-digit sic code as the proxy for industry. Table 5 documents the dual class firms' value and performance measure and those of matching firms.

My valuation measure is Tobin's Q, which has been used routinely for this purpose in corporate governance studies. I follow Kaplan and Zingales (1997) and compute Q as the market value of assets divided by the book value of assets, where the market value of assets is computed as book value of assets plus the market value of common stock less the sum of the book value of common stock and balance sheet deferred taxes. Perfect and Wiles (1994) and Chung and Pruitt (1994) show that the improvements obtained from a more involved computation of Q are fairly limited. I also include market-to-book equity ratio in the comparison. Operating performance measures include the Price/Earning ratio, Return on assets, cash flow (Operating Cash Flow/Total Assets), EBIT (EBIT/Total Assets), and the Dividend Ratio (Cash Dividends/Total Equity).

Table 5 shows that overall there is no strong significant difference between dual class firms' value and performance and those of matching single class firms, although dual class firm have a lower median Tobin's Q in the next year (1996) and a lower Market-to-Book equity ratio than single class matching firms. The dual class firms perform as well as single class firms. This is not consistent with the managerial entrenchment hypothesis. Insiders do not use a dual class structure to entrench inefficient management.

Table 6A reports the performance of the sub-sample of dual class firms that have both classes publicly traded compared to the matching firms. Table 6B reports the performance of the sub-sample of dual class firms that have only one class traded publicly compared with the matching firms. Surprisingly, I find that dual class firms with both classes traded publicly actually under-perform their single-class peers and dual class firms that have only one class traded perform as well as their single-class peers. Dual class firms with both classes traded have a mean Tobin's Q of 1.454. This is significantly lower than the matching firms' mean of 1.813 (t statistics= -1.650). Dual class firms with both classes traded have a median Tobin's Q of 1.146 significant lower than matching firms' median of 1.396 (statistically significant at 1% level). Dual class firms with both classes traded publicly also have a significantly lower median Tobin's q in the next year (1996). Besides Tobin's q, dual class firms with both classes traded publicly also have a significantly lower median Market-to-Book equity ratio, a significantly lower median investment level and a significantly lower mean dividend payout ratio.

As shown in the previous section, dual class firms with both classes traded publicly have a lower degree of separation of voting rights and cash flow rights than dual class firms that have only one class traded publicly. If the managerial entrenchment hypothesis were true, we would expect dual class firms that have both classes traded publicly to perform better than dual-class firms that have only one class traded relative to their matching single class firms. My results show that the higher degree of separation of ownership of voting rights and cashflow rights does not destroy firm value. This is not consistent with the managerial entrenchment hypothesis or there is something more than entrenchment.

One potential benefit, initially identified by Demsetz and Lehn (1985), is that managers may experience a large utility payoff from controlling firms with high control potential or amenity potential and/or for being identified as the controlling party in certain high-profile firms, for example media firms and sports firms. This line of reasoning predicts that I should generally observe strong industry trends in the use of dual-class shares, and specifically I should observe many dual-class structures for firms in the media industry. My findings in the first essay are consistent with these predictions. If control is also beneficial to outside shareholders, a further prediction is that dual class firms in media industries should not have a lower value than single class firms while dual class firms in other industries may have a lower value. Table 7A reports the performance of the sub-sample of dual class firms in media industries, compared with the matching firms. Table 7B reports the performance of the sub-sample of dual class firms in non-

media industries compared with the matching firms. Media industries includes SIC code from 2700 to 2799 (publishing), from 4800 to 4899 (broadcasting) and 7800 to 7899 (motion pictures). All other industries (SIC code from 0100 to 9999) are defined as nonmedia industries. I find that dual class firms in media industries actually do not underperform their single-class peers. There is some evidence that dual class firms in nonmedia industries do not perform as well as their single-class peers. Dual class firms in non-media industries have a next-year median Tobin's Q of 1.356. This is statistically significantly lower than matching firms' median of 1.447. Dual class firms in non-media industries do not have Price-Earning ratios significantly different from their single class peers. Dual class firms in the media industries have a median Price-Earning ratio of 17.75. This is significantly higher than the matching firms' median of 0 (statistically significant at the 5% level). Dual class firms in the media industries have a mean Price-Earnings ratio of 38.06. This is significantly higher than matching firms' mean of 13.83 (t-statistic = 1.819). Dual class firms in media industries also have a significantly higher mean and median a-year-forward Price-Earning ratio than matching firms while nonmedia dual class firms do not. Dual class firms in media industries have a significantly higher mean EBIT/Total Assets ratio than matching firms while dual class firms in nonmedia industries do not have an EBIT/Total Assets ratio significantly different from the matching firms. Dual class firms in media industries also have a significantly higher mean Operating Cashflow/Assets ratio in the following year (1996) than matching firms while dual class firms in non-media industries do not have a Operating Cashflow/Assets ratio significantly different from the matching firms.

If the managerial entrenchment hypothesis were true, we would expect that dual class firms in both media industries and non-media industries under-perform their matching single class counterparts. My results show that the dual class firms in media industries do not under-perform the matching single class firms while the dual class firms in non-media industries somewhat under-perform their peers. This is not consistent with the managerial entrenchment hypothesis. The control obtained by the dual class structure is not harmful to firm value in industries where the control potential is high.

2.4.3 Cross sectional regression of Tobin's Q

2.4.3.1 Empirical regression models

I use several regression models to study the effect of a dual class structure and separation of voting rights and cash flow rights on firm value. I first estimate

$$Q = a + b DUAL + c W + e$$
(1)

where DUAL is a dummy variable equal to 1 for dual class firms and 0 for single class firms. W_i is a vector of firm characteristics. As elements of W_i , I follow Gompers, et al., (2001) and Shin and Stulz (2000) and use the log of the book value of assets, the log of firm age and a dummy variable for each of the four-digit SIC codes. The book value of assets, age, and two-digit SIC code are also used as a robustness check. It is obvious that industry, size, and age are critical control variables in regression of Q. My empirical results below show that stock volatility is also an important control variable.

Regression with the dummy variable DUAL can give an estimate of the effect of a dual class structure on firm value. More specifically I can estimate the effect of separation of voting rights and cash flow rights on Q. So I estimate

$$Q = a + b DUAL + c CASH + d W + e$$
(2)

and

$$Q = a + b VOTE + c CASH + d W + e$$
(3)

and

$$Q = a + b SEPARATION + C W + e$$
(4)

Where CASH is the cash flow rights of insiders and VOTE is the voting rights of insiders. Separation index equals VOTE divided by CASH.

A piecewise regression may be desirable as in Morck, Shelifer and Vishny (1988). Q may not be a monotonic function of insider ownership of voting rights and cash flow rights, but a piece wise function of insider ownership. I use the following variable to estimate and report my piece wise linear regressions:

Vote.0to10 = insider ownership of voting rights if insiders ownership
$$< 0.10$$

=0.10 if insiders ownership of voting rights if insiders ownership ≥ 0.10

Vote.OVER10=0 if insider ownership < 0.10

= insider ownership of voting rights minus .10 if insider ownership of voting rights ≥ 0.10

Cash.0to75 = insider ownership of cash flow rights if insider ownership of cash flow rights < 0.75

= 0.75 if insider ownership of cash flow rights if insider ownership of cash flow rights ≥ 0.75

Cash.OVER75=0 if insider ownership of cash flow rights < 0.75

= insider ownership of cash flow rights minus .75 if insider ownership of cash flow rights ≥ 0.75

The theoretical justification for the piecewise regressions and these particular turning points is not very strong. Morck, Shleifer and Vishny (1988) use 5% and 25% as turning points for board ownership which combines ownership of voting rights and cash flow rights. My analysis is different from Morck, Shleifer and Vishny (1988) in that a dual class structure allows me to separate the insider ownership of voting rights from the insider ownership of cash flow rights. It is not well justified that there is a 5% and 25% turning point for insider ownership of cash flow rights. I use a turning point of 75% for ownership of cash flow rights in attempt to describe the diminishing incentives from the ownership of cash flow rights when the ownership is high enough. I use 10% as a turning point for ownership of voting rights since an ownership of voting rights less than 10% does not confer significant power while an ownership of voting rights higher than 10% would give insiders significant power. For regressions using other turning points (not reported here) I define the variables analogously. The results are either similar or hard to justify.

I estimate cross sections of (1) - (4) using data of 1995. I also use this procedure when studying other performance measures in the next a couple of sections. I hand collect the 1995 ownership data of dual class firms from proxy statements, 10 K filings, and annual reports. The single class firms' ownership data is from Compact Disclosure which is very reliable for single class firms according to Anderson and Scott (1997).

2.4.3.2 Regression of full sample

Table 7 summarizes the regression results based on the above regression models for the full sample. All but one regression reports no statistically significant relationship between DUAL dummy (equals one if a dual class firm, zero otherwise) and Q, between insider ownership of voting rights and Q or between voting rights-cashflow rights SEPERATION Index and Q. Hence, there is no convincing evidence that a dual class structure diminishes firm value. This is not consistent with the managerial entrenchment hypothesis.

I also do a robustness check. To deal with the possibility that a variety of factors can jointly affect board ownership and Q, and thus induce a spurious correlation between them, I control for additional variables in the regression. Besides size, age, and industry effect, R&D expenditure and advertising expenditure may be measures of intangible assets that affect Q. Consequently, I include RD/ASSETS (R&D Expenses divided by Total Assets) and ADV/ASSETS (Advertising Expenses divided by Total Assets) in the regression. The results are similar if I exclude financial firms with SIC code in the range of 6000-6999 and utility firms with SIC code in the range of 4900-4999, which is the practice in many corporate finance studies.

I regress on a subsample of the larger firms, the results, not reported here, are similar to Morck, Shleifer and Vishny (1988). Their sample is composed of Standard & Poor 500 firms which are the largest firms. So my full sample results are different from their results because my sample contains all the smaller firms in Compustat.

2.4.3.3 Dual class firms with both classes traded vs. dual class firms with only one class traded

Table 9 summarizes the results for regressions of the subsample with dual class firms that have both classes traded publicly and the dual class firms that have one class traded publicly. I also include a stock volatility measure, RD/ASSETS and/or ADV/ASSETS in the regression. The results are similar if I exclude financial firms with SIC code in the range of 6000-6999 and utility firms with SIC code in the range of 4900-4999. The first couple of columns show that dual class firms with both classes traded publicly have a lower q value. In the third and fourth column, the DUAL dummy (1 if dual class firms, 0 otherwise) is significantly negative. More striking, given the regression equation (3), the sixth column show that the insider ownership of voting rights is negatively related to Q, while the insider ownership of cashflow rights is positively related to Q. For a dual-class firm that has both classes traded publicly, everything else held constant, a 10 percentage point increase in inside ownership of cash flow rights will increase Tobin's Q by 0.73, while a 10 percentage point increase in inside ownership of voting rights will decrease Tobin's Q by .58. The coefficients are statistically and economically significant.

Table 9 also shows that dual class firms with one class traded publicly do not have a lower Tobin's Q. There is an interesting question as to why dual class firms with both classes traded publicly are valued lower. The difference between the two types of dual class firms is that the firms that have both classes traded publicly, insiders can sell their superior voting shares in the market. Insiders in the firms with one class traded publicly cannot sell their shares easily. As these firms' proxy statements show, the shares of the privately held class usually are not transferable or will be converted to shares of a publicly traded class upon transfer, or are transferable upon permission of the board. Since they may not be able to bail out by selling shares if the firms are in financial trouble, the insiders in these firms have a commitment to the success of the firm. So there is a signal of interest alignment by holding a class of stocks that cannot be traded publicly.

