Which Monitors Monitor the Most?
Dual-Stock Structure and Corporate Governance

Hoje Jo & Young Sang Kim

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** Jo is in the Department of Finance, Leavey School of Business, Santa Clara University, 500 El Camino Real, Santa Clara, CA 95053-0388, (408) 554-4779, (408) 554-4029 (fax), Email: hjo@scu.edu. Kim is in the Department of Finance, College of Business, Northern Kentucky University, BEP 425, Nunn Drive, Highland Height, KY 41099, (859) 572-5160, (859) 572-3321 (fax), Email: kimy1@nku.edu. We thank Sanjiv Das, Yongtae Kim, N. Prabhala, and Moon H. Song for valuable comments. We also greatly appreciate Andrew Metrick for his generous sharing of the dual-class firm data and David Reeb for providing of family firm data. Jo acknowledges the Dean Witter Foundation and Breetwor Fellowship for financial support.

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Abstract

We examine the effects of several corporate governance and monitoring mechanisms on the choice of dual-class status and firm performance of dual-class firms. Employing 736 firms that implemented dual-class and 7,027 single-class firms during the period 1996-2002, we find that dual-class firms tend to be larger, higher director ownership and institutional ownership, lower blockholdings, and smaller fraction of independent outside directors on their board than those of single-class firms. In addition, we observe that dual-class firms are followed by smaller number of security analysts. After correcting for endogeneity bias, our regression results show that firms with higher analyst coverage and lower wedge, measured as the difference between voting rights and cash flow rights, are strongly associated with Tobin's q. In contrast, blockholders' ownership, board independence, and institutional ownership play a relatively insignificant role in enhancing Tobin's q. We interpret our results to mean that security analysts are the most effective monitoring mechanism that influence both the dual-class choice and firm performance. Our results are not attributed either to the difference in firm size or to an industry effect.

Key words: Dual-class firms; corporate governance; firm performance

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One of the puzzles in the dual-class firms literature is that why many firms, around 6% of all public firms (Gompers, Ishii, and Metrick (2006)), still cling to the dual-class stock systems that give common holders one share for one voting class while another superior class of stock, with vastly greater voting power, is given only to founding members or other controlling insiders in this much-vaunted age of shareholder governance. Bebchuk, Kraakman, and Triantis (2000) show that common arrangements, such as stock pyramids, cross-ownership, and dual-class stocks separating control from cash flow rights have the potential to create very large agency costs that are likely to exceed the agency costs of highly leveraged capital structures. In modern corporations, stockholders rely on internal and external governance mechanisms to help resolve agency problems that arise from the separation of ownership and management (Jensen and Meckling, 1976). In the absence of an effective takeover threat due to superior voting rights, a dual-stock structure raises important questions on corporate governance and calls for thorough investigation of alternative governance mechanisms that provide internal and external monitoring for necessary balance and check.

Prior studies suggest that under the dual-stock structure, managers are better able to negotiate with potential acquirers to force a higher price for the firm, and shareholders benefit when the managers have multiple, typically ten, voting rights through a superior class of stock. This incentive-alignment explanation is consistent with shareholder-wealth maximization. Conversely, there is another motive for issuing a superior class of stock to make the firm more difficult to take over. This can entrench inefficient managers and make the managers of the firm less subject to market discipline. This management-entrenchment explanation posits the redistribution of voting rights and potential reduction of shareholder wealth.[1] Although these studies enhance our understanding of the important benefits and costs of dual-stock structure, relatively little is known about the relation between dual share structure and governance

[1] It is also possible that the dual-stock structure enables managers entrench and the same managers obtain greater bargaining power in the event of a control contest.

mechanism for monitoring. In particular, it is not completely clear whether the dual share structure is a representative of effective corporate governance or it goes against certain rules on effective corporate governance, given that the choice of dual-stock structure and firm performance are endogenously determined.

In this paper, we examine which governance mechanism monitors the most the managers under dual-class firms and how various internal and external governance mechanisms affect the choice of dual-class structure and firm performance of dual-stock structure after correcting for endogeneity. We examine two categories of governance devices: internal (ownership concentration and board structure) and external (institutional ownership and monitoring by security analysts). Because the dual share structure is designed as a defensive tactic against external monitoring through take-over pressure, take-over pressure itself is not a convincing tool for external monitoring. Given the fact that there is not a clear-cut governance mechanism to monitor the management behavior of dual-class firms, contrasting dual-class and single-class firms provides an excellent experiment for exploring the effectiveness of vastly different corporate governance systems and their effects on firm performance while controlling for endogeneity and other confounding factors.

Recently, Gompers, Ishii, and Metrick (2006) document the determinants of dual-class firms and their effects on firm performance by disentangling the incentive and entrenchment effects while dealing with the endogeneity problem of valuation and ownership. Their study and other previous studies, however, pay little attention to the relation between various governance/monitoring mechanisms of dual class and those of single-class structure and their impact on firm performance.[2]

Well-designed corporate governance systems would either align managers' incentives with shareholders through active monitoring on managers' decision making through inside block ownership, outside independent directors, outside institutional ownership, and external monitoring by security analysts.

[2]Moyer, Rao, and Sisneros (1992) examine changes in board structure, debt ratio, dividend payout ratio, analyst following, and institutional holding around 114 dual class recapitalizations. Bacon, Cornett, and Davidson, III (1997) examine stock price reactions to announcements of 77 dual class recapitalizations when they relate to characteristics of the board of directors. Both studies, however, did neither address the relation between the dual-class structure and more general corporate governance nor the endogeneity problems.

Hence, firms with effective corporate governance should put greater emphasis on value maximization.

Based upon the sample of entire dual-class firms during the 1996 - 2002 period compiled by Gompers, Ishii, and Metrick (2006), our empirical results indicate the following. Dual-class firms tend to be larger, have lower block and institutional ownership, have a lower fraction of independent outside directors on their board, and have a smaller number of analysts following the firm. A further analysis shows that these findings can not be attributed either to the difference in firm size or to an industry effect.

We perform the first-stage probit regression analysis of the dual-class choice. The results show that the likelihood of opting for dual-class status is significantly and positively related to family firms, firms in media industry, a joint role of CEO being a chair or member of the nomination committee, percentage of director shares, and percentage of institutional share ownership but inversely associated with anti-takeover defense or Bebchuk et al's (2000) entrenchment index, percentage of outside independent board, the sum of total blockholdings, and analyst coverage.

In the second-stage analysis, we find that Tobin's q or industry-adjusted q is adversely related to anti-takeover defense or managerial entrenchment index, dual role of CEO and chair of the board, and board size while Tobin's q is positively related to percentage of director shares and analyst following. Our results further suggest that low wedge and high analyst following increase Tobin's q while high wedge and low analyst following decrease Tobin's q, implying that analyst following provides additional monitoring role for dual-class firms. Blockholders' ownership, board independence, and institutional ownership, on the other hand, plays little, or relatively insignificant, role in enhancing Tobin's q. Surprisingly, however, outside independent directors, insider blockholder ownership, and outside institutional ownership do not contribute to add firm value. Combined together, as a third party information intermediary between dual-class firms and financial markets, financial analysts provide most effective monitoring role out of all governance and monitoring mechanisms.

This paper contributes to the literature on dual-class structure in four distinct ways. *First,* we conduct full examination on the determinants of the dual-stock structure and provide insights into why firms choose to opt for dual-class structure by using all the available dual-class firms obtained by

Gompers, Ishii, and Metrick (2006) from 1996 to 2002. *Second*, by using two-stage approach, including the first-stage probit regressions and the second-stage Heckman regressions and instrumental variables approach, we control the endogenous treatment effects between the choice of dual-class structure and firm performance, and potential selection bias that have received relatively little attention in previous studies. *Third*, we use more extensive governance and monitoring mechanisms and revisit the incentive-alignment hypothesis and managerial entrenchment explanation in light of corporate governance. By appropriately controlling for the endogenous treatment effects, we are able to determine the relative importance of the incentive-alignment and managerial entrenchment in the dual-stock structure. *Fourth*, we anticipate that the role of the corporate governance in the choice of dual-stock structure and the impact of that choice on firm performance might be different for each of the internal and external governance mechanism. We believe that this is the first time in the literature that the role of the corporate governance has been examined across different aspects of the choice and performance of the dual-class structure.

Our paper proceeds as follows. Section I discusses our sample data and measurement of variables, and Section II presents our hypotheses. Section III presents our econometric specifications. Section IV presents empirical results with conclusions in Section V.

I. Data and Measurement

A. Data

We use the entire data from a sample of Gompers, Ishii, and Metrick (2006) during the period 1996 to 2002. The sample of the dual-class firms comes from a search of the Security Data Company (SDC) (as amended by Jay Ritter), S&P's Compustat, the Center for research in Security Prices (CRSP), and the Investor Responsibility Research Center (IRRC).

We construct our final sample of dual-class firms using a several criteria. Specifically, (i) the firm must be available from the IRRC director database; (ii) insider blockholder data should be available; (iii) the data for outside institutional holdings should be available from CDA/Spectrum 13(f) filings. These filings contain quarter information on common-stock positions greater than 10,000 shares or $200,000 for each institution with more than $100 million in securities under management; and (iv) the number of analysts following a firm should be available from *I/B/E/S* database. We exclude firms in the utilities and financing industries to avoid confounding regulation factor. We also require that sufficient Compustat and CRSP data are available for our tests. This produces a sample of 736 dual-class firms out of entire dual-class firms that Gompers, Ishii, and Metrick (2006) identify, and 7,027 single-class firms during the sample period. Actual samples used in the analyses are slightly different, since the data availability varies for each regression analysis.

Because the IRRC does not publish volumes every year, and publish volumes in 1995, 1998, 2000, and 2002, following Bebchuk and Cohen (2005) and GIM (2006), we fill in missing years by assuming that the governance provisions reported in any given year were also in place in the year preceding the volume's publication. For instance, in the case of 1999, for which there was no IRRC volume in the subsequent year, we assume that the governance provisions were the same as reported in the IRRC volume published in 1998. We also verify that using a different filling method based on the arithmetic average of 1998 and 2000 to assume the case of 1999 does not change the results.

B. Measurement of Variables

In our tests, all financial variables are taken from the Compustat tapes following Gompers, Ishii, and Metrick (2006). We use four variables measuring the quality of corporate governance systems—managerial equity ownership and control rights, board independence, outside institutional ownership, and the number of analyst following a firm—and collect the other governance data from IRRC.

We measure external monitoring by equity ownership of outside institutional holders and is measured as the sum of greater-than-five percent owners that are unaffiliated with the firm (PCTINSTI). We also measure external analyst monitoring by the number of analysts who follow the firm from the Institutional Brokers Estimate System (*I/B/E/S*) database. Since the number of analysts is highly skewed to the right (Lim (2001) and Bushman, Piotroski, and Smith (2005)), we measure analyst coverage with the natural logarithm of one plus the number of analysts following the firm (LOGANAL). To measure the corporate governance's effectiveness, we distil several structural measures of corporate governance from the IRRC Director Database (e.g., board characteristics such as independent outside board proportion, board committee affiliation, insider influence, etc).

