



Corporate governance and firm valuation [☆]

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Abstract

Gompers et al. [Gompers, P., Ishii, J., Metrick, A., 2003. Corporate governance and equity prices. *Quarterly Journal of Economics* 118, 107–155] created G-Index, a summary measure of corporate governance based on 24 firm-specific provisions, and showed that more democratic firms are more valuable. Bebchuk et al. [Bebchuk, L., Cohen, A., Ferrell, A., 2005. What matters in corporate governance? Working Paper, Harvard Law School] created an entrenchment index based on six provisions underlying G-Index, and found it to fully drive the Gompers et al. (2003) valuation results. Both G-Index and the entrenchment index are based on IRRC data that is comprised of anti-takeover measures, focusing on external governance [Cremers, K.J.M., Nair, V.B., 2005. Governance mechanisms and

[☆] Performance data were obtained from Compustat. Corporate governance data were obtained from Institutional Shareholder Services. Gov-Score data for February 1, 2003, 2004 and 2005 are freely available at the URL: http://www.robinson.gsu.edu/accountancy/gov_score.html. We are grateful to Paul Gompers, Joy Ishii, and Andrew Metrick for providing their G-Index measure. We have benefited from the comments of Orié Barron, Lucien Bebchuk, Dennis Beresford, Paul Fischer, Jere Francis, Huong Higgins, Steve Huddart, Raffi Indjejikian, Bin Ke, Inder Kharana, Jim McKeown, Andrew Metrick, Reynolde Pereira, Husayn Shahrur, Ken Shaw, Kumar Sivakumar, Dorothy Alexander-Smith, Tim Yoder, Mengxin Zhao, and participants at the Boston Accounting Research Colloquium, First Annual NYU/Penn Conference on Finance and Law, Fifteenth Annual Conference on Financial Economics and Accounting, University of Missouri, and Penn State University.

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equity prices. *Journal of Finance* 60, 2859–2894]. We create Gov-Score, a summary governance measure based on 51 firm-specific provisions representing both internal and external governance, and we show that a parsimonious index based on seven provisions underlying Gov-Score fully drives the relation between Gov-Score and firm value. Our results support the Bebchuk et al. (2005) findings that only a small subset of provisions marketed by corporate governance data providers are related to firm valuation, and the Cremers and Nair (2005) evidence that both internal and external governance are linked to firm value. The 51 governance provisions we consider include five that are relevant to accounting and public policy: stock option expensing, and four that are audit-related. We find none of these five measures to be related to firm valuation. We document that only one of the seven governance provisions important for firm valuation was mandated by either the Sarbanes–Oxley Act of 2002 or the three major US stock exchanges. We provide researchers with an alternative measure of governance to G-Index with three distinct advantages: (1) broader in scope of governance, (2) covers more firms, and (3) more dynamic, reflecting recent changes in the corporate governance environment.

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1. Introduction

Corporate governance has recently received much attention due to high profile scandals such as Adelphia, Enron and WorldCom, serving as the impetus to the Sarbanes–Oxley Act of 2002, the most sweeping corporate governance regulation in the US in the last 70 years (Byrnes et al., 2003). Consistent with this focus on corporate governance, data providers have arisen to advise firms on governance matters and evaluate the strength of their corporate governance. Prior studies have used the 24-factor Investor Responsibility Research Center (IRRC) database as a proxy for corporate governance, and have found that better governance is related to higher firm valuation as proxied by Tobin's Q (Gompers et al., 2003; Bebchuk and Cohen, 2005; Bebchuk et al., 2005; Cremers and Nair, 2005).¹ Bebchuk et al. (2005) create an entrenchment index based on six factors underlying G-Index, and document that their parsimonious index fully drives the Gompers et al. (2003) valuation results. However, studies using IRRC data can only examine the effects of external governance in spite of the fact that effective corporate governance requires both internal and external measures (Cremers and Nair, 2005). Cremers and Nair (2005) use shareholder activism to proxy for internal corporate governance. However, their study does not examine which internal governance provisions, if any, matter for firm valuation purposes.² We fill this

¹ There are 28 IRRC factors but Gompers et al. (2003) combine firm-level factors with state law factor analogues to form their 24-factor G-Index.