As is well known, there is a difference between prices of the two classes of stock when both are traded. When dual class firms have both classes traded publicly, the shares with more votes usually are traded at a higher price than the shares with fewer votes. The relative premium investors are willing to pay for additional votes is called a voting premium. As documented by Zingales (1995), the voting premium on the votingpreferred class of stock on average is 10.5% (the median is 3%). However, there are other differences between the two classes that affect the relative price of shares between the two classes, such as difference in dividends, conversion rights and liquidity. Following Zingales (1995), the nominal voting premium is given by:

 $VP_{it} = \beta_0 + \beta_1(\Phi/\pi)_{it} + \beta_2 DIV_{it} + \beta_3 CONV_{it} + \beta_4 SIZE_{it} + \beta_5 LIQUIDITY_{it} + \varepsilon_{it}$ (5) where VP is the nominal voting premium. (Φ/π) proxies for the voting power and β_1 represents the real voting premium. DIV is a dummy variable equals one for those firms in which inferior voting shares received a larger dividend. CONV is a dummy variable that takes a value of one for firms in which the superior voting shares are convertible into inferior voting shares at the holder's will. SIZE is the total market capitalization of stock. LIQUIDITY is the relative stock liquidity difference of the two classes. If equation (6) were used to price the superior voting shares not traded publicly, I would expect a negative or non-positive nominal premium. Because there is a large liquidity premium for voting inferior shares over voting superior shares if the liquidity of shares that cannot be transferred easily is assumed to be close to zero. Therefore, insiders in dual class firms with one class traded publicly do sacrifice the value of shares they hold for keep the voting control.

This also leads me to suspect that the motivation for dual class firms to let the superior voting shares trade publicly is to increase the liquidity of the shares insiders previously held privately thus increasing the value of their holdings and diversifying the risk they face.

2.4.3.4 Dual class firms in media industries vs. dual class firm in non-media industries

Table 10 summarizes the results for the sub-sample of firms in media industries and the sub-sample of firms in non-media industries. The first few columns show that dual class firms in media industries do not have lower q values than their peers. All regressions report no statistically significant relationship between the DUAL dummy and Q, between insider ownership of voting rights and Q, or between voting rights-cashflow rights SEPERATION Index and Q. Hence, there is no convincible evidence that a dual class structure harms a media firm's value. Next, the regressions of the sub-sample of dual class firms in the non-media industries show that the non-media dual class firms have lower Tobin's Q values than their single class peers. All else equal, a dual class firm in a non-media industry has a Tobin's Q which is 0.633 lower than that of a single class firm. However, no statistically significant relationship between Tobin's Q and insider ownership of voting rights is reported. The results are similar if I exclude financial firm with SIC code in the range of 6000-6999 and utility firms with SIC codes in the range of 4900.

One potential benefit, initially identified by Demsetz and Lehn (1985), is that managers may experience a large utility payoff from being identified as the controlling party in certain high-profile firms, for example media firms and sports firms. This line of reasoning predicts that I should generally observe strong industry trends in the use of dual-class shares, and specifically I should observe many dual-class structures for firms in the media industry. My findings in the first essay are consistent with these predictions. The results in this section show that the dual class firms in the industries with the greatest control potential actually have the same value as single class firms in the same industries. One possibility is that there is not a traditional managerial entrenchment problem in media industries. However the results also show that there is a managerial entrenchment problem in non-media firms. Therefore, a more plausible explanation is that the control by insiders has certain benefits to the firm as a whole. In media industries, the product, business, and management are highly personalized. The business decisions frequently are determined by the personal tastes of management. For example, filmmaking, book and newspaper publishing and broadcast networks, depend more on personal style instead of mechanical operation. Personal creativity is key to success. Since it is hard to evaluate such stylized management, business and managerial decisions are challenged more frequently than in other industries. Without certain control, personalized or stylized business and management will not be able to be executed by insiders. The media firms

need to have constant stylized management and business strategy to survive. The dual class structure or high ownership of voting rights provides a relatively "stabilized" space for the managers to deliver and talented artists, filmmakers, and broadcasters to perform. This effect can be called managerial stabilization. The overall effect of management entrenchment and managerial stabilization on a media firm's value resulting from dual class stock can be insignificant because of a counteracting effect.

2.4.4 Other Performance Measures

Following similar reasoning, I also run regressions to determine if dual class firms underperform single class firms on other performance measures. The empirical specification is similar to equations (1) - (4).

An alternative measure of performance is market-to-book equity ratio, market value of common stock divided by book value of common stock. The market-to book ratio is not as informative as Tobin's Q. However, it still may be a useful measure of firm performance. Table 11 summarizes the regression results. There is no evidence in the regression of the full sample that dual class firms underperform their single class peers on market-to book equity ratio. The regression on the sub-sample of dual class firms that have two classes traded publicly and sub sample of firms in media industries yield same results. Overall, the results are inconsistent with the managerial entrenchment hypothesis. Table 12 summarizes the regression results of Price/Earning ratio. The regression results in all of the samples do not provide any evidence of underperformance of dual class firms. Note the R^2 is very low for all of the regressions.

Table 13 documents results of the regression of return on assets (ROA) in the full sample and sub-sample of dual class firms only. There is some evidence that dual class firms underperform the single class peers as measured by ROA. The coefficients of insider ownership of cash flow rights are positive and significant. ROA increases with insider ownership of cash flow rights. There is some evidence that ROA decreases with insider ownership of voting rights. In the regression with a piecewise specification for insider ownership of voting rights, ROA rises sharply as insider ownership increase from 2ero to 5%, ROA then decreases rapidly as insider ownership increases from 5% to 25%. There is some evidence that ROA decreases less rapidly as insider ownership of voting rights increases less rapidly as insider ownership of voting rights increases above 25%. This is consistent with some studies in that a low insider ownership of voting control of 0-5% is beneficial to firm performance.

Table 14 demonstrates the results of the regression of EBIT/ Assets in the full sample and the sub-sample of dual class firms only. There is significant evidence that dual class firms underperform their single class peers on the aspect of EBIT/Assets. The coefficients of insider ownership of cash flow rights are positive and significant. EBIT/Assets increases with insider ownership of cash flow rights. There is also evidence that EBIT/Assets decreases with insider ownership of voting rights. In the piecewise regression for insider ownership of voting rights, EBIT/Assets rises rapidly as insider ownership increases from zero to 5%, EBIT/Assets then decreases less rapidly as insider

ownership increases from 5% to 25%. There is some evidence that EBIT/assets decreases less rapidly as insider ownership of voting rights increases above 25%.

Table 15 demonstrates the results from the regression of Operating Cash Flow/ Assets in the full sample and the sub-sample of dual class firms only. There is significant evidence that dual class firms underperform their single class peers on the aspect of Cash Flow/Assets. The coefficient of insider ownership of cash flow rights is positive and significant. Cash Flow/Assets increases with insider ownership of cash flow rights. There is also evidence that Cash Flow/Assets decreases with insider ownership of voting rights. In the regression with a piece wise specification for insider ownership of voting rights, Cash Flow/Assets rises rapidly as insider ownership increases from zero to 5%, Cash flow/Assets then decreases less rapidly as insider ownership increases from 5% to 25%. There is some evidence that Cash Flow/assets decreases less rapidly as insider ownership of voting rights increases above 25%.

In summary, there is no evidence that dual class firms underperform single class peers on certain performance measures, such as Market-to-book equity ratio and Price/Earnings ratio. There some evidence that dual class firms underperform their single class peers on some other performance measures, such as ROA, EBIT, and operating cash flow. Of these measures, firm performance rises with insider ownership of cash flow rights and decreases with insider ownership of voting rights.

2.4.5 Dividend policy in dual class firms

Table 7A shows that dual class firms in media industries pay less dividends than the matching single class firms while dual class firms in non-media industries do not pay less dividends. I use various regression models to study the factors that affect firm dividend payouts. I first estimate

$$DIVIDEND/CAPITAL = a + b DUAL + c W + e$$
(6)

where DUAL is a dummy variable that equals 1 for dual class firms and 0 for single class firms. Wi is a vector of firm characteristics. As elements of W, I use the log of the book value of assets, the log of firm age, Operating Cashflow/Assets, Tobin's Q and dummy variables for each of the two-digit SIC codes. EBIT/Assets, Net Income/Assets, Liquidity, Debt ratio, the book value of assets, and age are also used as a robustness check. More specifically, I can estimate the effect of the separation of voting rights and cash flow rights on dividend payout. I estimate

$$DIVIDEND / CAPITAL = a + b DUAL + c CASH + d W + e$$
(7)

and

$$DIVIDEND / CAPITAL = a + b VOTE + c CASH + d W + e$$
(8)

where CASH is the ownership of cash flow rights of insiders and VOTE is the ownership of voting rights of insiders.

Table 17 reports the regression results. Concerning firms in the media industries, dual class firms pay significantly less dividends (Dividends/Capital ratio) than single class firm, as the coefficient for dummy Dual is -0.028 (t statistic = -3.846). In non-media industries, dual class firms do not have a lower dividend payout than single class firms. More interestingly, in a media firm, insider ownership of voting rights is positively related to Dividends/Capital ratio while insider ownership of cashflow rights is positively related to Dividends/Capital ratio. For a media firm, a 10 percentage point increase in insider ownership of voting rights decreases the Dividend/Capital ratio by .0073, while a 10 percentage increase in insiders ownership of cashflow rights decreases the Dividend/Capital ratio by 0.0062. This also proves that control potential is high in media industries in that the insiders can manipulate the dividend payout without penalty on firm valuation – as shown earlier in media industries dual class firms do not have a different Tobin's Q from single class firm. The managers will pay out more dividends if they have a larger stake in dividend cash flow rights. The insiders will pay out less dividends if they have more control in voting rights so they can have more cash flow to spend. From this angle, the dual class structure does provide the necessary condition for entrenchment. However, dual class firms in media industries do not have lower values.

The results are similar if I exclude financial firms with SIC codes in the range of 6000-6999 and utility firms with SIC codes in the range of 4900.

2.5 Conclusion

In this chapter I examined the relationship between firm value and dual class common stock. If the dual class structure protects inefficient incumbent managers from control contest as the managerial entrenchment hypothesis states, a prediction is a lower Tobin's Q for a dual class firm compared with its industry peers. On the other hand, according to the shareholder interest hypothesis, a dual class structure creates a level of stability that can be beneficial by mitigates the under-investment problem or encouraging human capital investment. If this were true, the prediction is that dual class firms will not have a lower Tobin's Q.

To investigate these issues I identify the dual-class status and insider ownership of voting rights and cashflow rights of all Compustat listed firms in 1995. Consistent with the shareholder interest hypothesis, I find that overall that dual class firms do not have a lower Tobin's O than single class firms. However, dual class firms that have both classes traded publicly do have a lower Tobin's Q than single class firms and Tobin's Q increases as insider ownership of cash flow rights rises and declines as insider ownership of voting rights rises - only valid in this sub-sample. I also find that dual class firms that have one class of stock traded publicly do not have lower a Tobin's Q than single class firms. Consistent with the shareholder interest hypothesis, I find within media industries, dual class firms do not have a lower Tobin's Q than single class firm. But within nonmedia industries, dual class firms have a lower Tobin's Q than single class firms. Overall the findings suggest that dual class stock is beneficial if there is strong managerial commitment to the firm or there if there is a strong need for managerial stabilization. There is managerial entrenchment problem when the dual class firms have both classes traded publicly or when non-media firms issue dual class stock.

Besides Tobin's Q, there is no evidence that dual class firms underperform their single class peers on certain performance measures, such as Market-to-book equity ratio and Price/Earnings ratio. There is some evidence that dual class firms underperform their single class peers on some other performance measures, such as ROA, EBIT, and operating cash flow. Of these measures, firm performance rises with insider ownership of cash flow rights and decreases with insider ownership of voting rights.

In media industries, dual class firms pay less dividends than single class firms, the dividend payout increases as insider ownership of cash flow rights rises and declines as insider ownership of voting rights rises. The fact that managers can manipulate dividend payouts demonstrates the large control potential in media industries.

CHAPTER 3

Dual-class Stock, Investment and Cash Flow

3.1 Introduction

Many studies show that internal capital is an important determinant of investments. Following Fazzari, Hubbard, and Peterson (1988), several studies demonstrate that cash flow is a more important determinant of investment for firms that are most likely to be constrained by internal capital when they invest.¹¹ Lamont (1997) and Shin and Stulz (1998) provide evidence from another angle. Investments of segments of a diversified firm are dependent on cash flow from other segments. In general this literature provides evidence that when firms invest there is a significant difference between the cost of internal capital and external capital. However, the source of the difference in the cost of capital has not been fully explained.