With these corporate board variables, we compare and contrast effective (good) corporate governance vs. ineffective (bad) corporate governance. We first focus on good corporate governance, using the independent outside director because the rise of such directors has been a major trend over the last two decades. For instance, Hermalin and Weisbach (1998, 2003) suggest that the independent outside director often plays a monitoring role, and the director's effectiveness is a function of the board's "independence" from management. Hermalin and Weisbach (1998), Raheja (2005), and Harris and Raviv (2006) model the determinants of board structure, specifically the role of insiders and outsiders. While definitions of "independence" vary, most agree that in order to be independent, a director must have no connection to the firm other than having a seat on the board. Monks and Minow (2004) suggest that efforts have been directed not just by making sure that boards have independent directors, but also by giving them a structure that makes it possible for them to monitor more effectively. Our definition of an independent director follows that of the IRRC, which defines an independent outside director as a director elected by shareholders who is not affiliated with the company. Since Linck, Netter, and Yang (2007) suggest that board size, board independence, and board leadership are important determinants of board structure, we use board size (BSIZE), board independence measured by the proportion of outside independent directors (PCTINDEP), and board leadership by a dummy variable of one if the CEO is the chair of the board (DUALITY).

Following Larcker, Richardson, and Tuna (2004), we classify affiliated presence or insider influence as contributing to bad governance. Yermack (1996) also claims that the presence of affiliates or insiders is assumed to corrode the board's independence. Klein (1998) further argues that the presence of affiliated directors on the board often compromises the independence of the board and various committees. See the definitions of governance, monitoring, and other control variables in Appendix A.

We measure firm performance with Tobin's q. We also use industry-adjusted q (the natural log of firm's q divided by the median q in the firm's industry) instead of levels of q as a measure of firm value (Campbell (1996)). The advantage of using industry-adjusted q is to neutralize the effect of specific industries on Tobin's q.

II. Hypotheses: Dual-Class Structures and Corporate Governance

Gompers, Ishii, and Metrick (2006) suggest that if the potential benefits are larger than the related costs, then insiders will bargain with investors and obtain a dual-class structure. They also find that the significant determinants of dual-class firms include firms with family names, firms in the media industry, the percentage of sales in its first year, the percentage of sales located in this firm's region, and the percentage of the IPO-year sales of the firm relative to other firms with the same IPO year.

On one hand, dual-class firms might prepare some necessary precondition of governance readiness to go for dual-class status. On the other hand, however, since there is no clear monitoring mechanism for dual-class structure, we assert that there should be at least one effective monitoring mechanism out of all internal and external governance and monitoring mechanisms for check and balance of potential managerial entrenchment through dual-class structure. For instance, board independence can be important in monitoring the managerial behavior of top management. Fama and Jensen (1983) maintain that boards can be effective mechanisms to monitor top management on behalf of dispersed shareholders by effectuating management appointment, dismissal, suspension, and reward. Several studies suggest that top managers are more vigorously monitored when the board of directors is controlled by independent outside directors (see, e.g., Berger, Ofek, and Yermack (1997), Brickley, Coles, and Terry (1994), Byrd and Hickman (1992), and Weisbach (1988)).[3] Bacon, Cornett, and Davidson, III (1997) suggest that as dual-class firms

[3] Other studies, however, point towards a paradoxical insignificant or negative association between governance quality, as proxied by the percentage of outside directors on the board, and firm value. Morck et al. (1988), Hermalin and Weisbach (1991) and Bhagat and Black (2001) find no significant relation between board independence and Tobin's q. Coles et al. (2007) examine the relation between board structure and firm value, and find that one board size or composition does not provide the same monitoring benefits for all firms. Furthermore, Hermalin and Weisbach (1991), Mehran (1995), Klein (2000), and Bhagat and Black (2001) find an insignificant

are already more insider-controlled than are single-class firms, outside directors have so little influence in these firms.

Internal control systems, such as corporate managers and board of directors are not sufficiently effective mechanism to ensure corporate transparency and self-monitor the performance of firm (Jensen, 1993). Consequently, institutional investors who own blocks of firm ownership have become increasingly important. Agency theories argue that pressures from external investors, such as institutional investors, are necessary to motivate managers to maximize firm value instead of pursuing managerial objectives (Jensen (1986)). Shleifer and Vishny (1986) and Allen, Bernardo, and Welch (2001) find that institutional investors are more willing and able to monitor corporate management than are smaller and more diffuse investors. Additionally, large outside blockholders, recognizing that managers have a tendency to skew decisions in directions that would benefit themselves, have an incentive to monitor managers (Demsetz and Lehn (1985), Jensen (1989), and Shleifer and Vishny (1986)).

Additionally, Moyer, Rao, and Sisneros (1992) argue that external monitoring by institutional stockholders and security analysts should be greater where the management of dual-class firms have considerable latitude to consume perquisites. They show that dual class recapitalizations are associated with an increase in external monitoring by institutional investors and security analysts. In principle, an improved corporate transparency will reduce the information asymmetry between insiders and outsiders and discourage managerial self-dealings.

Prediction 1: The choice of dual-class structure is associated with some governance and monitoring mechanisms after controlling for confounding factors.

Overall, governance mechanisms should be closely related to the firm's performance. Jensen and Meckling (1976) argue that increased equity ownership by managers provides them with incentives to make value-maximizing decisions. Morck, Shleifer, and Vishny (1988) and McConnell and Servaes (1990)

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relation between board independence and accounting performance. Agrawal and Knoeber (1996) find that Tobin's q decreases with an increase in the proportion of outside directors. Thus, the evidence regarding the merits of independent boards remains largely inconclusive.

document a relation between management ownership and firm value. Gompers, Ishii, and Metrick (2006) show hat Tobin's q is positively related to the cash flow rights of dual-class firm managers and negatively related to voting rights. They suggest that total percentage of cash flow ownership by officers and directors (CF), CF^2, total percentage of vote owned by officers and directors (VOTE), and $VOTE^2$ are relevant in Tobin's q regressions. We use the difference between voting and cash flow ownership by officers and directors (WEDGE).

Prediction 2: (a) Tobin's q is associated with governance and external monitoring variables; (b) The impact of external monitoring on Tobin's q should be significant especially when the voting control of dual-class firm managers is outrageous.

III. **Econometric Specifications**

Due to the endogenous nature of the choice of the dual-class structure and firm performance, we anticipate that the role of the corporate governance in the choice of dual-stock structure and the impact of that choice on firm performance might be heterogeneous for each of the internal and external governance mechanism. We believe that this is the first time in the literature that the role of the corporate governance has been examined across different aspects of the choice and performance of the dual-class structure.

A. Endogenous Treatment Effects

Firm performance (i.e., Tobin's q) in a dual-class firm comes from two broad sources of unique features including the choice of dual-class structure and corporate governance. To address this issue properly, we conduct an endogeneity correction for the treatment effects. Without correcting the endogeneity problem in which firms with certain governance structure choose dual-class stocks to begin with, the contribution of dual-stock structure to firm performance, the treatment effect, will be overstated (Green, 1993). *First*, the choice of dual-class firms are related with certain governance mechanisms, and dual-class structure is an efficient vehicle to retain control without diluting ownership. Amongst two firms that appear a priori similar in prospects, the fact that one of them is selected as dual-class by the management is evidence that the firm is of unique quality (ex-post to being vetted by the management, but ex-ante to effort added by the management), since the dual-class determination effectively thwart threats from hostile takeovers. *Second*, dual-class firms may need effective external monitoring as there is no clearly known effective monitoring mechanism to prevent the managerial entrenchment of dual-class firms.

A regression of Tobin's q on various governance and firm characteristics and a dummy variable for the choice of dual-class structure allows a first pass estimate of whether dual-class structure impacts performance. However, it may be that dual-class firms are simply of higher (or lower) quality and deliver better (or worse) performance, whether or not they chose to take dual-class stocks. In this case, the coefficient on the dummy variable might reveal a value-add from the dual-stock structure, when indeed, there is none. Hence, we correct the specification for endogeneity, and then examine whether the dummy variable remains significant.

Greene (1993) provides the correction for endogeneity required here. We briefly summarize the model required. The performance regression is of the form:

$$Y = \beta' X + \delta S + \varepsilon, \quad \varepsilon \sim N(0, \sigma_\varepsilon^2)$$

where *S* is the dummy variable taking a value of 1 if the firm is a dual class, and zero otherwise, and δ is a coefficient that determines whether performance is different on account of dual-class choice. If it is not, then it implies that the variables *X* are sufficient to explain the differential performance across firms, or that there is no differential performance across the two types of firms.

However, since these same variables determine also, whether the firm chooses dual-stock structure or not, we have an endogeneity issue which is resolved by adding a correction to the model above. The error term ε is affected by censoring bias in the sub-samples of dual-class and single-class firms. When S=1, i.e. when the firm's stock is dual class, then the residual ε has the following expectation (see Greene, 1993):

$$E(\varepsilon \mid S=1) = E(\varepsilon \mid S^* > 0) = E(\varepsilon \mid u > -\gamma' X) = \rho\sigma_\varepsilon \left[\frac{\phi(\gamma' X)}{\Phi(\gamma' X)} \right]$$

where $\rho = Corr(\varepsilon, u)$, and σ_ε is the standard deviation of ε. This implies that

$$E(Y \mid S=1) = \beta' X + \delta + \rho\sigma_\varepsilon \left[\frac{\phi(\gamma' X)}{\Phi(\gamma' X)} \right]$$

For estimation purposes, we write this as the following regression equation:

$$Y = \delta + \beta' X + \beta_m m(\gamma' X)$$

where $m(\gamma' X) = \phi(\gamma' X)/\Phi(\gamma' X)$, and $\beta_m = \rho\sigma_\varepsilon$. Thus, $\{\delta, \beta, \beta_m\}$ are the coefficients estimated in the regression. As usual, $m(\gamma' X)$ is also known as the inverse Mill's ratio.[4]

Likewise, for firms that are not dual class, we have the following result from Greene (1993):

$$E(Y \mid S=0) = \beta' X + \rho\sigma_\varepsilon \left[\frac{-\phi(\gamma' X)}{1 - \Phi(\gamma' X)} \right]$$

[4] The inverse Mills' ratio (sometimes also called 'selection hazard') is used in regression analysis to take account of a possible endogeneity bias. If a dependent variable is censored, i.e. not for all observations a positive outcome is observed, it causes a concentration of observations at zero values. This problem was first acknowledged by Tobin (1958), who showed that if this is not taken into consideration in the estimation procedure, an ordinary least square estimation (OLS) will produce biased parameter estimates. With censored dependent variables there is a violation of the Gauss-Markov assumption of zero correlation between independent variables and the error term. Heckman (1976, 1979) proposed a two-stage estimation procedure using the inverse Mills' ratio to take account of the endogeneity bias. In a first step, a regression for observing a positive outcome of the dependent variable is modeled with a probit (or logit) model. The estimated parameters are used to calculate the inverse Mills' ratio, which is then included as an additional explanatory variable in the OLS estimation.