² Holmstrom and Kaplan (2001) argue that anti-takeover measures are less important in recent years for disciplining managerial behavior.

void in the literature and we identify five internal provisions that matter for firm valuation.

We use data of the largest corporate governance data provider to institutional investors, Institutional Shareholder Services (ISS), to create a firm-specific governance index. ISS has a distinct advantage over IRRC as a data provider in that it is based on both internal and external governance factors. The 51 ISS governance factors span eight categories of corporate governance, including audit, compensation and board of directors.³ Consistent with the literature using IRRC data (Gompers et al., 2003; Bebchuk and Cohen, 2005; Bebchuk et al., 2005; Cremers and Nair, 2005), we show that our summary governance measure (Gov-Score) is significantly and positively related to firm valuation. Consistent with Bebchuk et al. (2005), who examine which IRRC factors are linked to firm valuation, we examine which ISS factors are significantly and positively linked to firm valuation.

We identify seven governance measures that are key drivers of this link: (1) board members are elected annually; (2) company either has no poison pill or one approved by shareholders; (3) option re-pricing did not occur within the last three years; (4) average options granted in the past three years as a percentage of basic shares outstanding did not exceed 3%; (5) all directors attended at least 75% of board meetings or had a valid excuse for non-attendance; (6) board guidelines are in each proxy statement⁴; and (7) directors are subject to stock ownership guidelines. The first two measures represent external governance and are part of the Bebchuk et al. (2005) entrenchment index. The other five are internal governance factors, none of which have been considered by prior literature linking governance to firm value. We develop a parsimonious index based on these seven factors (Gov-7) and show that it fully drives the relation between Gov-Score and firm value. We show that Gov-Score minus our modified version of the entrenchment index provides incremental explanatory power for firm valuation over and above our modified version of the entrenchment index, indicating that Gov-Score includes important governance measures for firm valuation that IRRC data ignores.

We make several contributions to the literature. First, we document that effective corporate governance requires both internal and external measures, enhancing the validity of the Cremers and Nair (2005) findings. Second, we

³ We correlated Gov-Score with G-Index for a common sample of 1010 firms and found a significant but small negative correlation between the two (Pearson = -0.0940; Spearman = -0.1002), revealing that these two measures are quite different. The negative correlation is that Gov-Score (G-Index) increases when corporate governance improves (deteriorates).

⁴ This factor refers to whether board guidelines are published in the firm's proxy statement. Board guidelines document how the board addresses significant governance issues. It is the only one of these seven governance factors that is mandated by the Sarbanes-Oxley Act or the three major US stock exchanges (NYSE, AMEX and NASDAQ).

identify five internal governance factors that are related to firm value, expanding dramatically our knowledge of the number of internal governance factors linked to firm value beyond the sole (shareholder activism) variable suggested by [Cremers and Nair \(2005\)](#).⁵ Third, we document that five accounting based governance provisions are not positively related to firm value. Fourth, using a different database, time period and methodology than past research, we confirm past evidence that absence of a staggered board and a poison pill are significantly and positively associated with firm valuation, enhancing the validity that these corporate governance provisions are linked to firm value ([Bebchuk et al., 2005](#)). Fifth, our evidence enhances the validity of the [Bebchuk et al. \(2005\)](#) findings that only a small fraction of governance factors marketed by database providers are relevant for firm value.⁶ Sixth, we create a summary governance measure (Gov-Score) that is better linked to firm value than the oft-used G-Index. Moreover, relative to G-Index, Gov-Score is broader in scope, represents both internal and external governance measures, applies to more firms, and is more dynamic than [Bebchuk et al.](#)'s entrenchment index.⁷

We proceed as follows. Section 2 discusses related research, and Section 3 describes our data and methodology. Section 4 relates Gov-Score to firm valuation. Section 5 uses three econometric approaches to ascertain which governance factors drive the relation between Gov-Score and firm valuation. Section 6 derives an index (Gov-7) based on seven ISS factors, and shows that it fully drives the relation between Gov-Score and firm valuation. Section 7 contains the results of three additional analyses, Section 8 contains discussion, and Section 9 summarizes.