Myers and Majluf (1984) and Greenwald, Stiglitz, and Weiss (1984) show that there is a premium on external funds arising from contracting and information problems. According to this hypothesis, the relationship between liquidity and investment is typically a symptom of underinvestment. Firms pass up some positive NPV projects because of the cost of external capital. An alternative hypothesis is agency problem oriented. The free cash flow theory developed by Jensen (1986) and Stulz (1990) shows that managers overspend internal capital on unprofitable projects. The reality is not that

¹¹ For empirical evidence on the two explanations see Vogt (1994), Carpenter (1995), Lopez-de-Silanes and Shleifer (1994) and Jung, Kim, and Stulz (1996).

external capital is too expensive but is that internal capital is too inexpensive. The . relationship between cashflow and investment is a symptom of overspending.

It is an important issue to distinguish the two explanations for empirical relevance. Many previous empirical tests do not yield conclusive results.¹² Hadlock (1998) examines how managerial ownership, or more generally the alignment of the interests between managers and shareholders, affects the sensitivity of investment to cash flow. Hadlock (1998) finds a nonlinear relationship between insider shareholdings and the sensitivity of a firm's investment to its cash flow. As insider holdings increase from zero, investment-cash flow sensitivities rise sharply. This relationship weakens at high levels of insider ownership. Investment-cash flow sensitivities decrease slowly with insider holdings after a certain point. In my dual class firm sample insider ownership of voting rights and cash flow rights is separated. This separation provides an approach to study the entrenchment effect on investment-cash flow problem.

3.2 Hypothesis Development

The free cash flow hypothesis advanced by Jensen argues that managers have a propensity to overinvest internal cash. Managers are not the owners of the firm and the interests of mangers and shareholders are not perfectly aligned. Managers may reap personal benefit from overinvesting without fully internalizing the costs of the investment decision borne by outsider shareholders. If a firm has free cash flow, managers will spend a large fraction of the firm's internal funds. If a firm does not have free cash flow

¹² See Hoshi, Kashyap, and Scharfstein (1991), Oliner and Rudebusch (1992), Whited (1992), Fazzari and Peterson (1993), Himmelberg and Peterson (1994) and Calomiris and Hubbard (1995).

managers will not invest as much since the external financing through capital markets disciplines managers and managers do not want be monitored. This investment behavior will generate a positive relationship between investment and cash flow. The free cashflow problem arises because insider ownership of cash flow rights is too low to align the interests of insiders and shareholders. Thus, managers overinvest. Therefore, firms with levels of low inside ownership of cash flow rights will exhibit a substantial sensitivity of investment to cash flow. For a firm with free cash flow but a high insider ownership of cash flow rights, managers' interests are well aligned with shareholders and thus we expect that they will make investment decisions that maximize the return to shareholders. The managers will invest at the efficient level and ignore the amount of free cash flow in making investments. The investment level of a firm does not depend substantially on the level of cash flow. So firms with higher insider ownership of cash flow.

On the other hand, when a firm has a high level of insider ownership of voting rights, managers will feel free to overspend without the presence of effective monitoring. If a firm has free cash flow then managers will spend the free cash flow without much discretion. Hence, firms with high insider ownership of voting rights will exhibit a substantial sensitivity of investment to cash flow. For a firm with free cash flow but a low level of insider ownership of voting rights, managers have to be cautious with investment decisions that do not maximize the return to shareholders. The managers will invest at a more efficient level and the amount of free cash flow is less in making investments. In this situation, the investment level of a firm depends substantially less on level of cash

flow. The reasoning implies that firms that have free cash flow with low ownership of voting rights will exhibit relatively low investment-cash flow sensitivities.

Myers and Majluf (1984) demonstrate how a firm underinvests in the presence of asymmetric information problems in the capital markets. Myers and Majluf (1984) assume that mangers act in the interests of shareholders when making the investment and financing decisions, which needs a more essential assumption that firms typically have a high ownership of cash flow rights. Dybvig and Zender (1991) show that if managerial ownership is low, the underinvestment problem in alleviated. Hadlock (1998) uses a model of investment under asymmetric information where investment is a function of both cash flow and managerial ownership. Hadlock (1998) has shown that investmentcash flow sensitivity is increasing in managerial ownership. Based on these models, I infer that the underinvestment problem worsens as insider ownership of cash flow rights increases, which should imply that investment-cash flow sensitivity is increasing in insider ownership of cash flow rights. On the other hand based on empirical studies on entrenchment, I infer that the underinvestment problem is alliviated as insider ownership of voting rights increases, which should imply that the investment-cash flow sensitivity is increasing in insider ownership of cash flow rights.

3.3 Regression Specification

Following the model in Hadlock (1998) and the regression specification in Shin and Stulz (1999), I use the following regression model:

$$I/A = \beta_0 Q + \beta_1 F/A + \beta_2 (F/A)^* \text{Voteright} + \beta_3 (F/A)^* \text{Cashright} + Y + \varepsilon$$
(6)

Where I is investment, F is cash flow, A is total assets, Q is a measure of Tobin's q, Voteright is the insider ownership of voting rights, Cashright is insider ownership of cash flow rights and Y is controls. If firms face asymmetric information problems, I expect β_3 to be positive and, if entrenchment effects are important, β_2 to be negative. If firms face free cash flow problems, I expect β_3 to be negative and, if entrenchment effects are important, β_2 to be positive. If asymmetric information problems and free cash flow problems do not affect firms investment decisions, I expect β_3 and β_2 to equal to zero.

3.4 Estimation Results

The first a couple of columns in Table 16 are the regression results from the full sample of firms including single class firms and dual class firms. Column 1 reports estimates from a standard investment-cash flow regression for the entire sample of 1995. As in previous studies, the coefficient on Q is positive and significant. However, lagged sales is not significant. The estimated coefficient on cash flow of .015 is highly significant but smaller in magnitude to the cash-flow coefficient estimates reported by Fazzari, Hubbard and Peterson (1988) and Hadlock (1998). My full sample is much larger than that in previous studies and contains a large number of small companies. That may be part of the reason for the difference. Column 2 includes terms interacting cash flow with insider ownership of cash flow rights and voting rights. The regression on the full sample does not show that insider ownership affects investment-cash flow sensitivity. Again this may be due to the large number of small firms in the sample.

Column 3 reports estimates from a standard investment cash flow regression for the dual class firm sample in 1995. As in previous studies, the coefficient on Q is positive and significant. However, lagged sales is not significant. The estimated coefficient on cash flow is positive and not significant. At least part of the reason is that the dual class firm sample is very small. Column 4 includes terms interacting cash flow with insider ownership of cash flow rights and voting rights. The estimated coefficient on cash flow of -.028 is small and insignificantly different form zero. This implies that for a firm with no insider ownership in either cash flow rights or voting rights, investment is not sensitive to cash flow. The estimated coefficient on cash flow interacted with insider ownership of cash flow rights is highly significant. The sensitivity of investment to cash flow increases rapidly with insider ownership of cash flow rights.

The coefficients on cash flow interacted with insider ownership of voting rights is significant at the 1% level, implying that the sensitivity of investment to cash flow decreases rapidly with insider ownership of voting rights. Note that the R^2 is as high as 0.9146.

These estimates support the asymmetric information theories. The results are inconsistent with the free cash flow theories. The conclusion is similar to that of Hadlock (1998). As managers care more about shareholder value the asymmetric information problem becomes more severe.

3.5 Conclusion

An intriguing issue in the investment literature on financial constraints is the question of why firms behave as if there is a difference between internal and external capital. A large body of literature argues that capital market imperfections result in a premium on external capital. Hoshi, Kashyap, Sharfstein (1991) and Hubbard, Kashyap and Whited (1995) provide some evidence that free cash flow problems do not explain the observed relationship between cash flow and investment. However, their evidence is indirect and skeptics remain. Hadlock (1998) provides evidence that investment becomes more sensitive to cash flow as insider holdings increase from an initial point of zero. However, the entrenchment effect on investment is less conclusive as investment-cash flow sensitivity stops increasing in ownership after ownership reaches an unclear level.

The separation of voting rights and cash flow rights in dual class firms provides a good ground to study the investment-cash flow sensitivity. In this chapter I have presented direct evidence that is inconsistent with the free cash flow problems driving the observed sensitivity of investment to cash flow. If the sensitivity of investment to cash flow was caused by free cash flow problems, the sensitivity of investment to cash flow should decrease as managers care more about shareholder value. However I find that there is evidence that investment-cash flow sensitivity increases with insider ownership of cash flow rights and investment-cash flow sensitivity decreases with insider ownership of voting rights. I am able to explicitly demonstrate the managerial entrenchment effect on investment-cash flow relation.

The finding presented above is consistent with the asymmetric information theories on explanation of investment –cash flow sensitivity. The asymmetric information problems become more severe as managers care more about shareholder value. My

findings add to the literature suggesting that capital market imperfections result in a premium on external capital.

APPENDICES

APPENDIX A

TABLES FOR CHAPTER 1: DUAL-CLASS STOCK AND THE BENEFITS OF CONTROL
Year	Number of firms in Total	Number of firms with dual Class common stocks
1990	5320	379
1991	5392	396
1992	5633	417
1993	6579	455
1994	6921	494
1995	8286	391
1996	8138	563
1997	8902	573
1998	9310	566
1999	7198	544

Table A1. Number of US Firms With Dual Class Common Stock in 1990-1999

Note – The full sample is composed of all firms listed on Compustat from 1990 to 1999. Foreign firms (ADR) and limited partnerships are excluded. The dual class firm sample includes firms with multiple classes of stocks.

Table A2. Description of the Variables

Dual	dummy variable, equals one for dual class firms, zero otherwise.
Inpet	percent of common stock hold by insiders.
Inpct_1	precious year's percentage of common stock hold by insiders.
Assets_1	previous year's total assets.
Assets-4	average of previous four year's total assets
Lgasset	logarithm of previous year's total assets
Equity_1	pevious year's market value of equity
Age	proxy for a firm's actual age. Defined as current year – first year listed on CRSP
Salegrow_1	sales growth in previous year
Salegrow-4	average sales growth in previous four years
Liquid_1	liquidity in previous year
Liquid-4	average liquidity in previous four years
DE_1	debt to equity ration in previous year, Compustat (data5[t-1] +data9[t-1])/data216[t-1]
DE-4	average debt to equity ratio in previous four years
MB_1	market to book ratio in previous year, Compustat data25[t-1] *data199[t-1]/data60[t-1]
MB-4	average market to book ratio in previous four years
PE_1	P/E ratio in the previous year
PE-4	average P/E ratio in the previous four years
Publish	dummy, equals one if SIC code is between 2700 and 2800, zero otherwise
Broadcast	dummy, equals one if SIC code is between 4800 and 4900, zero otherwise
Fin	dummy, equals one if SIC is between 6000 and 6300 or SIC is between 6700 and 6800, zero otherwise
Insure	dummy, equals one if SIC is between 6300 and 6500, zero otherwise
Estate	dummy, equals one if SIC is between 6500 and 6600, zero otherwise
Utility	dummy, equals one if SIC is between 4900 and 5000, zero otherwise
mpicture	dummy, equals one if SIC is between 7800 and 7900, zero otherwise
STDf_1	standard error of estimate from the market model in which firm's monthly return in previous four years is regressed on the average monthly return of the value-weighted market portfolio
STDt_1	standard deviation of monthly stock market rates of return in the previous four year