This may also be estimated by linear cross-sectional regression.

$$Y = \beta' X + \beta_m m'(\gamma' X)$$

where $m'(\gamma' X) = -\phi(\gamma' X)/[1-\Phi(\gamma' X)]$, and $\beta_m = \rho\sigma_\varepsilon$.

The estimation model will take the form of a stacked linear regression comprising both equations. This forces β to be the same across all firms without necessitating additional constraints, and allows the specification to remain within the simple OLS form. If δ is significant after this endogeneity correction, then the empirical evidence supports the hypothesis that dual-class value-add is a driver of differential performance. We index firms in the data set with the variable *i*, where *i*=1, …, *N*. For each firm there is a set of dual or single status, and these are indexed by variable *j*. This notation permits us flexibility in analyzing the data either at the firm level or at the status of the dual-class choice. If the coefficients $\{\delta, \beta_m\}$ are significant, then the expected difference in performance for each dual-class choice (*i*,*j*) is

$$\delta + \beta_m [m(\gamma_{ij}' X_{ij}) - m'(\gamma_{ij}' X_{ij})], \quad \forall i, j.$$

The method above forms one possible approach to addressing treatment effects.

B. Instrumental Variable Methods

Another approach is to estimate probit model first, and then to set $m(\gamma' X) = \Phi(\gamma' X)$. This is known as the instrumental variables approach that Gompers, Ishii, and Metrick (2006) employ. They also distinguish endogeneity problems from the sample-selection problems. Selection bias may arise even if the error terms are not correlated with the explanatory variables. Dual-class firms may not be representative of all firms for the relation between governance structure and firm performance.[5] Although it is not possible to correct for both the endogenous treatment effects and selection bias at the same time, in order to solve the selection bias problem, Heckman and Robb (1985) and Moffitt (1999) suggest the instrumental variable (IV) method focusing on finding a variable (or variables) that influences the dual-class choice but does not influence Tobin's q (and is thus not correlated with the random error term in the Tobin's q equation).

Abadie (2000) maintains that because the instrumental variable is not correlated with the random error term, it can be used in the estimation without introducing bias even when the second-stage performance equation is nonlinear. Moffitt (1999) suggests that each IV, that is indeed uncorrelated with the random error term in the Tobin's q equation, will yield unbiased estimates. However, some IVs will yield more precise estimates. The more highly correlated is the IV with the choice of dual-stock structure, the more precise will be the estimates of performance impact. Thus the challenge in IV estimation is to find an appropriate instrumental variable that is highly correlated with the first pass choice but uncorrelated with the second pass performance. Unfortunately, it is often hard to find variables that meet both these requirements, and therefore difficult to find good IVs among the many potential IVs.

IV. Empirical Results

A. Univariate Tests and Bivariate Correlations

To examine the potential difference between dual-class firms and single-class firms, we compare and contrast firm and governance characteristics. In Table I, we present means and medians of the control and test variables. Based on firm characteristics reported in Panel A, dual-class structures are, on average, used more by family firms, media industry firms, larger firms, highly leveraged firms, and firms using higher advertising expense ratio. They are also adopted by firms in states with less anti-takeover

[5] Sample selection bias and endogeneity bias refer to two distinct concepts, both entailing distinct solutions. In general, sample selection bias refers to problems where the dependent variable is observed only for a restricted, nonrandom sample. Endogeneity arises when an independent variable included in the model is potentially a choice variable, correlated with unobservables relegated to the error term. The dependent variable, however, is observed for all observations in the data (see Millimet, 2001).

laws, firms with lower R&D expenditure ratio, relatively younger firms, and firms with a smaller representation in S&P 500 index than single-class status.

The difference between dual-class firms and single-class firms in terms of governance characteristics are reported in Panel B. Dual-class firms are, on average, associated with lower take-over defense such as lower GIM (2003) g index, lower classified board, and lower DUALITY (i.e., if a CEO is also a chair of the board). Also, dual-class status is adopted by firms with lower board independence, lower total block ownership, lower percentage of institutional share ownership, and lower Tobin's q. Furthermore, they are less covered by security analysts. In contrast, however, they have higher proportion of CEO who is a chair or member of nomination, higher percentage of institutional ownership, and larger board size.

Table II presents the Spearman correlation matrix for the variables discussed in the previous section. Consistent with the inverse association between dual-class status (DUAL) and board independence (PCTINDEP) or analyst coverage reported earlier, DUAL is negatively related to analyst following and PCTINDEP. The Spearman correlation coefficient between DUAL and PCTINDEP (LOGANAL) is relatively high in absolute number, at -0.24 (-0.12). Likewise, the Spearman correlation coefficient between DUAL and g index (PCTINSTI) is -0.19 (-0.03). All of the above correlations are statistically significant (p-values < 0.01). All governance variables (variable numbers 17 through 25) are significantly correlated with the DUAL variable as well. Tobin's q is negatively related to the DUAL variable (-0.04, with p-values < 0.01).

B. The Determinants of Dual-Stock Structure

Here, we develop a detailed empirical model to understand the differences between the dual-stock structure and single-stock structure. To answer this question, our model relies on a probit analysis of the choice decision, with the following model:

$$\Pr[DUAL_{it} \mid Z_{it}] = \Phi[B'Z_{it}]$$

Where $DUAL_{it}$ is a dummy variable equal to one if firm *i* is a dual-stock structure in year *t*, and 0 otherwise. Z_{it} is a vector of firm, governance, industry, or market characteristics at the time of firm *i*'s choice of the dual-class structure. *B* is a vector of coefficients.

We assert that there are characteristics of the firm and of the industry and market that lead to a firm choosing the dual structure, and we choose a large number of variables to model the probability of the choice. Based on the previous literature and our chosen governance metrics, we include the following variables as components of *Z*:

GIM proxy variables: Gompers, Ishii, and Metrick (GIM) (2006) suggest that the determinants of dual-class status might include the variables including industry, media industry based on DeAngelo and DeAngelo (1985) who find that media firms are more likely to have dual-class structure, if the firm is named for one of the insiders, i.e., Trumph Casino, State Law anti-takeover index from Gompers, Ishii, and Metrick (2003), sales rank, profit rank, the percentage of firms and sales in their geographical region. Similar to them, we also use industry, media industry (MEDIA), State Law anti-takeover index (STATELAW), family firms (FAMFIRM), ROA, natural log of the change of ROA (CHGROA) to measure profitability, and diversification dummy (SEGDIV). We choose family firms instead of GIM's name variable because the private benefits of control should be more relevant to family firms, following the spirit of Villalonga and Amit (2006).

Governance and monitoring variables: We hypothesize that internal and external monitoring or governance mechanisms should be related to the choice of dual-class status. Thus, we include various internal and external governance variables including the number of anti-takeover provisions using the GIM (2003) g index (GINDEX), Bebchuk et al's (2000) entrenchment index (ENTINDEX), dummy variable of 1 if the CEO is a member of the nomination committee (CEONUM), the percentage of director shares (PCTDIRSHR), natural log of the sum of insider blockholdings (LOGBLKS), the percentage of outside independent directors (PCTINDEP), the percentage of institutional ownership (PCTINST), and the natural logarithm of one plus the number of analysts following the firm (LOGANAL). Bebchuk and Cohen (2005) maintain that staggered boards bring about a reduced firm value. Thus, we also include classified or staggered board (CBOARD) to examine the choice issue.

Control variables: Other control variables include firm size measured by the natural log of total assets (LOGTA), R&D expenditures divided by sales revenue (RNDR), total debt divided by total assets (DEBTR), the age of the firm (FIRMAGE), return on assets (ROA), sales growth (SGROWTH) and market sentiment dummy of 1 if the IPO market is hot during the 1996~2000 period and 0 otherwise (hot).

We estimate the choice of dual-class status using a probit function. Four different models are attempted, and the results are presented in Table III. We estimate four different models with different sets of explanatory variables to compare and contrast different impacts of GIM proxy variables and corporate governance variables. Progressing from Model (1) to Model (4), we replaced or added some of the explanatory variables so as to investigate the role of governance and monitoring in the analysis.

Consistent with the intuition and the prior literature, from Models (1) to (4), we can see that many of our chosen variables are highly significant in explaining the likelihood of choosing dual-class status. In model (1), we only include GIM proxy variables as regressors. Model (1) shows that firms in media industry and family firms are more likely to choose dual-class stock, supporting GIM (2006) while the coefficients on STATELAW, ROA, CHGROA, and diversification dummy (SEGDIV) are insignificant. Model (2) shows the same results with the industry adjustment. Basically, the results are similar except the significance of family firms and ROA disappears. In model (3), we report the results of governance variables only. Model (3) suggests that the coefficients on GINDEX, PCTINDEP, LOGBLKS, and LOGANAL are significantly negative at the five percent significance level, implying that firms with higher proportion of outside independent director (PCTINDEP), higher numbers of analysts following the firm (LOGANAL), or higher numbers of anti-takeover provisions (GINDEX) are likely not to choose dual-class structure. If firms do not have sufficient anti-takeover provisions, then dual-class status is a natural choice for those firms. These findings also indicate that internal and external monitoring by independent board, inside blockholders, and security analysts is related to the choice of dual-class stocks.

In contrast, the coefficients on CEONOM, PCTDIRSHR, and PCTINSTI are significantly positive, suggesting that if CEO is one of the members of nomination committee (CEONOM), or if the equity ownership of directors (PCTDIRSHR) are high, or if the percentage of institutional ownership (PCTINSTI) is high, those firms tend to choose dual-class structure more. Other variables are insignificant. In model (4), we report the results when we include both GIM proxy variables and governance variables. The results of governance variables are qualitatively similar to those of model (3) while the coefficients on GIM proxy variables become insignificant.

So far, we use board independence to measure the quality of the firm's governance. But for two reasons there may not be a one-to-one relation between governance quality and board independence. First, recent research by Coles, Daniel, and Naveen (2007), Boone et al. (2007) and others indicates that board independence reflects such things as firm diversification, firm size, firm age, and insider ownership. They claim that board independence reflects, and is driven by, other characteristics of the firm and its line of business. That is, board independence is endogenously determined by firm and managerial characteristics. This indicates that board independence may or may not be an indicator of governance quality. Suppose, for example, that ceteris paribus, board independence does improve governance. Then firms with few independent directors might have more blockholders, or fewer takeover defenses, or more bond covenants, to offset the effects of having few independent directors. The result could be that such firms have better governance, not worse. Thus, we include such variables including firm diversification, firm size, firm age, insider ownership, blockholder ownership, GIM index, etc in the independent director equation to address the endogeneity issue.