2. Review of related research

Prior research has linked corporate governance to firm valuation using Tobin's Q as a proxy for firm valuation.⁸ Early studies examined links between

⁵ Recent evidence suggests that shareholder activists may not enhance firm value. [Nelson \(2006\)](#) shows that the announcement of targeting by one of the largest shareholder activist groups, the California Public Employees' Retirement System, is not associated with significant positive abnormal returns.

⁶ [Bebchuk et al.](#) show that only 25% of the IRRC factors fully drive the relation between G-Index and firm valuation. We show that approximately 14% of the ISS factors fully drive the relation between Gov-Score and firm valuation.

⁷ As described in Section 3 below, the 51 ISS measures span eight categories of corporate governance, six categories are primarily internal and two are external. In contrast, the 24 IRRC measures generally are confined to the two ISS categories of external governance. ISS has complete data on 2538 firms as of February 1, 2003. In contrast, IRRC has complete data on 1983 firms as of its latest year, 2004.

⁸ Rather than provide a review of the vast corporate governance literature, we discuss those studies most relevant to firm valuation. See [Shleifer and Vishny \(1997\)](#), [John and Senbet \(1998\)](#) and [Hermalin and Weisbach \(2003\)](#) for literature reviews.

individual internal governance provisions and Tobin's Q (Hermalin and Weisbach, 1991; Bhagat and Black, 2002; Yermack, 1996). Hermalin and Weisbach (1991) and Bhagat and Black (2002) found no link between the proportion of outside directors and Tobin's Q. Yermack (1996) found an inverse relation between board size and Tobin's Q. Callahan et al. (2003) documented a positive relation between management participation in the director selection process and Tobin's Q.

Several studies have examined summary measures of corporate governance and their linkage to firm valuation. Gompers et al. (2003) (hereafter GIM) used Investor Responsibility Research Center (IRRC) data, and found that firms with fewer shareholder rights have lower firm valuations and lower stock returns. GIM classified 24 governance factors into five groups (tactics for delaying hostile takeover, voting rights, director/officer protection, other takeover defenses, and state laws), and created G-Index by summing 24 binary governance factors. G-Index has been used by many accounting and finance studies to represent governance even though it is an anti-takeover protection index, not a broad index of corporate governance (Cremers and Nair, 2005).⁹

Bebchuk and Cohen (2005) used IRRC data to show that staggered boards impede firm value. Bebchuk et al. (2005) (hereafter BCF) used IRRC data to show that a six-factor firm entrenchment index fully drives the relation between G-Index and firm value. Cremers and Nair (2005) used IRRC data to show that a three-factor "external governance" index impedes firm valuation.¹⁰ Cremers and Nair (2005) maintain effective corporate governance requires both internal and external measures so they supplement IRRC data with shareholder activism, their proxy for internal governance.

We add to this literature by re-examining the links between corporate governance and firm valuation, using a far more extensive database than the oft-used IRRC database. Similar to GIM, who created a simple summary governance index using 24 IRRC data items, we create a simple summary governance index using 51 ISS data items. Similar to both Cremers and Nair (2005) and BCF who used IRRC data to create parsimonious summary indices, we use ISS data to create a parsimonious summary index. Similar to GIM who showed that G-Index decreases in firm valuation, we show that Gov-Score increases in firm value. Similar to BCF who showed that a small subset of factors fully drives

⁹ Accounting and finance studies using G-Index include Ashbaugh et al. (in press), Bebchuk and Cohen (2005), Bebchuk et al. (2005), Bergstresser et al. (2006), Bowen et al. (2004), Christoffersen et al. (2004), Core et al. (2006), Cremers and Nair (2005) and Defond et al. (2005).