Variahla			Full Sam	ple			Dual c	lass firm S	Sample		T-test for
V al laulo	Median	Mean	SD	Min	Мах	Median	Mean	SD	Min	Max	cqual means
Sales (mn) Working Conitol	54.1	834.2	4152	-4.839	123276	164.87	1065.6	7520	0	123276	6413
(mn)	4.935	46.17	348.9	-5689	13664	21.178	67.31	141.7	-207	1.191.7	-2.4381**
CRSP	1979	1983	13.4	1925	1999	1985	1980	12.7	1925	1997	-1.5572
Age Total equity (mn)	7 18.041	10.61 302.6	13.38 1434	-9 -4775.6	65 42832	5 49.905	9.62 285.26	12.70 1928	-7 -3332	65 32153	1.557 .1866
Market value Equity (mn)	32.656	536.20	2590	.002375	64567	68.87	458.89	1469	.0539	20817	.9350
Equity_1	44.276	602.8	2653	0	62514	97.2	584.2	1974.8	.4077	25590	.1677
Equity-4	57.55	622.8	2478	.2129	66909.7	100.51	550.92	1956	1.3460	22791	.5747
Book Value Equity (mn)	16.953	290.38	1405	-4854.1	42832	46.558	269.4	1842	-3435	29812	.2354
MB ratio	1.213	4.341	94.55	0	6620	1.118	2.149	5.11	0	71.70	1.6545*
MB_1	1.533	4.106	43.5	0	2934.01	1.603	3.019	7.35	0	102.59	1.5020
MB-4	1.594	3.380	15.93	0	736.44	1.615	3.790	20.775	0	338.72	3185
Sales Growth	.0598	.5410	9.31	-2.646	485.56	0670.	.1318	.4735	-1	6.787	3.3689***
Salegrow_1	.0872	.5314	6.838	-1.563	385.48	.1059	.4815	4.186	-1	78.75	.2155
Salegrow-4	.1069	.5492	7.599	7432	392.76	.1248	.3453	1.768	3198	28.14	1.3356
Total Assets (mn)	55.255	1556.6	8070	0	216986	162.19	1750.8	12601	.003	180236	3212
Asset_1 Asset-4	58.71 60.435	1566.7 1590.5	7963 7473	00	230643 209510	165.518 152.5	1738.7 1623.2	12349 9809	.014 .285	173297 124344	2827 0602

Table A3. Summary Statistics of Sample of Firms in 1990

Wariable			Full Samp	Je			Dual cl	ass firm S	ample		T-test for
Variable	Median	Mean	SD	Min	Мах	Median	Mean	SD	Min	Мах	
Liquid ratio	.1966	3703	17.5	-1148	-	.2332	.8925	.9749	-17	.8925	-2.1868**
Liquid_1	.2173	4481	24.06	-1293	16.238	.2512	.2213	.3775	-3.083	.9209	-2.0358**
Liquid-4	.2366	2649	17.34	-1060	4.6078	.2766	.2570	.2481	-1.440	.8117	-1.9940**
Debt Ratio	.888	3.109	19.56	0	751	.9415	3.157	12.97	0	208.7	0666
DE_1	.9152	3.2984	23.40	0	1079.8	.9856	6.2055	42.75	0	572.70	-1.2813
DE-4	1.037	2.572	8.749	0	249.21	1.160	3.887	13.81	0	154.59	-1.5962
Price/Earning	8.094	16.17	70.02	0	3500	8.984	12.87	21.82	0	196.88	2.2237**
PE_I	9.722	20.23	81.89	0	2500	11.25	25.06	125.41	0	1700	7106
PE-4	12.31	21.11	42.67	0	994.60	13.87	26.55	53.31	0	433.46	-1.6343
Inpct	.1979	.255	.2226	7.14e-06	.99275	.2642	.3105	.0578	.00032	.9288	-3.6666****
Inpct_I	.2014	.2561	.2219	7.75e-07	.9889	.2545	.3006	.2252	.00003	.9187	-3.074***
STDt	.1230	.1392	.0722	.0238	.9582	.1125	.1288	.07896	.04218	.9582	1.9569*
STDt_1	.1165	.1324	.0712	.0250	.9484	1601.	.1241	.0765	.04724	.9484	1.5199
STDf	.1044	.1233	0739	.0238	.9351	.0932	.1107	.080	.03427	.9352	2.3386**
STDf_1	.09930	.1176	.0725	.0231	.9323	.09141	.1073	.0779	.0442	.932	1.8411*
Number of firms			5502					379			
Note - *5	ignificant at Significant (*Significant *	t the 10% at the 5% t at the 0.5 nt at the 0.5	level level % level 1% level								

Table A3. (Continued) Summary Statistics of Sample of Firms in 1990

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		Tal	ble A4. S	Summary	Statistics	of Samp	le of Firı	ns in 199	6		
Variable			Full Sampl	ى			Dual C	lass firm S	ample		
	Median	Mean	SD	Min	Мах	Median	Mean	SD	Min	Max	I -tcst tor equal means
Sales (mn) Working Capital	89.716 16.144	1181.5 78.243	5927 576	-16.1 53 -14323	173215 14966	300.5 41.779	1910 125.80	10744 843	0 -14323	173215 6940	-1.5835 -1.2032
(mn) First year on	92	87.1	13.74	25	66	93	87.6	13.17	25	66	-0.7964
CKSP Age Total equity	7 52,75	11.86 535 4	13.74	0 -3067_7	74 78977	6 145,23	11.39 980.3	13.17 4913	0 -3067.6	74 78927	.7964 -2.119**
(mn) Market value	110.04	2116	14077	.000016	508330	305.27	2873.0	12837	.3754	226704	-1.3094
Equity (mn) Equity_1	94.5	1733	10714	0	333672	261	1994	1006	.4827	132834	6165
Equity-4	113.0	1559	7803	.0293	213951	252	1672	7338	.5576	101545	2828
Book Value	50.943	522.5	2532.7	-1433.0	78927	131.4	952.9	4904.9	-3067.1	78927	-2.053**
Equity (mn) MB ratio	1.213	4.341	94.55	0	6620	1.118	2.149	5.111	0	71.70	2.1091**
MB_I	1.710	5.311	84.499	0	6600	1.703	3.413	12.061	0	256.1	1.6283
MB-4	2.112	4.749	31.242	0	1650	1.979	3.306	4.517	0	37.228	2.8762***
Sales Growth	.1084	1.689	40.13	-1.0606	3022.6	.1209	6.019	129.5	-1.000	3022.6	7780
Salegrow_1	.1351	.5073	4.434	-2.185	223.76	.1135	.8853	12.12	2998	223.76	5730
Salegrow-4	.1398	.4690	4.049	-1.6215	224.05	.1140	.8209	11.615	4461	224.05	5818
Total assets (mn)	152.6	3044.6	22126	0	716937	461.9	3997.9	20819	.003	276299	-1.0404
Asset_1	58.71	1567	7963	0	230643	348.18	3171	17555	.029	257389	6156
Asset4	122.22	2430	15823	.0005	386070	306.1	2870	17488	.1605	255698	5242

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			Full Samp	le			Dual C	lass firm S	Sample		•
Variable	Median	Mean	SD	Min	Max	Median	Mean	SD	Min	Мах	T-test for equal means
Liquid ratio	.2168	2724	17.03	-1224	I	.1827	1797	.4048	-6.333	.8950	-2.115**
Liquid_1	.2184	.007102	5.719	-379	1	.1816	.1211	.7126	-9.55	.9086	-1.4378
Liquid-4	.2370	.1515	1.371	-53.23	1	.2099	.1916	.5130	-8.0686	.8347	-1.228
Debt Ratio	.7083	2.364	22.96	0	1607.43	.9354	2.308	6.594	0	87.22	.1352
DE_1	.7230	3.261	52.22	0	3093	.9187	3.078	18.10	0	366.2	.1724
DE-4	9039	2.404	16.25	0	773.3	1.085	3.033	9.357	0	96.33	-1.185
Price/Earning	8.475	24.94	135.0	0	4773.45	8.984	12.866	21.82	0	196.9	.7222
Ratio											
PE_I	9.722	20.23	81.89	0	2500	13.63	39.25	189.9	0	3350	-1.8465*
PE-4	14.97	23.47	54.53	0	1573	15.63	32.11	87.02	0	1064	-1.8475*
Inpct_1	.1643	.2276	.2072	3.39e-07	.9840	.1737	.2317	.2180	7.67e-06	.8717	3417
STDt_1	.1171	.1364	.08428	.02372	1.3681	.1056	.1221	.06624	.03979	.4298	3.5802****
STDf_1	.1099	.1286	.08332	.02371	1.3487	6660.	.1151	.0651	.0351	.4148	3.4319****
Number of firms			7198					544			

Table A4. (Continued) Summary Statistics for Sample of Firms in 1999

^{*} Significant at the 10% level.
** Significant at the 5% level.
*** Significant at the 0.5% level

	19	990		1999
Industry Dummy	Full Sample	Dual class firm sample	Full sample	Dual class firm sample
Publish	83	24	84	24
Broadcast	122	26	204	53
Finance	589	27	1113	55
Insurance	157	19	209	19
Real Estate	62	3	69	5
Utility	260	8	194	5
Motion picture	62	11	51	7
Number of firms in total	5320	379	7198	544

Table A5. Distribution of Dual Class Firms in Certain Industries in 1990 and 1999

Note- Publishing industry includes firms with SIC codes between 2700 and 2800. Broadcasting industry includes firms with SIC codes between 4800 and 4900. Financial industry includes firms with SIC codes between 6000 and 6300 or SIC between 6700 and 6800. Insurance industry includes firms with SIC code between 6300 and 6500. Real estate industry includes firms with SIC between 6500 and 6600. Utility industry includes firms with SIC between 4900 and 5000. Motion picture industry includes firms with SIC between 7800 and 7900.

Independent	·······		
variables and	1	2	3
summary statistics			
Assets	4.8e-06	6.7e-06	000204**
	(.791)	(1.112)	(-2.297)
Age		00844	001570
		(-1.344)	(207)
Salegrow			004821
-			(144)
Liquid			1520
			(420)
Debt/Equity			.008968
			(1.558)
Market /book			007119
			(-0.790)
price/earning			004175
			(-1.334)
Publisher(dummy)	1.687****	1.653*****	1.668****
	(5.417)	(5.292)	(5.108)
Broadcast(dummy)	.7181*	.677*	.6669
	(1.813)	(1.711)	(1.306)
Utility (dummy)	-2.845****	-2.802***	-2.738***
	(-2.819)	(-2.775)	(-2.692)
Finance (dummy)	6761**	7615***	2290
	(-2.316)	(-2.590)	(312)
Insurance (dummy)	.4894	.4385	.5751
	(1.416)	(1.295)	(.757)
Estate (dummy)	-1.008	-1.005	dropped in
	(0991)	(989)	reg
Mpicture (dummy)	1.408**	1.385**	1.723****
	(2.462)	(2.420)	(2.873)
STDf	-3.530***	-4.250****	-6.32****
	(-2.621)	(-2.889)	(-3.572)
Intercept	-2.256	-2.019	-1.663
	(-12.62)	(8.09)	(-5.209)
Log-likelihood	-722.83	-721.88	-583.30
Number of	3164	3164	2522
Observations			· · · · · · · · · ·

Table A6. Logit Regressions of Sample of Firms in 1990

Note - Logit regression of the probability of issuing dual class common stock on accounting and stock return data. The dependent variable is a dummy that equals one if a firm has a dual common stock and 0 otherwise. Publish, broadcast, utility, finance, insurance, estate and mpicture industry dummies. t-statistics are in parentheses.