Table IV shows the results based on two-stage least square (2SLS) regressions where both the dual-class status and the percentage of outside independent directors are dependent variables. We employ the 2SLS estimation method described in Maddala (1983) for simultaneous equations models in which one of the endogenous variables is continuous (PCTINDEP) and the other endogenous variable is dichotomous (DUAL). The results from the 2SLS regression models again support the monitoring role of outside independent directors and external security analysts. We find that the coefficients on the PCTINDEP and LOGANAL are negative and statistically significant (p-value < 0.01). We also find that the coefficients on PCTINSTI, PCTDIRSHR, and CEONOM are significantly positive. These results suggest that certain governance structure is important in determining the dual-class structure. Unlike from the finding in model (4) of Table III, the coefficients on family firms, media, and state law index are positive and significant (p-values < 0.01), supporting GIM (2006). Similar to the results in models (3) and (4) of Table III, we do not find any significant relation between the dual-class choice and ROA, CHGROA, CBOARD, LOGTA, DEBTR, RNDR, and SEGDIV. Overall, the results in Table IV suggest that GINDEX, PCTINDEP, and LOGANAL are negative functions of dual-class choice, whereas dual-class choice is a positive function of FAMFIRM, MEDIA, PCTINST, PCTDIRSHR, and CEONOM. In contrast, firms with high director ownership and if the CEO is a member of nomination committee, they tend to choose dual-class status. These results are supportive of our prediction 1.

However, we also find that the causality also runs from some governance and control variables to board independence. Because both dual-class status and board independence do not change frequently, simple 2SLS results may not capture causality precisely. Nevertheless, this reverse causality suggests after correcting for potential simultaneity bias, the possibility that firms choosing a dual-class structure strongly tend to avoid outside independent directors (with t-values of -89.11~ -100.26) is much greater than the possibility that firms with higher proportion of independent directors keep away from dual-class status (with t-values of -12.04~ -12.74). It seems that firms opting for dual-class status prefer to maintain their control by not having many outside independent directors to go for dual-class structure.

Recently, Hahn and Hausman (2002, 2003) and others argue that if instruments are only weakly correlated with the endogenous variables and the degree of endogeneity is not strong enough, then statistical inference based on simultaneous equation systems can pose a significant bias. Donald and Newey (2001) and Stock, Wright, and Yogo (2002) recommend culling the weak instruments using only the strong variables. Hahn and Hausman (2003) also suggest that using an estimate of the reduced-form parameters of only the endogenous instrumental variables is better than using all the instruments. Accordingly, we set aside the weak instruments and use only the significant variables in our simultaneous model. Results from this exercise reported in the right side of Table IV indicate that our findings are robust. In any case, the results from 2SLS regression model suggest that the potential simultaneity bias does not significantly change our inferences concerning the effect of governance and monitoring on the dual-class choice and the reverse causality.

Table V shows the results of 2SLS with two dependent variables of DUAL and LOGANAL. Unlike from the results from board independence variable, we find similar significance with close t-value for both sides of causality, implying that security analysts tend to shun away from firms with dual-class status while firms with dual-class structure do not want to have excessive analyst coverage. Because dual-class firms continue to maintain private benefits of control and do not want to make their information environment transparent enough, dual-class firms are not terribly attractive for security analysts to analyze. In addition, although the top management of dual-class firms can control the numbers of outside independent directors, they can not control the number of analysts following the firm. Accordingly, security analysts, as third party information intermediaries, can provide an indirect monitoring mechanism in the top management's decision making of dual-class status. We consider this evidence as a *new* important finding.

To show the monitoring effect of financial analysts on the other choice of WEDGE, we report the coefficient of estimates from the ordered probit model in Table VI explaining the determinants of dual class structure in our total sample. The dependent variable is the WEDGE, which is a dichotomous variable that the order is based on four quintiles of WEDGE. We report the marginal effects of coefficient (dy/dx). Model (1) is for all sample in the paper. Model (2) is for the lowest WEDGE quintile sample while Model (5) is the highest WEDGE quintile sample. The results are qualitatively the same as the earlier results reported in Table V. The coefficient on LOGANAL is significantly negative for all models, suggesting that higher the voting power, smaller the number of analysts following the firm and vice versa.[6] The visual effects of these relations are depicted in Figure 1. Taken together, these findings indicate that firms with higher voting rights are less likely to be followed by security analysts, and tend to have lower Tobin's q while firms with higher analyst following tend to have higher Tobin's q.

C. Firm Performance of Dual-Class Structure

We next examine what impact dual-class status has on firm performance measured by Tobin's q. We report four models in Table VII after correcting for endogenous treatment effect using Heckman (1979) two-stage model, breaking our results with the first two models of GIM (2006) variables and the last two models with GIM variables and governance and monitoring variables. The evidence that the dual-class status per se does not affect Tobin's q in all four models is consistent with GIM (2006).

In models (1) and (2), following Shin and Stulz (2000), Morck and Yang (2001), and GIM (2006), we include firm age (FIRMAGE), a dummy variable for S&P 500 inclusion (SP500), growth options measured by R&D expenditure divided by sales (RNDR), capital expenditures divided by total sales (CAPXR), the ratio of advertising to sales (ADVR), sales growth (SGROWTH), and diversification dummy (SEGDIV). We also include dividend divided by book value of equity (DIVR) because Jennifer, Shipper, and Vincent (2005) suggest that the net effect of dual class structures is to reduce the credibility of earnings and to enhance the salience of dividends as measures of performance. Because many of these variables are endogenously determined with Tobin's q, their coefficients would be biased. Thus we are not interested in the interpretation of the coefficients on these controls although all these variables are highly significant.

Instead, we add governance and monitoring variables to investigate whether any governance or monitoring variable influence firm performance after the endogeneity correction. Notably, the coefficient on LOGANAL is significantly positive, suggesting that security analysts are providing additional monitoring role. As suggested by Chung and Jo (1996), because security analysts provide important roles as corporate monitors who help reduce agency costs, and as information intermediaries who help expand

[6] Our unreported results based only on the dual-class sample are qualitatively the same as in our total sample.

the breadth of investor attention, Tobin's q turns out to be an increasing function of the number of financial analysts following that firm. Although financial analysts' main function is not to audit and reward or penalize managerial performance, the very act of collecting, analyzing, and disseminating information tends to discipline managerial behavior, thus proving an indirect monitoring role. This evidence is also consistent with the equity offering study of Jo and Kim (2007) who find that frequent disclosures making firm's information environment transparent tend to positively affect firm performance. In contrast, however, the coefficients on g index, duality, and board size are significantly negative, indicating that the dual role of CEO and chairperson, large board, and many take-over defenses through anti-takeover provisions are adversely affecting firm performance. In particular, ineffective effect of large board size is consistent with the finding of Yermack (1996). Furthermore, GIM (2003) g index is significantly and inversely associated with Tobin's q, implying that too much take-over defense adversely affect firm performance.

Bebchuk, Cohen, and Ferrell (2004) examine which provisions, among a set of twenty-four governance provisions followed by IRRC, are correlated with firm value and stockholder returns, and they create an entrenchment index based on six provisions - four constitutional provisions that prevent a majority of shareholders from having their way (staggered boards, limits to shareholder bylaw amendments, supermajority requirements for mergers, and supermajority requirements for charter amendments), and two takeover readiness provisions that boards put in place to be ready for a hostile takeover (poison pills and golden parachutes). The results based on Bebchuk el al's (2004) entrenchment index reported in model (5) is even more significantly and inversely associated with Tobin's q, confirming that too much takeover defenses or managerial entrenchment adversely affect firm performance. Although unreported, our OLS results are qualitatively similar to the Heckman two-stage results and the above results do not change when we run the regressions with each governance variable separately.

The results based on the instrumental variables approach reported in Table VIII also closely mirror the results of the Heckman two-stage results. The positive impact of analyst following on Tobin's q is significant in all models at the one percent level and remains robust under various specifications using the Heckman two-stage, OLS, and instrumental variables approach, supporting our prediction 2(a).[7] To examine the issue of additional monitoring role of security analysts more closely, we conduct the regressions including the results based on the interaction variables of high wedge combined with low analyst following (HWLA to capture relatively higher agency problem case) vs. low wedge combined with high analyst following (LWHA to capture relatively lower agency problem case).

The results reported in Table IX indicate that while the coefficients on HWFA are insignificant and the coefficients on LWFA are positive, the difference between two interaction dummy variables is significantly different, supporting the additional impact of external monitoring by security analysts on firm performance. Thus, the main contributing effect of wedge and analyst following comes from low voting power and high analyst coverage, but not from high voting power and low analyst coverage. These results are consistent with our prediction 2(b). Since the coefficients on GIM control variables are qualitatively the same as in Tables VII and VIII, we do not report those coefficients to conserve the space. Our untabulated results based the Heckman two-stage results also suggest the same finding of a significant difference between the two interaction dummy variables of dual-class status combined with low analyst following vs. single-class firms combined with high analyst following. We interpret these results to mean that although U.S. does not use dual-class stocks as many as in Sweden and South Africa where they have substantial and detailed regulations on the usage of dual-class stocks, outside security analysts do provide additional monitoring role in U.S. where there is a lack of restriction against the usage

[7] If the true functional relation in the second-stage regressions is nonlinear, then the second pass estimates might provide incorrect standard errors. One way to get correct standard errors is to run a bootstrap (Lyon, Barber, and Tsai, 1999; Kai and Prabhala, 2007) that is specification free. Thus, we first run the first-stage probit as usual and get estimates and inverse Mills ratio. Second, we run second pass as we have done, and get coefficient estimates, and then discard the standard errors as they are incorrect. We only keep the coefficient estimates. Third, we need the same sample size for the bootstrap sample as the original sample size for the hypothesis testing or confidence interval. Although the sample size is the same as original, it will not be the same sample since bootstrapping allows random sampling with "replacements". Based on this random sample with replacements, we run the second pass and store the estimates. Fourth, we repeat the third step 10,000 times and keep saving the estimates. Fifth, from the stored estimates we compute the standard error of each coefficient. We use these to get the correct T-statistics for second stage. Our unreported results based on the bootstrapping approach indicate that while standard errors are just a bit larger, and therefore a bit smaller T-value, but the basic positive relation between Tobin's q and analyst following remains intact.

of dual-class status.

Surprisingly, however, as we see in Tables VII and VIII, the impact of outside institutional investors, inside blockholders, and board independence on firm performance is insignificant and trivial. It seems that the superior voting power of dual-class structure is strong enough to block potential monitoring by outside institutional investors, inside blockholders, and outside independent board members. Overall, our results indicate that among all internal and external governance and monitoring mechanisms, the external monitoring by security analysts is most effective in checking and balancing the behavior of top management of firms with dual-class structure.[8] Arguably, they are the only effective external mechanism that can influence the dual-choice and firm performance of dual-class firms.