¹⁰ The Cremers and Nair (2005) index is based on three anti-takeover provisions: staggered board, restrictions of shareholders' ability to call a special meeting or to act by written consent, and blank check preferred stock. Governance measures that are based on summing binary IRRC data, such as those derived by GIM, BCF and Cremers and Nair (2005), decrease in good governance. In contrast, governance measures that are based on summing binary ISS data increase in good governance.

the relation between IRRC corporate governance data and firm value, we show that a small subset of factors fully drives the relation between ISS corporate governance data and firm value. Similar to [Cremers and Nair \(2005\)](#), we show that links between governance and firm value are not confined to anti-takeover measures. In contrast to past studies, we use a single database containing numerous internal and external governance factors, and we identify five internal governance factors that have not heretofore been linked to firm valuation. We are also the first researchers to examine the link between firm value and five governance provisions that are related either to auditing or stock option expensing, and we show that no significant and positive relation exists between these corporate governance factors and firm valuation.

3. Data and methodology

3.1. Sample selection

We create a summary corporate governance index, Gov-Score, for 1868 firms as of February 1, 2003.¹¹ We use February 1, 2003 because it precedes the effective dates of both the relevant provisions of the Sarbanes–Oxley Act and those enacted by major US stock exchanges.¹² We code each of 51 factors either 1 or 0 depending on whether or not ISS considers the firm’s governance to be minimally acceptable.¹³ We determine if a firm’s governance is minimally

¹¹ ISS began collecting firm-specific corporate governance data from firms’ proxy statement in mid 2002, expanding the number of governance factors it collected in late January 2003.

¹² If we examined later years, many provisions would be mandatory and exhibit little variation to conduct empirical tests.

¹³ ISS provides 61 individual measures and three combination measures. We omit combination factors and we separate one factor into two (poison pill and blank check preferred stock). We omit 10 factors which apply only to a subset of firms: poison pill with TIDE provision, poison pill with sunset provision, poison pill with a qualified offer clause, and poison pill has trigger threshold, not incorporated in a state with a control share acquisition statute or company opted out, not incorporated in a state with a control share cash-out statute or company opted out, not incorporated in a state with a freeze-out provision or company has opted out, not incorporated in a state with a fair price provision or company has opted out, not incorporated in a state with state stakeholder laws or company opted out, and not incorporated in a state that endorses poison pills. Consistent with GIM and BCF, we omit firms with dual class stock. ISS does not code data as representing minimally acceptable governance but they provide sufficient information to enable one to make such a determination. We determine if a firm’s governance is minimally acceptable (coded 1) or unacceptable (coded 0) by perusing the detailed ISS data and using information in [ISS Corporate Governance: Best Practices User Guide and Glossary \(2003\)](#). Similar to GIM, BCF and [Cremers and Nair \(2005\)](#), we rely on the data provider’s view as to what constitutes good governance rather than make our own assessments.

acceptable (coded 1) or unacceptable (coded 0) using information in *ISS Corporate Governance: Best Practices User Guide and Glossary* (2003).

Similar to GIM, BCF and Cremers and Nair (2005), we sum a firm's binary variables to create a firm-specific summary measure. Appendix shows the 51 governance provisions classified by the eight ISS categories: audit, board of directors, charter/bylaws, director education, executive and director compensation, ownership, progressive practices, and state of incorporation. In contrast to these eight categories, IRRC data are confined to only two categories, charter/bylaws and state of incorporation, giving ISS data the potential for allowing creation of a much broader summary corporate governance index than is possible using IRRC data.¹⁴

Consistent with past research, we use Tobin's Q as our proxy for firm valuation. We use Compustat data to measure our control variables and Tobin's Q for the 2002 fiscal year end as it is most closely aligned with the February 1, 2003 ISS data. We winsorize extreme (1st and 99th) percentiles of Tobin's Q, and adjust it by its ISS industry mean.¹⁵ Our analyses are based on all firms for which we have data available for Gov-Score, Tobin's Q and our control variables.¹⁶