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* Significant at the 10% level

** Significant at the 5% level

***Significant at the 1% level

****Significant at the 0.5% level

Independent	,	F	
variables and	4	5	D
Summary statistics		1 2/2****	
insider ownersnip		(2 252)	
A		(3.332)	
Assels		(2 422)	
ananta A		(2.422)	00027**
assels-4			(-2.418)
Fauity	- 61e-05*		(-2.410)
Equity	(-1.730)		
Δge	(-1.750)	- 006281	- 000824
ngu		- 818	(- 106)
Salegrow-4		.010	.001132
Sulogion 1			(.054)
Liquid-4			08372
zidare :			(197)
debt/equity-4			.009198
			(.542)
Market/book-4			.009642
			(1.328)
price/earning -4			002947
1 0			(735)
Publisher (dummy)	1.662****	2.062*****	1.53*****
•	(5.335)	(6.330)	(4.596)
Broadcast(dummy)	.9760**	.9422**	.6414
	(2.407)	(2.047)	(1.266)
Utility (dummy)	-2.83****	dropped	-2.690***
•	(-2.803)	in reg	(-2.636)
Finance(dummy)	6770**	4890	1894
	(-2.397)	(-1.214)	(257)
Insurance (dummy)	.5268	.8530**	.6212
	(1.572)	(2.334)	(.800)
Estate (dummy)	-1.053	5462	dropped
	(-1.036)	(532)	in reg
Mpicture (dummy)	1.439**	1.552**	1.776****
	(2.513)	(2.345)	(2.910)
STDf	-4.54****	-3.990**	-6.13*****
	(-3.155)	(-2.065)	(-3.349)
Intercept	-2.083	-2.719	-1.736
	(-10.86)	(-8.410)	(-5.046)
Log-likelihood	-719.70	-524.45	-574.62
Number of	3141	2309	2408
observations			

Table A6. (Continued) Logit Regressions of Sample of Firms in 1990

* Significant at the 10% level ** Significant at the 5% level ***Significant at the 1% level ****Significant at the 0.5% level ****Significant at the 0.1% level

Independent variables					
and summary statistics	1990	1991	1992	1993	1994
total assets-4	3.76e-06	4.00e-06	4.04e-06	2.90e-06	1.80e-06
	(.450)	(.547)	(.595)	(.416)	(.273)
Age	0116**	0109*	01334**	0164***	0145**
-	(-1.796)	(-1.789)	(-2.290)	(-2.772)	(-2.526)
Publisher (dummy)	1.582*****	1.529*****	1.517*****	1.71*****	1.72*****
	(5.03)	(5.035)	(4.998)	(5.78)	(5.945)
Broadcast	.5879	1.018****	.9966*****	1.20*****	1.09*****
(dummy)	(1.47)	(2.996)	(3.179)	(4.12)	(3.581)
Utility	-2.947****	-2.32*****	-1.94*****	-1.123***	-1.166
(dummy)	(-2.917)	(-3.218)	(-3.282)	(-2.623)	(1.3975)
Finance	8419***	8297***	930*****	843****	8067****
(dummy)	(-2.671)	(-2.762)	(-3.346)	(-3.124)	(-2.979)
Insurance	.4220	.5999**	.24009	.04772	.006675
(dummy)	(1.181)	(2.015)	(.801)	(.144)	(.984)
Estate	-1.021	9819	-1.024	7331	6914
(dummy)	-1.003	(965)	(-1.006)	(718)	(676)
Mpicture (dummy)	1.431**	1.262**	1.1836**	1.131**	1.398****
-	(2.491)	(2.488)	(2.546)	(2.233)	(2.935)
STDf	-10.4****	-10.0*****	-6.82*****	-4.3*****	-4.56*****
	(-4.431)	(-4.710)	(-4.287)	(-3.66)	(-3.831)
STD_{f}^{2}	13.44****	12.95*****	6.411*****	1.212**	1.1959**
	(3.956)	(4.311)	(3.756)	(2.684)	(1.984)
Intercept	-1.472	-1.494	-1.593	-1.720	-1.683
-	(-5.013)	(-5.393)	(-6.740)	(7.972)	(-7.622)
Log-likelihood	-703.50	-781.96	-884.73	-896.60	-896.61
number of observations	3081	3345	3596	3579	3547

Table A7. Logit Regression of Sample of Firms in 1990-1994

Logit estimate of the dependence of dual/multiple class common stock structure probability on accounting and stock return data. The dependent variable is a dummy that equals one if a firm has a dual/multiple common stock structure.

Note - Logit regression of the probability of issuing dual class common stock on accounting and stock return data. The dependent variable is a dummy that equals one if a firm has a dual common stock and 0 otherwise. Publish, broadcast, utility, finance, insurance, estate and mpicture are industry dummies. t-statistics are in parentheses.

* Significant at the 10% level

** Significant at the 5% level

***Significant at the 1% level

****Significant at the 0.5% level

Independent variables and summary statistics	1995	1996	1997	1998	1999
total assets-4	1.54e-06	3.62e-07	3.42e-07	1.32e-06	8.62 e-0 6
	(.251)	(062)	(.946)	(.320)	(.228)
Age	0144**	0211*****	01395***	008225*	00903*
	(-2.554)	(-3.652)	(-2.672)	(-1.706)	(-1.906)
Publisher (dummy)	1.73*****	1.737****	1.693*****	1.75*****	1.716*****
	(5.969)	(6.207)	(6.080)	(6.157)	(5.842)
Broadcast	1.25*****	1.025*****	1.356*****	1.435*****	1.432*****
(dummy)	(4.008)	(3.225)	(4.700)	(5.219)	(5.039)
Utility	-1.173***	-1.245	-1.469****	-1.339****	-1.548****
(dummy)	(-2.742)	(-2.877)	(-3.138)	(-2.866)	(-2.981)
Finance	847****	6485***	-1.01*****	925*****	-1.09*****
(dummy)	(-3.043)	(-2.653)	(-4.298)	(-4.125)	(-4.830)
Insurance	.1326	3088	06688	0212	1578
(dummy)	(.414)	(896)	(231)	(076)	(531)
Estate	6719	.1372	1174	07635	0299
(dummy)	(657)	(.184)	(159)	(103)	(040)
Mpicture (dummy)	1.508****	1.192**	1.118**	1.062**	-1.142**
-	(3.353)	(2.525)	(2.202)	(2.111)	(2.226)
STDf	-4.620*****	-6.480*	-8.194**	-7.10*****	-7.78*****
	(-3.820)	(-1.633)	(-2.551)	(-3.517)	(-4.602)
STD_{f}^{2}	1.196*	-2.189	3.382	4.7000	5.298**
	(1.832)	(182)	(.369)	(1.150)	(2.310)
Intercept	-1.675	-1.245	-1.306	-1.556	-1.358
-	(-7.631)	(-3.632)	(-4.363)	(-6.333)	(-5.722)
Log-likelihood	-898.55	-945.81	-998.28	-1055.85	-1021.71
number of observations	3518	3593	3931	4104	3866

Table A8. Logit Regression of Sample of Firms in 1995-1999:

Logit estimate of the dependence of dual/multiple class common stock structure probability on accounting and stock return data.

Note - The dependent variable is a dummy that equals one if a firm has a dual common stock and 0 otherwise. Publish, broadcast, utility, finance, insurance, estate and mpicture are industry dummies. t-statistics are in parentheses.

* Significant at the 10% level

** Significant at the 5% level

***Significant at the 1% level

****Significant at the 0.5% level

Independent variables and summary statistics	1	2	3	4	5
Insider ownership			1.034****		
Total Assets	-1.03e-06		(3.046) 4.25e-07	0000231	
total assets-4	(310)		(.089)	(-1.415)	0000244
Equity		0000132*			(-1.287)
Age		(-1.910)	005599	00909*	00943*
Salegrow			(-1.029)	(-1.666) 42455*	(-1.723)
Salegrow-4				(-1.908)	4079*
Liquid				.1401	(-1.941)
Liquid-4				(.451)	.09635
Debt/Equity				.02132	(.288)
debt/equity-4				(2.108)	.01464*
market /book				04414**	(1.855)
Market/book-4				(-2.248)	02902
price/earning				.0002664	(-1.558)
price/earning -4				(.077)	.001336*
Publisher (dummy)	1.747*****	1,7209*****	1.886*****	1.762*****	(1.74 9) 1.76***** (5.701)
Broadcast	1.482*****	1.6086*****	1.561****	1.672****	1.48****
(dummy)	(5.234)	(5.552)	(4.665)	(5.021)	(4.406)
Utility	-1.591****	-1.6237****	-1.289*	-1.439***	-1.454***
(dummy)	(-3.085)	(-3.139)	(-2.155)	(-2.738)	(-2.760)
Finance	9358*****	-1.014*****	-1.063	9909	-1.0205
(dummy)	(-4.356)	(-4.684)	(-3.660)	(971)	(-1.000)
Insurance	05683	1046	.0635****	.8691*	.8298
(dummy)	(198)	(355)	(.201)	(1.709)	(1.642)
Estate	0633	1051	5128	dropped in	dropped in
(dummy)	(085)	(141)	(498)	reg	reg
Mpicture (dummy)	1.16/***	1.205**	1.193**	1.235*	1.3906**
STDE	(2.279)	(2.348)	(2.012)	(1.84/)	(2.340)
SIDI	-4.800*****	-1.202*****	-0.U/*****	-D.D/*****	-/.ð***** / / 392\
STD ²	(-4.506)	(-4.534)	(-3.188)	(-4./02)	(-4.283) 5 200**
SID_{f}		4.920°° (2.120)	3.931T		J.088"" (7 667)
Log-likelihood	-1024.98	-1020.32	-808.10	-795.01	-803.53
number of observations	3877	3860	2967	2907	2882

Table A9. Logit Regression of Sample of Firms in 1999

Note - The dependent variable is a dummy that equals one if a firm has a dual common stock and 0 otherwise. Publish, broadcast, utility, finance, insurance, estate and mpicture are industry dummies. tstatistics are in parentheses.

* Significant at the 10% level ** Significant at the 5% level

Significant at the 1% level *Significant at the 0.5% level *****Significant at the 0.1% level

APPENDIX B

TABLES FOR CHAPTER 2: DUAL-CLASS STOCK, FIRM VALUE, AND PERFORMANCE

Table B1. Description of the Variables

DUAL	dummy variable, equals one for dual class firms, zero otherwise.
Ownsuper	the insider ownership in the superior voting class
Owninfer	the insider ownership in the inferior voting shares
Sharesuper	the number of shares outstanding in superior voting class
Shareinfer	the number of shares outstanding in inferior voting class
Votesuper	the votes per share for the superior voting class
Voteinfer	the votes per share for the inferior voting class
Separation	Insider ownership of voting rights/ Insiders ownership of cashflow rights
Vote rights	Insider ownership of voting rights
Cash rights	Insider ownership of cashflow rights
Size	total firm assets
Size_1	previous year's total assets.
Lgsize	logarithm of total assets
Age	proxy for a firm's actual age. Defined as current year – first year listed on CRSP
Lgage	logarithm of age
Salegrow_1	sales growth in previous year
Liquid	Assets liquidity
DE	debt to equity ratio, Compustat (data + data9)/data216
M/B equity	market-to-book equity ratio, Compustat data25*data199/data60
PE	Price/Earnings ratio
Stdf	standard error of monthly stock market rates of return in previous
	four years estimated from a market model in which firm s
	monthly return in previous four years is regressed on the
	average monthly return on value-weighted market portfolio
Stat	standard deviation of monthly stock market rates of return in previous four years
R&D	Research and development expense/total assets
Advertising	Advertising expense/ total assets
Investment	Capital expenditure/ total assets
Cashflow	operating cashflow/ total asstes
EBIT	Earnings before interest and taxes/ total assets
ROA	Net Income/ total assets
Dividend	Cash dividend/ total capital

							•					
Waniabla		Singl	e class firn	n sample			Dual cl ^ɛ	ıss firm si	ample		t-test for	Wilcox sign-
v arradie	Median	Mean	SD	Min	Мах	Median	Mean	SD	Min	Мах	mean	equal median
Tobin's Q Tobin's Q 96	1.647 1.614	4.429 4.347	106.6 113.7	.186 .2455	8716 8947	1.356 1.353	2.355 1.964	9.69 3.38	.2690 .1514	184.6 58.84	.3718 .3921	5.98***** 5.95*****
First year on CRSP	1988	1984	13.2	1925	6661	1987	1984	11.8	1925	6661	3246	.409
Age Market value	7 57.40	10.8 775.0	13.2 4096	-4 .00134	70 119989	8 173.5	10.6 832.0	11.8 2523	-4 .0301	70 33495	.3246 2727	409 -9.2****
Equity (mn) Equity_1	52.56	646.4	3171	0	87004	140.8	664.1	2111	1.229	28516	1030	-8.5****
Book Value	27.02	281.6	1264	-1131.6	40436	82.54	338.9	1504	-827.7	24547	8665	-9.88****
Equity (mn) Insider ownership of	.1475	.2223	.2068	0	9078	.3202	.3427	.2179	0	.9216	-9.2****	-9.37****
cash flow rights Insider owncrship of	.1475	.2223	.2068	0	9778	.6074	.5566	.2731	0	_	-24****	-16.5****
voting rights MB equity ratio	1.663	4.811	60.4	0	4444	1.686	3.725	3.44	0	30.3	.6832	-1.329
Sales Growth	.1213	.6675	9.60	-1.03	428	.1145	.2811	1.114	-1	15.28	.7818	.715
Total Assets	71.28	1567.	10699	0	316550	222.4	1596	12547	.021	243283	0502	-10.0*****
(imi) Asset_1	57.0	0 1411. 5	9350	0	272503	198.9	1437.6	11369	.049	219354	0531	-9.84****
Liquid ratio	.2027	C	16.3	-1284		.2565	.0547	3.71	-67.57	.8779	1424	-2.788***
Debt ratio	.6071	1.981	21.30	0	1102	.8274	2.000	5.481	0	50.32	0163	-5.37****
Price/Earning Ratio	12.5	22.68	96.36	0	3631.2	12.80	26.26	103.7	0	1765.6	7112	-1.507