D. Additional Tests

We also recognize a potential simultaneity bias between analyst following and Tobin's q because analyst following and Tobin's q can be endogenous variables. While analyst following may lead to higher firm value, firms with higher firm value are more likely to be followed by more analysts because it is relatively easier for analysts to market these firms (Chung and Jo (1996)). To adjust for a potential simultaneity bias, we estimate the regressions in a simultaneous equation framework, where analyst following is specified as a function of firm size, Tobin's q, variance of returns, advertising expenditure divided by sales, R&D expenditure ratio, NYSE dummy, and the inverse of stock price, following Chung and Jo (1996). The results are reported in Table X, and we find qualitatively similar results to those reported in Tables VII through IX. In addition, we find that the coefficients on the interaction variable between high WEDGE and low analyst following are significantly negative while the coefficients on the

[8]Although unreported, our main results of the first-stage probit and second-stage regressions based only on the IRRC clean year, i.e., 1998, 2000, and 2002 remain qualitatively the same. In addition, our untabulated results based on matched sample using the size matching or book-to-market matching do not change the main results. These findings might be affected due to potential multicollinearity. Thus, to check the impact of individual impact of governance variable, we run the regressions with each governance variable with control variables separately, and find that the main results do not change in our unreported results.

interaction variable between low WEDGE and high analyst following are highly positive, making the difference quite significant and implying that security analysts do provide additional monitoring on dual-class firms. We also examine LOGANAL without interaction variables and find qualitatively the same positive relation between analyst following and Tobin's q. Overall, a potential simultaneity bias does not appear to change our inferences concerning the association between analysts following and Tobin's q.

To further check the robustness of our results, we also conduct the Heckman two-stage, instrumental variable approach, and OLS regressions after including cash flow, cash flow square, vote, and vote square along with other GIM variables, governance and monitoring, and control variables. Although some of these variables introduce nonlinearity in the second-stage regressions, and therefore make statistical inference difficult, our unreported results show that the coefficients on analyst following remain significant in all specifications, indicating that the positive impact of external monitoring by security analysts on Tobin's q is quite robust.

It is also likely that there are some necessary preconditions of governance readiness in dual-class status. If so, that might contaminate our results such that a clean interpretation might be difficult. Thus, it is of our interest to investigate whether the observed relation between governance/monitoring mechanisms and the choice of dual-class status and the association between governance and firm performance will remain intact even after we control for some potential preconditions of governance. Our untabulated results indicate that the major findings of the negative relation between the choice and analyst following and the positive association between Tobin's q and analyst coverage remain robust when we use the fitted values obtained from the first stage in the second-stage regressions.

V. Conclusions

Despite the importance of the role of dual-class stocks and corporate governance in firm performance, there has been limited empirical evidence on this issue. This paper attempts to fill this gap in our knowledge by examining two questions, what the determinants of dual-class structure are, and whether external monitoring and corporate governance do provide additional monitoring, and therefore enhance firm performance. We analyze a comprehensive sample of dual-class structure in the United States during the 1996 to 2002 period based on the data provided by Gompers, Ishii, and Metrick (2006).

Our paper complements the existing literature of dual-class status by making four contributions. *First*, we complement and extend the existing literature by examining the full determinants of dual-class status. Consistent with the prior literature and economic intuition, we find various factors including family firm status, firms in media industry, state law index, Gompers, Ishii, and Metrick's (2003) g index, CEO status if s/he is a member of nomination committee, the percentage of director shares, the percentage of outside independent directors, the percentage of institutional ownership, and the number of analysts following the firm influence the choice of dual-class stratus.

Second, by using two-stage approach, including the first-stage probit regressions and the second-stage Heckman regressions and instrumental variables approach, we control the endogenous treatment effects between the choice of dual-class structure and firm performance and potential selection bias independently. *Third*, we revisit the debate of the incentive-alignment hypothesis vs. managerial entrenchment explanation as to whether the dual-class firms do better by using more extensive governance and monitoring mechanisms. *Fourth*, we undertake all tests after accounting for endogeneity by applying for treatment effects and find security analysts do provide an additional external monitoring role to enhance firm performance on one hand while their efforts of information production through information collection, analyzing, and publishing also provide indirect external pressures on top management on their choice of dual-class structure on the other hand. Arguably, financial analysts are the only effective external mechanism that can influence both the dual-choice and firm performance.

Based on our finding of the limited role of independent board on firm value in dual class stocks, the uniform requirements of Sarbanes-Oxley Act (SOX) for increasing independent board representation to improve governance and monitoring role may not be particularly effective for dual class firms. Thus, we raise a question of the effectiveness of SOX for dual class firms. Perhaps, one flat rule does not fit for all firms like one pair of shoes do not fit for all feet.

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Appendix A
Variable Definitions and Measures

Variable	[Name]	*Variable definitions*
Dual class firm (1,0)	[DUAL]	Dummy variable equals to 1 if a firm has more than one class of shares.
Family firm (1, 0)	[FAMFIRM]	Dummy variable equals to 1 if a firm is family owned firm and otherwise equals to zero.
Media (1, 0)	[MEDIA]	Media industry (SIC code = 2710-11, 2720-21, 2730-31, 4830, 4832-33, 7810, 7812, 7820
State Law	[STATELAW]	A firm incorporated in states with anti-takeover laws (source: GIM index, IRRC data)
ROA	[ROA]	Return on asset (source: COMPUSTAT)
Change ROA	[CHGROA]	Change in ROA from t-1 to t.
Diversification	[SEGDIV]	Dummy variable equals to 1 if a firm has more than one business segment (COMPUSTAT).
GINDEX	[GINDEX]	Gompers, Ishii and Metrick index (source: IRRC data)
Entrench Index	[ENTINDEX]	Bebchuk, Cohen, Ferrell (2004) Entrenchment Index (source: IRRC data)
Classified Board	[CBOARD]	Dummy variable equals to 1 if a firm has classified (staggered) board provision.
Duality (1, 0)	[DUALITY]	Dummy variable equals to 1 if a CEO is also chair of the board. (source: IRRC data)
CEO Nomination Committee	[CEONOM]	Dummy variable equals to 1 if a CEO is a chair or a member of nomination committee.
% of director share	[PCTDIRSHR]	Percentage of director shares (source: IRRC director data)
Board Size	[BSIZE]	Total number of board members (source: IRRC data)
% of Independent Directors	[PCTINDEP]	Number of independent outside directors / Number of total directors
Log of Blockholdings	[LOGBLKS]	Log of sum of total blockholdings (5% or more)
% of Institutional Ownership	[PCTINSTI]	Percentage of institutional share ownerships
Log (Number of Analysts + 1)	[LOGANAL]	Log of (number of analysts + 1) (source: I/B/E/S database)
Log Total Asset	[LNTA]	Log of total asset (data 6)
Debt / Total Asset	[DEBTR]	Long term debt divided by total asset
R&D expenditure ratio	[RNDR]	Research and development expense divided by total sales
Capital expenditure ratio	[CAPXR]	Capital expenditure expense divided by total sales
Advertising exp. ratio	[ADVR]	Advertising expense divided by total sales
Tobin q	[TOBINQ]	Tobin q = Total debt (data9 +data34) + preferred stock (data56) + market value of equity (data24*data25) / Total asset (data 6) [Chung and Pruitt (1994)]
Firm Age	[FIRMAGE]	Firm age is calculated from the beginning of the year from the CRSP database
S&P 500 (1, 0)	[SP500]	Dummy variable equals to 1 if a firm is in S&P 500 index.
Sales Growth	[SGROWTH]	Sales growth rate from t-1 to t.
Dividend/ Book Equity	[DIVR]	Dividend divided by book value of equity (data21/data60)
Cash Flow rights	[CF]	Cash flow rights of dual class stocks (sources: Gompers, Ishii, Metrick, 2006)
Voting rights	[VOTE]	Voting rights of dual class stocks (sources: Gompers, Ishii, Metrick, 2006)

Table I
Univariate Tests

This table displays descriptive statistics for the 7027 single class and 736 dual class firm-year observations from 1996 to 2002. Panel A shows the descriptive statistics of firm characteristics variables, and Panel B provides descriptive statistics of corporate governance characteristics. The number of firm-year observations (N), Mean, Median, Count (i.e., total number of observations for dummy variable) are reported by types of classes. Difference in mean (t-statistics) and median (non-parametric Wilcoxon) tests are reported. The definitions of variables are provided in Appendix A. ***, **, * statistically significant at the 1%, 5%, and 10% levels, respectively.

Panel A. Firm Characteristics

	Single class			***Dual class***				
	N	Mean	Median (or Count)	N	Mean	Median (or Count)	T-stat	z-stat
FAMFIRM	7027	0.0643	452	736	0.1195	88	-4.48***	-5.60***
MEDIA	7027	0.0085	60	736	0.1399	103	-10.23***	-23.65***
STATELAW	6765	1.6879	1.0000	710	1.5929	1.0000	2.16**	1.64*
ROA	7027	0.0205	0.0460	736	0.0283	0.0427	-1.64	0.55
CHGROA	6987	-0.0089	-0.0022	732	-0.0061	-0.0001	-1.00	-1.15
SEGDIV	7027	0.5245	3686	736	0.5163	380	0.43	0.43
LOGTA	7026	7.1311	6.9436	736	7.2427	7.197	-2.36***	-3.18***
DEBTR	7027	0.2403	0.2330	733	0.2819	0.2733	-5.22***	-5.09***
RNDR	7027	0.0604	0.0063	690	0.0281	0.0000	6.61***	10.62***
CAPXR	7027	0.0910	0.0468	731	0.0980	0.0448	-1.03	1.60*
ADVR	7027	0.0092	0.0000	729	0.0193	0.0000	-6.89***	-6.97***
FIRMAGE	7027	22.545	16	735	18.492	14	6.50***	5.08***
SP500	7027	0.2803	1970	736	0.1766	130	6.89***	6.02***
SGROWTH	7027	0.0916	0.0880	731	0.1010	0.0818	-1.17	0.17
DIVR	7027	0.0280	0.0003	736	0.0377	0.0101	-1.56	-2.82***

Panel B. Governance Characteristics

	Single class			*Dual class*				
	N	Mean	Median (or Count)	N	Mean	Median (or Count)	T-stat	z-stat
GINDEX	6765	9.1924	9	710	7.4535	7	18.75***	16.39***
CBOARD	6765	0.5957	4030	710	0.3577	254	12.55***	12.19***
DUALITY (1, 0)	7027	0.6711	4716	736	0.6263	461	2.39**	2.45***
CEONOM (1, 0)	7027	0.1104	776	736	0.1399	103	-2.21**	-2.40***
PCTDIRSHR	7027	0.0813	0.0222	736	0.2823	0.1318	-8.82***	-14.52***
BSIZE	7027	9.0106	9.0000	736	9.7595	9.0000	-7.38***	-7.62***
PCTINDEP	7002	0.6182	0.6363	736	0.4706	0.4641	20.75***	19.46***
LOGBLKS	7027	3.9639	3.0492	736	2.1121	0.0000	5.22***	29.90***
PCTINSTI	7027	59.971	62.082	736	55.284	57.245	5.57***	5.27***
LOGANAL	6747	1.9682	1.9459	632	1.6644	1.6094	10.90***	10.26***
TOBINQ	7027	1.9162	1.2912	733	1.6481	1.2901	5.17***	1.28*
CF				736	0.3182	0.2797		
VOTE				725	0.5467	0.5728		

Table II
Bivariate Correlation Matrix

This table reports Spearman correlation coefficients among variables for the 7027 single class and 736 dual class firm-year observations from 1996 to 2002. See Appendix A for variable definitions. [a, b] statistically significant at the 1%, and 5% level, respectively.