3.2. Methodology

We regress Tobin's Q on Gov-Score and three control variables. We determine our control variables based on prior research: log of assets and log of firm age (Shin and Stulz, 2000) and a dummy variable for firm is incorporated in

¹⁴ The following IRRC factors are classified as Charter/Bylaws by ISS: company is not authorized to issue blank check preferred stock, a majority vote is required to amend charter/bylaws (not a supermajority), board cannot amend bylaws without shareholder approval or can only do so under limited circumstances, company either has no poison pill or a pill that was shareholder approved, shareholders are allowed to call special meetings, a simple majority vote is required to approve a merger (not a supermajority), and shareholders may act by written consent and the consent is non-unanimous. The sole factor in Gov-Score that is in the ISS state of incorporation category, incorporation in a state without anti-takeover provisions, encompasses four IRRC state-law factors: cash-out law, control share acquisition law, directors' duties law, and fair price law. Board members are elected annually and shareholders have cumulative voting rights to elect directors are the only IRRC factors in the Board of Directors category. GIM consider both of these factors to be anti-takeover measures.

¹⁵ ISS defines 23 unique industry groups based on four-digit Global Industry Classification Standard (GICS)[®] codes developed by Standard & Poor's and Morgan Stanley Capital International: Automobiles & Components, Banks, Capital Goods, Commercial Services & Supplies, Consumer Durables & Apparel, Diversified Financials, Energy, Food & Drug Retailing, Food Beverage & Tobacco, Health Care Equipment & Services, Hotels Restaurants & Leisure, Household & Personal Products, Insurance, Materials, Media, Pharmaceuticals & Biotechnology, Real Estate, Retailing, Software & Services, Technology Hardware & Equipment, Telecommunication Services, Transportation, & Utilities.

¹⁶ Similar to GIM, we do not industry-adjust either our summary metric or our control variables.

Delaware (Daines, 2001). We show that Tobin's Q is positively related to Gov-Score, and we examine which of the 51 factors underlying Gov-Score drive the relation between Gov-Score and firm value. We use three econometric techniques to conduct this investigation. First, we regress Tobin's Q on all 51 firm-specific factors. Second, similar to BCF, we regress Tobin's Q on each of the 51 factors plus the remaining 50 (hereafter Gov-Rem50), defined as Gov-Score minus the factor in question.¹⁷ Third, we use stepwise regression to identify which of the 51 factors enter our valuation model. We employ the White (1980) procedure to correct for heteroskedasticity when using the first two methods. We include three control variables, log of assets, log of firm age, and a dummy for incorporation in Delaware, when using all three techniques.

We identify seven factors that are significant with their expected (positive) signs using at least two of our three approaches: (1) board members are elected annually; (2) company either has no poison pill or a pill that was shareholder approved; (3) option re-pricing did not occur within the last three years; (4) average options granted in the past three years as a percent of basic shares outstanding did not exceed 3%; (5) all directors attended at least 75% of board meetings or had a valid excuse for non-attendance; (6) board guidelines are in each proxy statement; and (7) directors are subject to stock ownership guidelines. We form a parsimonious summary index based on these seven factors, and we show that a small subset of ISS data (seven of 51 factors) fully drives the relation between Gov-Score and firm valuation.

4. Firm valuation and Gov-Score

Table 1, panel A, provides descriptive statistics for Tobin's Q, Gov-Score and our control variables. Table 1, panel B, provides Spearman and Pearson correlations between Tobin's Q, Gov-Score and the control variables. Tobin's Q ranges from 0.49 to 9.53, with a mean and median of 1.66 and 1.21, and a standard deviation of 1.32. Gov-Score ranges from 13 to 38, with a mean and median of 22.52 and 22, and a standard deviation of 3.45. Log of assets ranges from 0.16 to 13.91, with a mean and median of 5.82 and 5.76, and a standard deviation of 2.25. Log of firm age ranges from 1.61 to 5.10, with a mean and median of 3.85 and 3.80, and a standard deviation of 0.83. The Delaware dummy ranges from 0 to 1, with mean and median of 0.60 and 1, and a standard deviation of 0.49.