Table B2. Summary Statistics of Sample of Firms in 1995

				and the second se								
Variable		Ľ.	ull Sample	υ			Dual cl	lass firm S	ample		T-test for could means	Wilcox sign- rank test for
	Median	Mean	SD 60.05	Min	Max	Median	Mean 47 16	SD 73.6	Min	Max	<pre>cumous maho</pre>	
P/F ratio 96	C:21	17.07	CC.00	>	C-716-7	C/.C1		0.014	>	C711	· · · · · ·	0/1.7-
Investment/	.0604	.1047	.5202	0	30.9	.0556	.1469	8060.	0	14.86	-1.466	707
Assets Investment/	.0560	1060.	.2220	0	9.20	.0476	0819.	.1264	0	1.345	.6945	.074
Assels 90 FRIT/ Assets	0717	- 086	6 576	-567 0	8 984	0880	0749	1 565	-12 88	26.28	- 4816	-1 143
ROA	.0323	.2507	13.68	1611-	7.222	.0354	6090	.9275	-12.88	6.015	2729	.198
Cashflow/	.0751	2026	13.82	-1188	7.806	0199	.0497	1.303	-12.69	19.47	3557	469
Assets												
Cashflow/	.0771	0432	2.406	-188	3.819	.0760	.0292	.3678	-4.863	1.128	5792	.016
Assets 96												
Dividends/	0	.0239	.1548	-4.667	6.172	0	.0213	.0692	2059	1.042	.3228	-4.32]****
Equity Dividends/	C	0220	4087	-7 873	30.26	C	0216	0732	- 1288	1 143	2502	*****850 7-
equity 96	>			i		>						
STD	.1127	.1328	0989.	.0219	3.472	.1005	1097	.0495	.0322	.3041	3.567****	3.234****
STDf	.1085	.1291	.0986	.0218	3.468	.0966	.1056	.0484	.0322	.3039	3.666*****	3.346*****
R&D/assets	.0575	.3795	13.72	0	899	.0165	.0805	.2403	0	2.58	.2964	5.912*****
Advertising/	.0320	.0817	.2109	0	2.980	.0367	1960.	.1565	0	1.103	6296	-2.151**
Assets												
Number of			7895					391				
firms												

Table B2. (Continued) Summary Statistics for Sample of Firms in 1995

*Mean (median) unequal, significant at the 10% level **Mean (median) unequal, significant at the 5% level ***Mean (median) unequal, significant at the 1% level ****Mean (median) unequal, significant at the 0.5% level ****Mean (median) unequal, significant at the 0.1% level Note -

Industry Dummy	Full Sample	Dual class
Publishing	96	22
Broadcasting	191	39
Finance	1269	19
Insurance	275	23
Real Estate	68	2
Utility	264	5
Motion picture	61	8
Agriculture-Crops	15	2
Oil and gas extraction	216	4
Number of firms in total	8286	391

Table B3. Distribution of Dual Class Firms in Certain Industries in 1995

Note- publishing industry includes firms with SIC codes between 2700 and 2800. Broadcasting industry includes firms with SIC codes between 4800 and 4900. Financial industry includes firms with SIC codes between 6000 and 6300 or SIC between 6700 and 6800. Insurance industry includes firms with SIC code between 6300 and 6500. Real estate industry includes firms with SIC between 6500 and 6600. Utility industry includes firms with SIC between 4900 and 5000. Motion picture industry includes firms with SIC between 7800 and 7900. Agriculture-Crops industry includes firms with SIC between 0100 and 70200. Oil and extraction industry includes firms with SIC between 1300 and 1400.

Table B4.A. Insider Ownership in The Dual Classes

	Super-voting class	Inferior-voting class
Mean insider ownership	.6373*	.2165*
Medium insider ownership	.7123**	.1460**
Total number of firms	2	89

Insiders are defined as executive officers and board directors. The insider ownership includes shares owned by officers and directors, trusts for their benefits and foundations or corporations they control.

* t=20.81 for hypothesis that mean insider ownership in super class is large than mean insider ownership in inferior class

** z=13.51 for the Wilcox sign-rank test of the equal median insider ownership.

Table B4.B. Insider Cash Flow Rights and Voting Rights in Dual Class Firms

Cash flow rights and voting rights are based on common stock ownership. SEPARATION Index is defined as insider ownership of voting rights divided by ownership of cash flow rights.

	Cash flow rights	Voting rights
Mean Insider rights	.3465*	.5480*
Medium Insider rights	.3225**	.6058**
Mean SEPARATION	1.87	
Medium SEPARATION	1.50	
Total number of firms	242	

* t= 17.92 for hypothesis that mean insider voting rights in dual class firms is large than mean insider cashflow rights

** z= 12.59 for the Wilcox sign-rank test for equal median.

	Super-voting class	Inferior-voting class
Mean CEO ownership	.3475*	.0994*
Medium CEO ownership	.2505**	.022**
Total number of firms	2	90

Table B4.C. CEO Ownership in The Dual Classes

- * t=13.53 for hypothesis that mean CEO ownership is larger in Super-voting class than mean CEO ownership in inferior-voting class.
- ** z =11.28 for Wilcox sign-rank test of the hypothesis that the median CEO ownership is larger in Super-voting class than median CEO ownership in inferior-voting class.

Table B4.D. Insider Cash Flow Rights and Voting Rights in Dual Class Firms inMedia Industries and Non-media Industries

Cash flow rights and voting rights are based on common stock ownership.

	Firms in medi	a industries	Firms in non-me	edia industries	
	Cash flow	Voting	Cash flow	Voting	
Mean Insider rights	.3318	.5340	.3413	.5508	
Medium Insider rights	.2612	.6249	.3202	.6021	
Mean SEPARATION	1.793		1.8	391	
Median SEPARATION	1.4	60	1.523		
Total number of firms	4	4	20	02	

Table B4.E. Insider Cash Flow Rights and Voting Rights in Dual Class Firms

	Both classes publicly	traded	Only one clas publicly	ss traded
_	Cash flow	Voting	Cash flow	Voting
Mean Insider rights	.3302	.4916*	.3425	.5702*
Medium Insider rights	.3258	.522**	.3141	.6378**
Mean SEPARATION	1.65***		1.9	6***
Median SEDADATION	1.4	41	1.52	
Total number of firms	6	9		201

Cash flow rights and voting rights are based on common stock ownership.

Table B4.F. The Largest Block Shareholder Ownership in The Dual Classes

The block shareholder is defined as any person, corporation or institution that owns more than 5% of the class. Note there are no block shareholders in the inferior voting class in some firms.

	Super-voting class	Inferior-voting class
Mean largest block ownership	.6013	.2725
Medium largest block ownership	.5667	.1929
Total number of firms	292	255

Table B5. Summary Statistics for the Sample of Dual Class Firms and the Matching Firms

Variable	Du	al class firm	าร	Matching	g single clas	ss firms	Number
vanable	Median	Mean	SD	Median	Mean	SD	observations
Tobin's Q	1.318	1.844	1.646	1.445	1.933	1.834	288
Q 96	1.388**	2.100	3.617	1.479**	2.083	2.645	315
PE	12.62	25.48	106.0	13.49	21.88	51.50	320
PE 96	14.01	36.34	177.1	13.07	33.58	180.7	350
Market/Book	1.651**	2.645**	3.260	2.094**	3.395**	4.803	326
equity							
Age	5**	9.148	11.77	7**	10.42	12.76	406
Debt ratio	.889	2.223	5.449	.942	4.314	28.18	375
Investment	.0556	.1539	.8429	.0652	.0957	.1076	336
Investment96	.0497	.1052	.2452	.0610	.1021	.2034	363
Cash flow	.0845	.0881	1.251	.0876	.0224	.8009	363
Cash flow 96	.07884	00577	.5397	.0905	.00793	.4318	402
EBIT	.0883	.1134	1.447	.0796	.0409	.6328	372
ROA	.0373	0281	.6708	.0306	0377	.7912	372
Dividend	0	.0153	.1362	0	0039	.8055	429

Dual class firms are matched with peer single firms with the closest book assets in the same industry (same 2-digit SIC code).

Note - * different mean or median significant at the 10% level ** different mean or median significant at the 5% level *** different mean or median significant at the 1% level **** different mean or median significant at the 0.5% level ***** different mean or median significant at the 0.1% level

Variable	Dual class class	s firms wi sses tradeo	th both 1	Matching single class firms		s firms	Number of observations
	Median	Mean	SD	Median	Mean	SD	
Tobin's Q	1.146***	1.454*	1.009	1.396***	1.813*	1.567	68
Q 96	1.178**	1.458	.898	1.340**	1.809	1.785	64
PE	12.50	20.13	4.335	13.37	26.02	5.686	72
PE 96	12.62	23.61	48.44	14.81	41.18	140.2	71
Market/Book	1.613	2.494	3.086	2.187	3.165	3.642	74
equity							
Age	11	13.09	10.45	9	12.69	13.31	75
Debt ratio	1.110	1.776	2.566	1.018	1.771	1.929	70
Investment	.0509	.0874	.1317	.0668	.0911	.0849	74
Investment96	.0428**	.0764	.1254	.0648**	.0923	.1300	72
Cash flow	.1007	.0623	.3480	.0948	.0927	.1114	77
Cash flow 96	.0935*	.0684	.2686	.1165*	.1012	.1363	76
EBIT	.0904	.0641	.314	.0893	.101	.123	79
ROA	.0439	.00903	.336	.0402	.0351	.102	79
Dividend	.00549	.0240	.0448	.0124	.0508	.144	83

Table B6.A. Summary Statistics for the Subsample of Dual Class Firms with Both Classes Traded Publicly and the Matching Firms

Dual class firms are matched with peer single firms with the closest book assets in the same industry (same 2-digit SIC code).

Note - * different mean or median significant at the 10% level

** different mean or median significant at the 5% level

*** different mean or median significant at the 1% level

**** different mean or median significant at the 0.5% level

***** different mean or median significant at the 0.1% level

Table B6.B. Summary Statistics for the Subsample of Dual Class Firms with Only One Class Traded Publicly and the Matching Firms

Variable	Dual class firms with only one class traded		Matching single class firms			Number of	
	Median	Mean	SD	Median	Mean	SD	
Tobin's Q	1.357	1.892	1.579	1.443	1.941	1.821	197
Q 96 ·	1.414	2.262	4.194	1.476	2.072	2.583	226
PE	12.95	28.926	125.4	13.99	21.81	55.16	222
PE 96	14.73	30.85	118.6	12.64	33.73	200.8	249
Market/Book equity	1.667*	2.637**	3.173	2.059*	3.395**	4.962	224
Age	4**	8.857	12.30	6**	10.15	12.79	286
Debt ratio	.8274	2.392	6.267	.8759	3.920	24.94	264
Investment	.0561	.1740	.9991	.0645	.0972	.1156	231
Investment96	.0547	.1167	.2801	.0595	.1062	.2302	263
Cash flow	.0841	.1483	1.240	.0854	.0031	.9534	251
Cash flow 96	.0801	-0.0058	.5454	.0841	00830	.4820	282
EBIT	.0891	.1743	1.647	.0769	.02455	.7498	257
ROA	.0365	.03812	.417	.0294	-0.0590	.9425	257
Dividend	0	.0123	.160	0	-0.229	.960	300

Dual class firms are matched with peer single firms with the closest book assts in the same industry (same 2-digit SIC code).