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*	*21*	*22*	*23*	*24*
1.DUAL	1.00																							
2.FAMFIRM	0.07[a]	1.00																						
3.MEDIA	0.28[a]	0.02[a]	1.00																					
4.STATELAW	-0.02	0.04[a]	0.00	1.00																				
5.ROA	0.01	0.07[a]	-0.02	0.08[a]	1.00																			
6.CHGROA	0.01	0.01	0.02	0.02	0.22[a]	1.00																		
7. TOBINQ	-0.04[a]	0.01	0.00	-0.06[a]	0.20[a]	0.07[a]	1.00																	
8. INDADJQ	-0.03[b]	0.02[b]	-0.01	-0.06[a]	0.20[a]	0.06[a]	0.96[a]	1.00																
9. FIRMAGE	-0.09[a]	0.18[a]	-0.04[a]	0.18[a]	0.13[a]	0.04[a]	-0.11[a]	-0.09[a]	1.00															
10.SP500	-0.10[a]	0.26[a]	-0.04	-0.01	0.16[a]	0.02	0.22[a]	0.22[a]	0.33[a]	1.00														
11.RNDR	-0.07[a]	-0.05[a]	-0.05[a]	-0.10[a]	-0.39[a]	-0.07[a]	0.26[a]	0.20[a]	-0.16[a]	-0.01[b]	1.00													
12.CAPXR	0.01	-0.07[a]	0.02[b]	-0.12[a]	-0.15[a]	0.04[a]	0.02[b]	0.00	-0.11[a]	-0.04[a]	0.16[a]	1.00												
13. ADVR	0.10[a]	0.08[a]	0.08[a]	-0.04[a]	0.00	0.01	0.10[a]	0.09[a]	0.09[a]	0.10[a]	0.00	-0.05[a]	1.00											
14.SGROWTH	0.02	-0.04[a]	0.03[b]	-0.05[a]	0.02	0.23[a]	0.17[a]	0.15[a]	-0.16[a]	0.02[a]	0.02	0.12[a]	0.03[b]	1.00										
15.DIVR	0.02	0.09[a]	0.00	0.02	0.08[a]	0.01	0.03[b]	0.03[b]	0.15[a]	0.09[a]	-0.05[a]	-0.03[a]	0.10[a]	-0.04[a]	1.00									
16.SEGDIV	-0.02	0.03	0.01	0.08[a]	0.02[b]	0.01	-0.14[a]	-0.13[a]	0.24[a]	0.07[a]	-0.14[a]	-0.11[a]	-0.07[a]	-0.07[a]	0.04[a]	1.00								
17.GINDEX	-0.19[a]	0.06[a]	-0.07[a]	0.32[a]	0.06[a]	0.03[a]	-0.13[a]	-0.13[a]	0.32[a]	0.15[a]	-0.13[a]	-0.08[a]	-0.03[a]	-0.10[a]	0.06[a]	0.18[a]	1.00							
18. DUALITY	-0.04[a]	0.01	0.02[a]	0.01	0.02	0.02	-0.03[a]	-0.03[a]	0.13[a]	0.11[a]	-0.08[a]	-0.02	0.05[a]	0.01	0.03[a]	0.08[a]	0.11[a]	1.00						
19.CEONOM	0.02[a]	0.01	0.00	0.02	0.01	0.00	-0.03[a]	-0.02	-0.02	-0.04[a]	-0.02	-0.02	0.02	-0.02	-0.01	0.04[a]	0.05[a]	0.03[a]	1.00					
20.BSIZE	0.07[a]	0.23[a]	0.04[a]	0.12[a]	0.13[a]	0.06[a]	-0.10[a]	-0.09[a]	0.44[a]	0.34[a]	-0.21[a]	-0.02[a]	0.08[a]	-0.03[a]	0.13[a]	0.18[a]	0.27[a]	0.04[a]	0.01	1.00				
21.PCTINDEP	-0.24[a]	0.00	-0.09[a]	0.05[a]	-0.01	-0.01	-0.03[a]	-0.03[b]	0.25[a]	0.14[a]	0.05[a]	-0.08[a]	-0.02[a]	-0.13[a]	0.05[a]	0.15[a]	0.29[a]	0.12[a]	0.00	0.09[a]	1.00			
22.PCTDIRSHR	0.22[a]	0.04[a]	0.06[a]	-0.03[b]	-0.01[a]	0.02	0.01	0.02	-0.14[a]	-0.11[a]	-0.04[a]	0.02[a]	0.05[a]	0.05[a]	-0.01	-0.01	-0.15[a]	-0.03	0.04[a]	-0.02	-0.24[a]	1.00		
23.LOGBLKS	-0.08[a]	-0.04[a]	-0.03	0.01	0.00	-0.01	0.01	0.00	-0.04[a]	-0.05[a]	-0.01	0.00	-0.01	0.03[a]	-0.02	-0.02[a]	-0.03	0.00	0.01	-0.05[a]	-0.01	0.00	1.00	
24.LOGANAL	-0.12[a]	0.12[a]	-0.09[a]	-0.06[a]	0.09[a]	0.00	0.26[a]	0.26[a]	0.10[a]	0.51[a]	0.05[a]	0.08[a]	0.07[a]	0.15[a]	0.04[a]	-0.06[a]	0.05[a]	0.11[a]	-0.05[a]	0.20[a]	0.10[a]	-0.10[a]	-0.05[a]	1.00
25.PCTINSTI	-0.03[a]	-0.05[a]	-0.01[b]	-0.04[a]	0.17[a]	0.03[a]	0.02[a]	0.05[a]	0.03	0.15[a]	-0.07[a]	-0.02	-0.07[a]	0.01	-0.03	0.05[a]	0.13[a]	0.10[a]	-0.02	-0.03	0.24[a]	-0.17[a]	-0.05[a]	0.27[a]

Table III
The Determinants of Dual-Class Structure

This table reports the coefficient of estimates from the probit model explaining the determinants of dual class structure. The dependent variable is the DUAL, which is a dichotomous variable that equals to one if a firm has more than one class of shares. Otherwise equals to zero. Model (1) and (2) are similar to GIM (2006) variables. Model (3), (4), and (5) include internal and external corporate governance variables. Fama-French 48 industry is included all Models except Model (1). T-statistics are adjusted for robust and clustered (by firm) standard errors and reported in parentheses. Appendix A provides variable definitions. ***, **, * statistically significant at the 1%, 5%, and 10% levels, respectively.

	Model (1)	*Model (2)*	*Model (3)*	*Model (4)*	*Model (5)*	*Model (6)*
Intercept	-1.335 ***	-1.712 ***	-1.117 ***	-1.397 ***	-1.365 ***	-1.633 ***
	(-16.2)	(-8.03)	(-3.14)	(3.00)	(-2.83)	(-3.35)
GIM Variables	0.334 *	0.146			0.234	0.179
FAMFIRM	(1.92)	(0.81)			(1.16)	(0.91)
MEDIA	1.779 ***	0.752 ***			0.385	0.429
	(7.85)	(2.70)			(1.31)	(1.43)
STATELAW	-0.043	-0.045			0.055	-0.023
	(-1.09)	(-1.13)			(1.10)	(-0.37)
ROA	0.427 *	0.342			0.277	0.228
	(1.78)	(1.25)			(0.66)	(0.56)
CHGROA	0.078	-0.049			-0.017	-0.008
	(0.46)	(0.27)			(-0.08)	(-0.04)
SEGDIV	-0.026	-0.087			-0.141	-0.120
	(-0.33)	(-1.02)			(-1.36)	(-1.17)
Governance Variables			-0.105 ***	-0.122 ***	-0.131 ***	
GINDEX			(-4.62)	(-5.11)	(-5.08)	
ENTINDEX						-0.267 ***
						(-5.49)
CBOARD			-0.249 **	-0.199 *	-0.160	
			(-2.14)	(-1.65)	(-1.30)	
CEONOM			0.179 *	0.215 *	0.208 *	0.257 **
			(1.49)	(1.80)	(1.76)	(2.18)
PCTDIRSHR			0.807 ***	0.664 ***	0.658 ***	0.655 ***
			(3.49)	(3.04)	(3.02)	(2.93)
PCTINDEP			-1.884 ***	-1.989 **	-1.993 ***	-1.948 ***
			(-7.10)	(-7.30)	(-7.23)	(-7.16)
LOGBLKS			-0.014 **	-0.017 **	-0.018 **	-0.017 **
			(-2.23)	(-2.33)	(-2.30)	(-2.19)
PCTINSTI			0.009 ***	0.009 ***	0.009 ***	0.009 ***
			(3.52)	(3.22)	(3.09)	(3.21)
LOGANAL			-0.268 ***	-0.288 ***	-0.285 ***	-0.278 ***
			(-3.41)	(-3.06)	(-3.04)	(-2.99)
Control Variables				0.040	0.034	-0.002
LOGTA				(0.78)	(0.64)	(0.03)
DEBTR				-0.149	-0.016	0.074
				(-0.54)	(-0.65)	(0.25)
RNDR				0.202	0.271	0.222
				(0.31)	(0.39)	(0.31)
F-F 48 Industry	NO	YES	YES	YES	YES	YES
log pseudo-likelihood	-2177.8	-1909.8	-1317.9	-1211.7	-1191.3	-1195.7
Pseudo R^2	0.0666	0.1815	0.3586	0.3688	0.3753	0.3730
Number of obs	7433	7433	7080	6770	6733	6733

Table IV
Simultaneous Regressions between Dual-Class Status and Board Independence

This table shows the two stage estimation method described in Maddala (1983) for simultaneous equations models in which one of the endogenous variables is continuous (PCTINDEP) and the other endogenous variable is dichotomous (DUAL). T-statistics are adjusted for robust and clustered (by firm) standard errors and reported in parentheses. See Appendix A for variable definitions. ***, **, * statistically significant at the 1%, 5%, and 10% levels, respectively.

	DUAL	*PCTINDEP*	*DUAL*	*PCTINDEP*
Intercept	-0.739***	-0.183***	-0.523***	-0.115***
	(-3.73)	(16.06)	(-3.36)	(-10.55)
DUAL		*-0.286****		*-0.247****
		(-100.26)		*(-89.11)*
PCTINDEP	*-1.937****		*-1.890****	
	(-12.04)		*(-12.74)*	
FAMFIRM	0.450***	0.020**	0.456***	0.123***
	(4.72)	(33.27)	(5.24)	(20.86)
MEDIA	1.411***		1.366***	
	(10.23)		(11.10)	
STATELAW	0.071***		0.058**	
	(2.80)		(2.53)	
ROA	0.180			
	(0.67)			
CHGROA	-0.087			
	(-0.26)			
SEGDIV	-0.092			
	(-1.61)			
GINDEX	-0.120***	-0.028***	-0.126***	
	(-8.44)	(-41.55)	(-10.97)	
CBOARD	-0.061			
	(-0.96)			
CEONOM	0.148*	0.053***	0.137*	
	(1.87)	(12.93)	(1.77)	
SP500		-0.166***		
		(37.54)		
FIRMAGE		-0.002***		-0.002***
		(-17.87)		(-19.56)
PCTDIRSHR	0.847***	0.005***	0.847***	0.163***
	(8.08)	(19.24)	(8.46)	(23.82)
PCTINSTI	0.013***	0.004***	0.011***	0.003***
	(7.49)	(48.50)	(7.22)	(36.45)
LOGANAL	-0.347***	-0.106***	-0.324***	-0.105***
	(-6.76)	(-37.89)	(-8.09)	(-36.68)
LOGTA	0.035	0.045***		0.021***
	(1.14)	(26.56)		(13.21)
DEBTR	0.233	-0.006		
	(1.49)	(0.85)		
RNDR	-0.144	0.001		0.033***
	(-0.57)	(0.10)		(2.91)
Pseudo R^2	0.2650	0.6944	0.2539	0.6113
Number of obs	6022	6022	6807	6807

Table V
Simultaneous Regressions between Dual-Class Status and Analyst Following

This table shows the two stage estimation method described in Maddala (1983) for simultaneous equations models in which one of the endogenous variables is continuous (LOGANAL) and the other endogenous variable is dichotomous (DUAL). T-statistics are adjusted for robust and clustered (by firm) standard errors and reported in parentheses. See Appendix A for variable definitions. ***, **, * statistically significant at the 1%, 5%, and 10% levels, respectively.

Simultaneous Method	*Model (1)*		*Model (2)*	
	DUAL	**LOGANAL**	**DUAL**	**LOGANAL**
Intercept	-0.5016**	-0.3121***	-0.4976**	-0.3915***
	(-2.58)	(-5.56)	(-2.85)	(-7.13)
DUAL		*-0.0545****		*-0.0623****
		(-5.81)		*(-6.73)*
LOGANAL	*-0.8082****		*-0.6837****	
	(-5.25)		*(-5.95)*	
FAMFIRM	0.5337***		0.5463***	
	(6.23)		(6.83)	
MEDIA	1.1389***		1.2314***	
	(7.59)		(9.04)	
STATELAW	0.0899***		0.0608***	
	(3.85)		(2.74)	
ROA	0.0463			
	(0.18)			
SEGDIV	-0.1182**		-0.1630***	
	(-1.97)		(-2.92)	
GINDEX	-0.1306***		-0.1093***	
	(-11.14)		(-9.97)	
CEONUM	0.1698**		0.1383*	
	(2.19)		(1.85)	
PCTDIRSHR	0.8118***		0.88046***	
	(8.13)		(9.09)	
PCTINDEP	-1.878***		-1.747***	
	(-12.48)		(-12.27)	
LOGBLKS	-0.0214***		-0.0196***	
	(-5.22)		(-5.08)	
PCTINSTI	0.0113***		0.0094***	
	(6.07)		(5.76)	
LOGTA	0.2582***	0.29198***	0.2174***	0.2991***
	(4.82)	(45.54)	(5.63)	(47.61)
DEBTR	-0.1347	-0.4637***		-0.4325***
	(-0.78)	(-12.30)		(-11.77)
RNDR	0.0247	-0.07036		
	(0.10)	(-1.30)		
CAPXR		0.25048***		0.2199***
		(5.60)		(5.03)
ADVR		0.2091		
		(0.79)		
TOBINQ		0.0648***		0.06637***
		(18.78)		(19.96)
		F= 568.78***		F= 729.67***
log likelihood	-1429.4266		-1553.283	
Adjusted R^2	0.2387	0.4857	0.2327	0.4864
Number of obs	6615	6615	6927	6927

Table VI
The Dual-Class Structure based on Ordered Probit Model

This table reports the coefficient of estimates from the ordered probit model explaining the determinants of dual class structure in our total sample. The dependent variable is the WEDGE, which is a dichotomous variable that the order is based on four quintiles of WEDGE. We report the marginal effects of coefficient (dy/dx). Model (1) is for all sample in the paper. Model (2) is for the lowest WEDGE quintile sample while Model (5) is the highest WEDGE quintile sample. We include internal and external corporate governance variables. T-statistics are adjusted for robust and clustered (by firm) standard errors and reported in parentheses. Appendix A provides variable definitions. ***, **, * statistically significant at the 1%, 5%, and 10% levels, respectively.

	Model (1)	*Model (2)*	*Model (3)*	*Model (4)*	*Model (5)*
GIM Variables	ALL	Quintile 1	Quintile 2	Quintile 3	Quintile 4
FAMFIRM	0.515 ***	0.019 **	0.019 **	0.018 **	0.017 **
	(3.11)	(2.42)	(2.28)	(2.12)	(2.09)
MEDIA	1.155 ***	0.049 ***	0.056 ***	0.064 ***	0.085 ***
	(5.09)	(3.99)	(3.54)	(2.93)	(2.23)
STATELAW	0.038	0.001	0.001	0.001	0.001
	(0.84)	(0.82)	(0.83)	(0.84)	(0.85)
ROA	0.353	0.011	0.009	0.008	0.006
	(0.93)	(0.92)	(0.89)	(0.90)	(0.90)
SEGDIV	-0.080	-0.002	-0.002	-0.002	-0.002
	(-0.93)	(-0.92)	(-0.91)	(-0.91)	(-0.87)
Governance Variables					
GINDEX	-0.113 ***	-0.003 ***	-0.003 ***	-0.003 ***	-0.002 ***
	(-5.30)	(-4.06)	(-4.52)	(-4.64)	(-3.62)
CEONOM	0.138	0.004	0.004	0.004	0.003
	(1.20)	(1.11)	(1.09)	(1.09)	(1.01)
PCTINDEP	-1.894 ***	-0.057 ***	-0.053 ***	-0.046 ***	-0.036 ***
	(-7.46)	(-4.69)	(-4.96)	(-4.97)	(-4.13)
LOGBLKS	-0.018 **	-0.001 **	-0.001 **	-0.0004 **	-0.0004 **
	(-2.37)	(-2.16)	(-2.23)	(-2.19)	(-2.29)
PCTINSTI	0.006 **	0.001 **	0.001 **	0.0001 **	0.0001 **
	(2.33)	(2.17)	(2.31)	(2.23)	(2.14)
LOGANAL	-0.397 ***	-0.012 ***	-0.012 ***	-0.011 ***	-0.009 ***
	(-9.13)	(-7.80)	(-7.51)	(-7.64)	(-7.64)
Control Variables					
LOGTA	0.126 ***	0.004 ***	0.004 ***	0.003 ***	0.002 ***
	(3.03)	(2.70)	(2.73)	(2.79)	(2.38)
DEBTR	0.172	0.005	0.005	0.004	0.003
	(0.70)	(0.70)	(0.69)	(0.68)	(0.69)
RNDR	-0.356	-0.011	-0.010	-0.009	-0.007
	(-0.51)	(-0.51)	(-0.51)	(-0.52)	(-0.51)
Percentage of Sample	100%	2.18%	2.09%	1.99%	2.13%
Pseudo R^2	0.1620				
Number of obs	7,070	153	147	140	150

Table VII
Tobin's q based on the Heckman Two Stage Treatment Effect Model

This table reports the coefficients of estimates from Heckman two stage treatment effect models. In the first stage, we run the probit model with same specification in Table III. We include Lambda (inverse mills ratio) in the second stage with control variables. The dependent variables in the second stage are Tobin q (TOBINQ) and industry adjusted Tobin q (INDADJQ). Model (1) and (2) are similar to GIM (2006) variables. Model (3), (4), and (5) include internal and external corporate governance variables. T-statistics are reported in parentheses. See Appendix A for variable definitions. ***, **, * statistically significant at the 1%, 5%, and 10% levels, respectively.

Heckman 2 stage treatment model	*Model (1)*	*Model (2)*	*Model (3)*	*Model (4)*	*Model (5)*
Dependent	**TOBINQ**	**INDADJQ**	**TOBINQ**	**INDADJQ**	**INDADJQ**
Intercept	1.738***	0.453***	2.078***	0.689***	0.557***
	(36.36)	(9.81)	(13.45)	(4.65)	(3.97)
FIRMAGE	-0.013***	-0.012***	-0.007***	-0.006***	-0.007***
	(10.05)	(-9.46)	(-4.93)	(-4.11)	(-5.23)
SP500	1.073***	1.004***	0.878***	0.809***	0.796***
	(21.40)	(20.70)	(14.63)	(13.98)	(13.79)
RNDR	3.401***	2.355***	3.196***	2.115***	2.087***
	(21.04)	(15.07)	(18.30)	(12.56)	(12.44)
CAPXR	-0.611***	-0.570***	-0.758***	-0.697***	-0.652***
	(-4.05)	(-3.91)	(-4.90)	(-4.69)	(-4.38)
ADVR	5.469***	4.411***	5.576***	4.508***	4.578***
	(6.30)	(5.26)	(6.14)	(5.17)	(5.25)
SGROWTH	1.101***	0.899***	1.012***	0.788***	0.761***
	(12.06)	(10.19)	(10.44)	(8.42)	(8.15)
DIVR	0.479***	0.386***	0.528***	0.454***	0.459***
	(3.66)	(3.05)	(3.96)	(3.53)	(3.58)
SEGDIV	-0.319***	-0.322***	-0.224***	-0.228***	-0.219***
	(-7.17)	(-7.49)	(-4.88)	(-5.12)	(-4.95)
DUAL (1, 0)	*-0.265*	*0.080*	*0.018*	*0.186*	*0.055*
	(-1.54)	*(0.48)*	*(0.07)*	*(1.08)*	*(0.33)*
GINDEX			-0.045***	-0.045***	
			(-4.90)	(-5.04)	
ENTINDEX					-0.133***
					(-7.43)
DUALITY			-0.136**	-0.132***	-0.126***
			(-2.88)	(-2.88)	(-2.77)
PCTDIRSHR			0.161*	0.193**	0.193**
			(1.65)	(2.06)	(2.05)
BSIZE			-0.076***	-0.079***	-0.078***
			(-7.34)	(8.02)	(7.96)
PCTINDEP			-0.092	-0.065	-0.018
			(-0.67)	(-0.50)	(-0.13)
LOGBLKS			0.004	0.003	0.003
			(1.27)	(1.20)	(1.11)
LOGANAL			0.443***	0.447***	0.430***
			(11.27)	(11.80)	(11.33)
PCTINSTI			-0.001	0.000	0.001
			(-0.96)	(0.43)	(0.85)
Lambda	0.033	-0.151	-0.107	-0.196**	-0.139
	(0.34)	(1.61)	(-1.01)	(-1.95)	(-1.43)
Wald Chi-square	1442.31	1064.83	2116.87	1630.77	1831.41
Number of obs	6946	6946	6586	6586	6586

Table VIII
Tobin's q Regression based on Instrument Variables Approach

This table reports the coefficients of estimates from two stage instrumental variable method. Instrumental variables are FAMFIRM and MEDIA that are highly correlated with DUAL, but are uncorrelated with Tobin's q. The dependent variables in the second stage are Tobin's q (TOBINQ) and industry adjusted Tobin's q (INDADJQ). Model (1) and (2) are similar to GIM (2006) variables including DUAL and WEDGE. Model (3), (4), and (5) include internal and external governance variables. T-statistics are reported in parentheses. See Appendix A for variable definitions. ***, **, * statistically significant at the 1%, 5%, and 10% levels, respectively.