Note - * different mean or median significant at the 10% level

** different mean or median significant at the 5% level

*** different mean or median significant at the 1% level

**** different mean or median significant at the 0.5% level

***** different mean or median significant at the 0.1% level

Table B7.A. Summary Statistics for the Subsample of Dual Class Firms in Media Industries and the Matching Firms

Media Industries includes SIC code from 2700 to 2799 (publishing), from 4800 to 4900 (broadcasting) and 7800 to 7900 (motion pictures). Dual class firms are matched with peer single firms with the closest book assets in the same industry (same 2-digit SIC code).

Variable	Dual cla i	ss firms in ndustries	media	Matching	g single clas	s firms	Number of observations 46
	Median	Mean	SD	Median	Mean	SD	observations
Tobin's Q	1.616	1.761	.7262	1.762	1.789	.5736	46
Q 96	1.461	1.998	2.07	1.523	1.667	.776	50
PE	17.75**	38.06*	86.88	0**	13.83*	25.13	49
PE 96	15.73**	107.5*	425.8	0**	13.97*	25.99	55
Market/Book equity	2.26**	3.2****	4.33	3.74**	5.7****	6.66	49
Age	3	7.09*	10.38	5	10.44*	13.43	66
Debt ratio	1.24*	2.66	4.83	1.70*	9.14	46.98	61
Investment	.0620	.170	.438	.1085	.136	.122	52
Investment 96	.0776*	.197	.487	.0914*	.207	.444	59
Cash flow	.0925	.140	.396	.112	.0856	.151	59
Cash flow 96	.0807	.0430*	.459	.1056	0162*	.662	71
EBIT	.0921	.1305*	.4229	.0622	.0507*	.1455	66
ROA	.0348	0726	.7033	.0293	0108	.1558	66
Dividend	0*	.0199**	.0483	0*	.0429**	.0751	74

Note - * different mean or median significant at the 10% level

** different mean or median significant at the 5% level

*** different mean or median significant at the 1% level

**** different mean or median significant at the 0.5% level

***** different mean or median significant at the 0.1% level

Table B7.B. Summary Statistics for the Subsample of Dual Class Firms in Nonmedia Industries and the Matching Firms

Media Industries includes SIC code from 2700 to 2799 (publishing), from 4800 to 4900 (broadcasting) and 7800 to 7900 (motion pictures). All other industries (SIC code from 0100 to 9999) are defined as non-media industries. Dual class firms are matched with peer single firms with the closest book assets in the same industry (same 2-digit SIC code).

Variable	Dual class firms in non- media industries			Matching single class firms Number of			
	Median	Mean	SD	Median	Mean	SD	observations
Tobin's Q	1.222	1.859	1.768	1.372	1.960	1.985	242
Q 96	.136**	2.119	3.84	1.447**	2.162	2.86	265
PE	12.15	23.21	109.1	13.80	23.15	54.87	271
PE 96	13.95	23.08	53.04	13.63	37.26	196 .3	295
Market/Book equity	1.520	2.54*	3.03	1.87	2.99*	4.29	
Age	5	9.55	12.00	7	10.42	12.65	340
Debt ratio	.8071	2.138	5.564	.8938	3.377	22.82	314
Investment	.0551	.1510	.8979	.578	.0883	.1033	284
Investment96	.0482	.0882	.1611	.0545	.0826	.0823	317
Cash flow	.0798	.0766	1.260	.0848	.0084	.8823	297
Cash flow 96	.0779	0162	.5555	.0850	.0131	.3651	331
EBIT	.0880	.1097	1.584	.0815	.0378	.6947	306
ROA	.0387	0185	.664	.0314	0435	.8696	306
Dividend	0	.0144	.148	0	0136	.885	355

Note - * different mean or median significant at the 10% level ** different mean or median significant at the 5% level *** different mean or median significant at the 1% level **** different mean or median significant at the 0.5% level ***** different mean or median significant at the 0.1% level Table B8. Cross Sectional Regressions of Q in 1995

Independent variables and summary statistics								
DUAL	.4620	3203* / 1 760)	1723				4286	
SEPERATION	(0+0.0)	(001-1-)	(c+0, -)				(1611-)	07521
VOTE				6573	-1.505	-1.367		
CASH			-1.29****	(001) 6937	(160.1-)	(123)	-1.40****	-1.38****
Log(size)	-6.75****	113****	(-4.483) 1262	(834) 130*****	(.044) 1215**	(.628) 0215	(-2.757) 1168**	(-4.811) 132****
	(-7.7)	(-4.110)	(-3.804)	(-3.905)	(-2.047)	(413)	(-1.972)	(-3.964)
Log(age)	7.412	0901	1398	1449	3251*	2714*	3250*	1423
	(2.018)	(929)	(-1.247)	(-1.283)	(-1.664)	(-1.880)	(-1.668)	(-1.261)
Fstd		1.438****	1.093**	1.090****	1.637		1.693	1.094**
		(2.929)	(2.092)	(2.078)	(1.200)		(1.251)	(2.086)
R&D						1.95****	4.03****	
Expenses						(3.663)	(1.891)	
Advertising						.2954		
Expenses						(.0299)		
4-digit	Yes	Yes	Yes	Yes	Yes	Yes	Ycs	Yes
Industry code								
dummies								
Intercept	28.13	2.681	3.195	3.240	3.602	2.921	3.568	3.317
	(5.998)	(9.004)	(8.940)	(8.988)	(5.282)	(6.476)	(5.264)	(8.88)
R ²	.0681	.1511	.1199	.1196	.1149	.5030	.1147	.1196
Number of	5715	3480	2570	2551	1459	497 ¹³	1468	2551
observations								

¹³ Note- the number of observations is limited due to the missing advertsing data and missing R&D expenses data in Compustat.

Note -cross sectional regression of Tobin's q on dual class dummy variable, Separation index or insiders' voting rights and cash flow rights and control variables. t-statistics are in parentheses.

* Significant at the 10% level ** Significant at the 5% level ***Significant at the 1% level ****Significant at the 0.5% level ****Significant at the 0.1% level

Table B9. Cross Sectional Regressions of Q in 1995: Subsample with Only The Dual Class Firms Have Both Classes Traded Publicly

Note –cross sectional regression of Tobin's q on dual class dummy variable, Separation index or insider voting rights and cash flow rights and control variables. t-statistics are in parentheses.

Independent variables and summary statistics	Subsample with only dual class firms have both classes traded publicly					
DUAL	2.653	-4.112**	8473*			
VOTE	(0.362)	(-1.773)	(1.677)	-4.112**	-7.290**	
- ·				(-2.167)	(-2.366)	
CASH			1829 (- 380)	2.699	5.847*	
VOTE.0to10			(*.500)	(1.504)	(1.050)	-6.642
VOTE average						(-1.411)
VOIE.over10						-7.295++ (-2.359)
CASH.0to75						5.754*
CASH over75						(1.791)
CASH.OVEL75						(.924)
Log(size)	-6.75****	111*****	0211	13*****	1193*	1175*
-	(-7.7)	(-4.07)	(397)	(-3.81)	(-1.939)	(-1.773)
Log(age)	7.412	198	269*	148	3155	311
	(2.018)	(-1.246)	(-1.837)	(-1.268)	(-1.586)	(-1.543)
rsia		(2.013)		.9/35*	(1 100)	(083)
R&D		(2.915)	1.94****	(1.657)	4.20*****	4.20*****
			(3.60)		(7.63)	(7.60)
Advertising			.3239			
			(.323)			
4-digit Industry	Yes	Yes	Yes	Yes	Yes	Yes
code dummies						
Intercept	28.13	2.628	2.906	3.295	3.603	3.552
- 2	(5.998)	(11.85)	(6.334)	(8.916)	(5.226)	(4.288)
K-	.0681	.2503	.5100	.1326	.1311	.1295
Number of observations	5715	3480	474	2443	1406	1406

* Significant at the 10% level

** Significant at the 5% level

***Significant at the 1% level

****Significant at the 0.5% level

Table B10. Cross Sectional Regressions of Q in 1995: Subsample of Firms in Media Industries and Firms in Non-media Industries

Independent variables and summary statistics	Subsample Of firms in media industries	Subsample of firms in media industries	Subsample of firms in media industries	Subsample of firms in non- media industries	Subsample of firms in non- media industries
DUAL	234 (873)	217 (731)		360 * (-1.824)	6334* (-1.635)
VOTE	() /	(488 (459)	()	(,
CASH		-1.05* (-1.778)	659		0368 (078)
Log(size)	0092 (145)	0065	0575	123***** (-4.255)	00137 (027)
Log(age)	262	424*	456 (-1.822)	0824	2403* (-1.647)
Fstd	.498	.300	513	1.437****	(
R&D Expense	(.200)		(.251)	(2.000)	1.945***** (3.637)
Advertising Expense					.372
4-digit Industry code dummies	Yes	Yes	Yes	Yes	Yes
Intercept	2.52 (3.172)	3.249 (3.869)	3.781 (4.277)	2.712 (8.754)	2.722***** (6.036)
R ²	.0729	.1319	.0162	.1527	.5050
Number of observations	156	126	123	4125	492 ¹⁴

Note –cross sectional regression of Tobin's q on the dual class dummy variable, Separation index or insider voting rights and cash flow rights and control variables. tstatistics are in parentheses.

* Significant at the 10% level

.

** Significant at the 5% level

***Significant at the 1% level

****Significant at the 0.5% level

¹⁴ Note- the number of the observations is limited due to the missing R&D Expense and Advertising Expense data in Compustat.

Table B11. Regressions of Market-to-book Equity Ratio

Note –cross sectional regression of market-to-book equity ratio on the dual class dummy variable, Separation index or insider voting rights and cash flow rights and control variables. t-statistics are in parentheses.

Independent variables and summary statistics	Full sample	Subsample of firms that have both classes traded publicly	Subsample of firms in media industries	Subsample of dual class firms only
VOTE	-1.825	2221	-4.332	.9589
•	(506)	(025)	(630)	(.448)
CASH	.5059	-1.066	1.466	-1.782
	(.127)	(116)	(.186)	(614)
Log(size)	0624	05600	4997	.1653
	(403)	(344)	(-1.530)	(.543)
Log(age)	7016	7855	-2.421**	.00607
	(-1.323)	(-1.412)	(-2.229)	(.010)
Fstd	5.464**	5.316		
	(2.148)	(2.033)		
4-digit Industry code dummies	Yes	Yes	Yes	Yes
Intercept	5.213	5.448	13.73	1.598
	(3.117)	(3.131)	(4.582)	(.645)
R ²	.1852	.2969	.0715	3081
Number of observations	2955	2836	235	235

* Significant at the 10% level

** Significant at the 5% level

***Significant at the 1% level

****Significant at the 0.5% level

Table B12. Regressions of Price/Earnings Ratio

Note –cross sectional regression of Price/Earnings ratio on the dual class dummy variable, Separation index or insider voting rights and cash flow rights and control variables. t-statistics are in parentheses.