Instrumental Variable Regression	*Model (1)*	*Model (2)*	*Model (3)*	*Model (4)*	*Model (5)*
Dependent	**TOBINQ**	**INDADJQ**	**TOBINQ**	**INDADJQ**	**INDADJQ**
Intercept	1.729***	0.435***	2.042***	0.634***	0.771***
	(34.40)	(9.24)	(13.07)	(4.21)	(5.20)
FIRMAGE	-0.014***	-0.011***	-0.007***	-0.004***	-0.004***
	(-9.82)	(-9.02)	(-4.70)	(-2.87)	(-3.01)
SP500	1.074***	1.016***	0.889***	0.839***	0.815***
	(21.20)	(20.38)	(14.74)	(14.71)	(14.14)
RNDR	3.415***	2.381***	3.206***	2.125***	2.097***
	(20.92)	(15.23)	(18.30)	(12.71)	(12.69)
CAPXR	-0.615***	-0.564***	-0.756***	-0.687***	-0.686***
	(-4.08)	(-3.87)	(-4.88)	(-4.71)	(-4.72)
ADVR	5.392***	4.112***	5.249***	4.188***	4.710***
	(6.03)	(4.76)	(5.61)	(4.54)	(5.15)
SGROWTH	1.101***	0.902***	1.019***	0.791***	0.784***
	(12.05)	(10.20)	(10.48)	(8.58)	(8.54)
DIVR	0.475***	0.384***	0.518***	0.408***	0.422***
	(3.63)	(2.97)	(3.87)	(3.26)	(3.37)
SEGDIV	-0.320***	-0.325***	-0.224***	-0.241***	-0.243***
	(-7.19)	(-7.53)	(-4.85)	(-5.57)	(-5.64)
DUAL (1, 0)	*-0.175*		*0.219*	*0.497*	
	(-0.96)		*(1.01)*	*(1.58)*	
WEDGE = Voting – CF rights		*0.653*			*0.366*
		(0.95)			*(0.32)*
GINDEX			-0.042***	-0.044***	-0.049***
			(-4.47)	(-4.60)	(-5.21)
DUALITY			-0.137**	-0.134***	-0.145**
			(-2.89)	(-3.24)	(-3.13)
PCTDIRSHR			0.129	0.137	0.207*
			(1.26)	(1.30)	(1.90)
BSIZE			-0.080***	-0.088***	-0.082***
			(-7.45)	(-8.33)	(-8.06)
PCTINDEP			-0.042	-0.029	-0.114
			(-0.28)	(-0.20)	(-0.81)
LOGBLKS			0.004	0.004	0.003
			(1.46)	(1.26)	(0.88)
PCTINSTI			-0.002	-0.0004	-0.002
			(-1.20)	(-0.20)	(-0.14)
LOGANAL			0.450***	0.431***	0.422***
			(11.39)	(11.04)	(10.94)
Adjusted R^2	0.1720	0.1297	0.1990	0.1617	0.1669
Number of obs	6946	6936	6586	6586	6578

Table IX
Tobin's q Regression with Interaction Dummy Variables

This table reports the coefficients of estimates from OLS regression including interaction dummy variables, HWLA (High Wedge*Low Analysts) and LWHA (Low Wedge*High Analysts). The dependent variables are Tobin's q (TOBINQ) and industry adjusted Tobin's q (INDADJQ). Model (1) and (2) are similar to GIM (2006) variables including interaction dummy variables HWLA and LWHA. Model (3) and (4) include internal and external governance variables. In Model (5), we use another interaction dummy variable with Bebchuk et al's (2000) entrenchment index and wedge (HWHE, LWLE). T-statistics are adjusted for robust and clustered (by firm) standard errors and reported in parentheses. Appendix A provides a descriptive of each of the variables. ***, **, * statistically significant at the 1%, 5%, and 10% levels, respectively.

OLS Method	*Model (1)*	*Model (2)*	*Model (3)*	*Model (4)*	*Model (5)*
Dependent	**TOBINQ**	**INDADJQ**	**TOBINQ**	**INDADJQ**	**INDADJQ**
Intercept	3.503***	2.088***	3.705***	2.222***	1.691***
	(14.17)	(8.88)	(13.11)	(8.09)	(6.85)
High Wedge * Low Analysts (HWLA)	*0.075*	*0.097*	*-0.066*	*-0.070*	
	(0.77)	*(1.13)*	*(-0.63)*	*(-0.72)*	
Low Wedge * High Analysts(LWHA)	*0.609****	*0.586****	*0.531****	*0.492****	
	(9.85)	*(9.65)*	*(8.65)*	*(8.21)*	
High Wedge * High ENTINDEX (HWHE)					*-0.004*
					(-0.03)
Low Wedge * Low ENTINDEX (LWLE)					*0.601****
					(5.04)
FAMFIRM			-0.103	-0.039	-0.059
			(-0.68)	(-0.27)	(-0.41)
GINDEX			-0.049***	-0.052***	
			(-3.47)	(-3.61)	
DUALITY (CEO/Chair)			-0.082	-0.082	-0.076
			(-1.22)	(-1.23)	(1.12)
PCTDIRSHR			0.174**	0.220***	0.198**
			(2.30)	(2.70)	(2.42)
BSIZE			-0.017	-0.025	-0.036**
			(-0.97)	(-1.45)	(-2.17)
PCTINDEP			-0.134	-0.136	-0.172
			(-0.69)	(-0.69)	(-0.89)
LOGBLKS			0.004	0.004	0.003
			(1.46)	(1.26)	(0.88)
PCTINSTI			-0.002	-0.0004	-0.002
			(-1.20)	(-0.20)	(-0.14)
GIM Controls	Yes	Yes	Yes	Yes	Yes
Chow Test HWLA = LWHA	F=26.06	F=26.24	F=27.21	F=27.63	F=9.98
	(p=0.00)	(p=0.00)	(p=0.00)	(p=0.00)	(p=0.00)
Adjusted R^2	0.1918	0.1539	0.2073	0.1698	0.1566
Number of obs	7213	7213	6918	6918	7183

Table X
Regression results of Simultaneous Equation Model of Analyst Following and Tobin's q

This table reports the coefficients of estimates from the 3SLS regression. We include interaction dummy variables, HWLA (High Wedge*Low Analysts) and LWHA (Low Wedge*High Analysts). The dependent variables are log (number of analysts +1) (LOGANAL) and industry adjusted Tobin's q (INDADJQ). T-statistics are adjusted for robust and clustered (by firm) standard errors and reported in parentheses. See Appendix for variable definitions. ***, **, * statistically significant at the 1%, 5%, and 10% levels, respectively.

3SLS Method	*Model (1)*		*Model (2)*	
Dependent	**LOGANAL**	**INDADJQ**	**LOGANAL**	**INDADJQ**
Intercept	1.418***	1.995***	-1.294***	2.638***
	(27.56)	(13.78)	(-18.19)	(15.91)
INDADJQ	0.065***		0.277***	
	(22.85)		(16.03)	
LOGANAL		*1.538****		*1.379****
		(12.22)		*(16.96)*
FIRMAGE		-0.005***	-0.002***	0.001
		(-5.88)	(-4.74)	(0.13)
SP500		0.611***		0.645***
		(12.42)		(11.93)
LOGTA	0.064***	-0.333***	0.122***	-0.353***
	(8.99)	(-16.63)	(11.03)	(-15.23)
RNDR	-0.388***	1.899***	-0.588***	1.857***
	(-8.17)	(11.43)	(-8.14)	(11.01)
CAPXR	0.243***	-0.554***	0.276***	-0.600***
	(6.44)	(-3.74)	(4.90)	(-4.01)
ADVR	-1.129***	6.098***	-1.920***	5.328***
	(-4.98)	(7.09)	(-5.72)	(6.13)
SGROWTH		0.465***		0.751***
		(7.53)		(10.34)
DIVR		0.260***		0.269***
		(3.36)		(3.08)
SEGDIV		-0.188***	-0.033*	-0.115***
		(-6.92)	(-1.95)	(-2.59)
NYSE	0.029**		0.039***	
	(2.17)		(2.76)	
Volatility of Return	-0.474***		-0.522***	
	(-4.20)		(-3.70)	
Trading Volume	0.286***		0.206***	
	(42.10)		(20.35)	
1/Price	-4.797***		-3.452***	
	(-21.08)		(-12.10)	
High Wedge *		-0.363***		-0.352***
Low Analysts (HWLA)		(-4.38)		(-3.75)
Low Wedge *		0.531***		1.646***
High Analysts(LWHA)		(8.65)		(45.36)
FAMFIRM		0.019	-0.028	0.063
		(0.39)	(-0.89)	(0.74)
GINDEX		-0.020***	0.016***	-0.054***
		(-3.88)	(4.81)	(-6.37)
DUALITY		0.028	0.056***	-0.109**
		(1.02)	(3.26)	(-2.40)
PCTDIRSHR		0.052	-0.114***	0.345***
		(0.94)	(-3.36)	(3.82)
BSIZE		-0.011*	0.004	-0.011
		(-1.76)	(0.96)	(-1.09)

PCTINDEP		-0.159**	-0.027**	-0.225*
		(-2.10)	(-0.57)	(-1.78)
PCTINSTI		0.005***	0.002***	0.000
		(6.87)	(4.59)	(0.16)
Chow Test (Chi-square)		523.29***		442.58***
(HWLA = LWHA)				
Root MSE	0.461***	1.773***	0.603***	1.771***
Adjusted R^2	0.5641	0.0949	0.6229	0.0980
Number of obs	6,886	6,578	6,578	6,578

Figure 1
The Relation among Tobin's q, Analysts Following, and WEDGE

This figure shows the relation among Tobin's q, analysts following, and WEDGE. We divide the sample by four quintiles of WEDGE and analysts following in the dual class firms and single class sample. WEDGE is calculated by the difference between voting rights and cash flow rights. WEDGE Q1 is the lowest WEDGE group following single class. WEDGE Q4 is the highest difference in voting rights and cash flow rights.