Independent	Full	Full sample	Subsample of	Subsample	Subsample
variables and	sample		firm that	of firms in	of dual
summary			have both	media	class firms
statistics			classes traded	industries	only
			publicly		
VOTE	-24.14	-47.10*	-87.59	-174.1	4.741
	(-1.281)	(-1.687)	(-1.227)	(873)	(.191)
CASH	26.25	60.10**	104.23	120.3	6276
	(1.261)	(2.020)	(1.443)	(.511)	(018)
Log(size)	1.690**	4.853*****	5.298****	7.874	-4.533
	(2.097)	(5.109)	(5.389)	(.774)	(-1.222)
Log(age)	5.031*	-4.324*	-4.757*	-24.96	-3.309
	(1.823)	(-1.689)	(-1.800)	(766)	(452)
Fstd	-2.310				
	(174)				
Tobin's Q		.4477**	.4532**	2.919	-1.664
		(2.075)	(2.069)	(.623)	(537)
4-digit Industry	Yes	Yes	Yes	Yes	Yes
code dummies					
Intercept	-1.903	9.692	8.010	79.79	54.47
-	(219)	(1.212)	(.970)	(.853)	(1.750)
\mathbb{R}^2	0137	0	.0051	0557	4572
Number of observations	5369	4623	4471	224	217

* Significant at the 10% level

** Significant at the 5% level

***Significant at the 1% level

****Significant at the 0.5% level

Table B13. Regressions of ROA

Independent	Full sample	Full sample	Full sample	Subsample of	Subsample of
variables and	•	•	•	dual class firms	dual class firms
summary statistics				only	only
Dual class dummy	0375				
-	(-1.083)				
VOTE		1544		1130	
		(117)		(-1.546)	
VOTE.0to5			2.043***		11.19*
			(2.590)		(1.889)
VOTE.5to25			0701		-2.536*
			(358)		(-2.017)
VOTE.over25			2085		0816
			(-1.483)		(316)
CASH	.0818	.2374	.2108	.2346**	.5193
	(2.007)	(1.598)	(1.403)	(2.37)	(1.546)
Log(size)	.0428*****	.0429*****	.0484*****	.0239*	.0694
	(9.615)	(9.582)	(10.167)	(1.799)	(1.616)
Log(age)	.0048	.0053	. 0 0815	.0413	.136*
	(.380)	(.420)	(.640)	(1.371)	(1.909)
Fstd				-1.521*****	
				(-3.946)	
Lagged Tobin's q	0259*****	0258	0255*****	.0086	.0393
	(-7.076)	(-7.039)	(-6.967)	(.482)	(.0942)
R&D Expense	-1.340*****	-1.400	-1.400*****		-1.494**
-	(-48.6)	(-7.039)	(-48.56)		(-2.481)
4-digit Industry	Yes	Yes	Yes	Yes	Yes
code dummies					
Intercept	0703	0726	203	0985	953
-	(-1.791)	(-1.831)	(-3.583)	(-3.946)	(-2.343)
R ²	.7491	.7048	.7062	.3538	.2781
Number of observations	2303	2292	2292	156	102

Note –cross sectional regression of ROA (return on assets) on the dual class dummy variable, Separation index or insider voting rights and cash flow rights and control variables. t-statistics are in parentheses.

* Significant at the 10% level ** Significant at the 5% level

***Significant at the 1% level

****Significant at the 0.5% level

Table B14. Regressions of EBIT

Note -cross sectional regression of EBIT/Assets on the dual class dummy variable, Separation index or insider voting rights and cash flow rights and control variables. t-statistics are in parentheses.

Independent variables and summary statistics	Full sample	Full sample	Full sample	Subsample of dual class firms only	Subsample of dual class firms only	Subsample of dual class firms only
Dual class	0598					
dummy	(-1.709)					
VOTE		2199		139	166	
		(-1.576)		(-1.408)	(755)	
VOTE.0to5			2.237****			10.34*
			(2.811)			(1.809)
VOTE.5to25			170			-2.26*
			(082)			(-1.865)
VOTE.over25			271*			102
			(-1.909)			(410)
CASH	.0592	.278*	.257*	.221	.423	.438
	(1.440)	(1.859)	(1.698)	(1.615)	(1.259)	(1.353)
Log(size)	.0557	.0556*****	.0614*****	.0523*****	.0622*	.0594
	(12.40)	(12.32)	(12.80)	(3.527)	(1.725)	(1.434)
Log(age)	0134	0129	0098	.0425	.0773	.0885
	(-1.048)	(-1.002)	(761)	(1.333)	(1.140)	(1.289)
Lagged	0289*****	029*****	028*****	.0444**	.0732*	.0408
Tobin's q	(-7.825)	(-7.781)	(-7.698)	(2.144)	(1.955)	(1.015)
R&D Expense	-1.347	-1.35*****	-1.35*****		-1.834****	-1.756***
	(-46.381)	(-46.26)	(-46.34)		(-3.134)	(-3.022)
4-digit	Yes	Yes	Yes	Yes	Yes	Yes
Industry code						
dummies						
Intercept	0153	0170	159	401	572	691
	(387)	(425)	(-2.78)	(-3.003)	(-1.579)	(-1.760)
R ²	.6978	.6976	.6992	.2168	.3058	.3553
Number of	2303	2292	2292	204	102	102
observations						

* Significant at the 10% level

** Significant at the 5% level

***Significant at the 1% level

****Significant at the 0.5% level

Table B15. Regressions of Operating Cash Flow

Independent	Full sample	Full sample	Full sample
variables and			
summary statistics			
Dual class dummy	0452		
	(-1.314)		
VOTE		171	
		(-1.248)	
VOTE.0to5			2.10***
			(2.690)
VOTE.5to25			142
			(730)
VOTE.over25			214
			(-1.539)
CASH	.0945**	.266*	.249*
	(2.341)	(1.809)	(1.675)
Log(size)	.044****	.044****	.049****
.	(9.995)	(9.952)	(10.47)
Log(age)	.00305	.0036	.0065
	(.243)	(.288)	(.515)
Fstd			
Lagged Tobin's q	026*****	026*****	025*****
	(-7.075)	(-7.04)	(-6.951)
R&D Expense	-1.38*****	-1.38*****	-1.38*****
.	(-48.35)	(-48.24)	(-48.30)
4-digit Industry code	Yes	Yes	Yes
dummies	000/	00.47	154
Intercept	0226	0247	154
D ²	(058)	(629)	(-2.751)
K⁻	.7024	./022	./483
Number of	2298	2288	2288
observations			

Note –cross sectional regression of Operating cash Flow/Assets on the dual class dummy variable, Separation index or insider voting rights and cash flow rights and control variables. t-statistics are in parentheses.

* Significant at the 10% level

** Significant at the 5% level

***Significant at the 1% level

****Significant at the 0.5% level

Table B15. (Continued) Regressions of Operating Cash Flow

Note –cross sectional regression of Operating cash Flow/Assets on the dual class dummy variable, Separation index or insider voting rights and cash flow rights and control variables. t-statistics are in parentheses.

Independent variables and summary statistics	Subsample of dual class firms only	Subsample of dual class firms only	Subsample of dual class firms only	Subsample of dual class firms only
VOTE	151	184	133*	
	(-1.496)	(808)	(-1.699)	
VOTE.0to5				11.01*
				(1.878)
VOTE.5to25				-2.549*
				(-2.050)
VOTE.over25				0916
				(359)
CASH	.221	.473	.251**	.488
	(1.592)	(1.358)	(2.331)	(1.469)
Log(size)	.044****	.0700*	.0258*	.0629
	(2.92)	(1.872)	(1.808)	(1.480)
Log(age)	.0518	.121	.027	.136*
	(1.624)	(1.715)	(.835)	(1.937)
Fstd			-1.37*****	
			(-3.312)	
Lagged Tobin's q	.0296	.0733*	.0073	.390
	(1.406)	(1.890)	(.382)	(.946)
R&D Expense		-1.68**		-1.618**
		(-2.77)		(-2.715)
4-digit Industry	Yes	Yes	Yes	Yes
code dummies				
Intercept	350	740	0207	840
	(-2.570)	(-1.97)	(135)	(-2.086)
R ²	.2539	.2651	.4264	.3322
Number of observations	203	102	156	102

* Significant at the 10% level

- ** Significant at the 5% level
- ***Significant at the 1% level
- ****Significant at the 0.5% level
- *****Significant at the 0.1% level
| Independent | Sub | Sub | Sub | Sub | Subsample | Sub | Subsample |
|----------------|------------|------------|------------|------------|-------------|------------|-------------|
| variables | -sample of | -sample of | -sample of | -sample of | of firms in | -sample of | of firms in |
| and | firms in | firms in | firms in | firms in | media | firms in | non-media |
| summary | media | media | media | media | industries | non-media | industries |
| statistics | industries | industries | industries | industries | | industries | |
| DUAL | | | | | 028***** | 0007 | |
| dummy | | | | | (-3.846) | (068) | |
| VOTE | 070**** | 070**** | 070**** | 073**** | | | 00186 |
| | (-2.981) | (-2.969) | (-2.98) | (-2.664) | | | (057) |
| CASH | .0534* | .0530* | .0533* | .0620* | | | 00505 |
| | (1.925) | (1.909) | (1.923) | (1.913) | | | (147) |
| Log(size) | .007***** | .007***** | .007***** | .009***** | .009***** | .0028** | .003***** |
| - | (5.701) | (5.660) | (5.77) | (6.49) | (7.14) | (2.521) | (-4.03) |
| Log(age) | .020***** | .020***** | .020***** | .021***** | .016***** | .014***** | 009***** |
| | (5.020) | (5.014) | (5.059) | (4.695) | (3.93) | (4.271) | (-3.34) |
| EBIT | | 00271 | | | | | |
| | | (515) | | | | | |
| CSHFLO | 00268 | | | 0033 | 00028 | .00002 | .000382 |
| | (617) | | | (666) | (057) | (.138) | (.491) |
| NET | . , | | 00389 | . , | . , | . , | |
| INCOME | | | (851) | | | | |
| Tobin O | | | . , | .00188** | | | |
| | | | | (2.109) | | | |
| PE ratio | | | | -3.6e-06 | | | |
| | | | | (384) | | | |
| Liquid | | | | .0112 | | | |
| | | | | (1.205) | | | |
| 2-digit SIC | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| code | | | | | | | |
| Intercept | 0570 | 0570 | 0583 | 0713 | 0542 | 0260 | 0170 |
| F | (-5.070) | (-5.036) | (-5.093) | (-5.089) | (-5.276) | (-2.928) | (-1.958) |
| R ² | .3390 | .3387 | .3400 | .4047 | .2283 | .026 | .04 |
| Number of | 220 | 220 | 220 | 176 | 345 | 6355 | 1578 |
| | 229 | 229 | 227 | 170 | 343 | 0222 | 43/0 |
| observation | | | | | | | |

and the second

Table B16. Cross Sectional Regressions of DIVIDEND in 1995

Note –cross sectional regression of DIVENDEND on the dual class dummy variable, Separation index or insider voting rights and cash flow rights and control variables. DIVIDEND is defined as Cash Dividend/Total Equity Capital. t-statistics are in parentheses.

- * Significant at the 10% level
- ** Significant at the 5% level
- ***Significant at the 1% level
- ****Significant at the 0.5% level

*****Significant at the 0.1% level

APPENDIX C

APPENDIX FOR CHAPTER 3: DUAL-CLASS STOCK, INVESTMENT AND CASH FLOW

Independent variables	Full sample	Full sample	Subsample	Subsample of
and summary statistics	-	-	of dual	dual class
			class firms	firms
Sales growth_1	.000337	.00024	.000894	.0141
-	(.851)	(.590)	(.303)	(1.214)
Tobin's q_1	.0067*****	.0108*****	.00767	.0135*
	(7.542)	(9.493)	(.901)	(1.742)
Cash flow	.0149*****	.02805*****	.06169	0284
	(3.552)	(3.322)	(.744)	(374)
Cashflow*Voteright		.1215		5297***
		(.792)		(-2.822)
Cashflow*Cash		1698		1.291*****
		(-1.091)		(6.364)
4-digit SIC code	Yes	Yes	Yes	Yes
Intercept	.0685	.0604	.0705	.0498
	(27.717)	(20.399)	(4.730)	(4.507)
\mathbb{R}^2	.2245	.2504	.6006	.9146
Number of observation	5766	4494	300	196

Table C1. Investment Regression Results

Note –cross sectional regression of Investment/Asset on cash flow, interaction term of cash flow and insider ownership of voting rights and interaction term of cash flow and insider ownership of cash flow rights, and control variables. t-statistics are in parentheses.

* Significant at the 10% level

** Significant at the 5% level

***Significant at the 1% level

****Significant at the 0.5% level

*****Significant at the 0.1% level or lower

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