Panel B shows the Pearson correlation between Tobin's Q and Gov-Score is 0.057 and the Spearman correlation between Tobin's Q and Gov-Score is

¹⁷ BCF run 24 regressions using IRRC data so their remaining summary measures sum up the other 23 factors. We run 51 regressions using ISS data so our remaining summary measures sum up the other 50 factors.

Table 1
Univariate statistics (1868 firms)

	Mean	Std. deviation	Min	25th percentile	Median	75th percentile	Max
<i>Panel A: Descriptive statistics</i>							
Tobin's Q	1.66	1.32	0.49	0.99	1.21	1.79	9.53
Gov-Score	22.52	3.45	13	20	22	25	38
Log (Assets)	5.82	2.25	0.16	4.26	5.76	7.29	13.91
Log (Firm Age)	3.85	0.83	1.61	3.22	3.80	4.55	5.10
Delaware dummy	0.60	0.49	0	0	1	1	1
	Tobin's Q	Gov-Score	Log (Assets)	Log (Firm Age)	Delaware dummy		
<i>Panel B: Correlations</i>							
Tobin's Q	1	0.112***	0.155***	0.138***	−0.045*		
Gov-Score	0.057**	1	0.234***	0.283***	−0.115***		
Log (Assets)	−0.109***	0.267***	1	0.412***	−0.030		
Log (Firm Age)	−0.001	0.291***	0.403***	1	−0.188***		
Delaware dummy	0.004	−0.116***	−0.022***	−0.191	1		

Panel A provides the descriptive statistics for Tobin's Q, Gov-Score and control variables. Panel B provides the Pearson (below diagonal) and Spearman (above diagonal) correlations of Tobin's Q, Gov-Score and control variables. Tobin's Q is defined as: (Total Assets (Compustat Annual Item 6) + Market Value of Equity (Stock Price Fiscal Year Close (Compustat Annual Item 199) * Common Shares Outstanding (Compustat Annual Item 25)) – Total Common Equity (Compustat Annual Item 60) – Deferred Taxes (Balance Sheet) (Compustat Annual Item 74))/ Total Assets. Our definition of Tobin's Q is common in the economics, law and finance literatures (e.g., Kaplan and Zingales, 1997; Gompers et al., 2003; Bebchuk and Cohen, 2005). Tobin's Q is industry mean-adjusted using the 23 ISS defined industries after winsorizing the top and bottom 1% of its distribution (in panel A, Tobin's Q is presented before industry adjustment but after winsorizing the top and bottom 1% of its distribution). Gov-Score is the summation of governance provisions that are considered minimally acceptable (see Appendix for 51 provisions). The control variables are natural logarithm of total assets, natural logarithm of firm age as measured in fiscal quarters, and a dummy variable indicating whether a firm is incorporated in Delaware or not (coded 1 and 0, respectively).

*** (**) (*) Indicates significance at 1% (5%) (10%), two-tailed level.

0.112.¹⁸ The Pearson correlation between Tobin's Q and log of assets is −0.109, but the Spearman correlation between Tobin's Q and log of assets is 0.155. The Pearson correlation between Tobin's Q and log of firm age is insignificant, but the Spearman correlation between these two variables is significant (−0.001 and 0.138). The Pearson and Spearman correlations between Tobin's Q and the Delaware dummy of 0.004 and −0.045 reveal that only the Spearman is significant. The Spearman and Pearson correlations between Gov-Score and both log of assets and log of firm age are positive, while those between Gov-Score

¹⁸ Unless stated otherwise, all correlations mentioned in the text are significant.

Table 2
Regressions of Tobin's Q on Gov-Score and controls (1868 firms)

Intercept	Gov-Score	Log (Assets)	Log (Firm Age)	Delaware dummy	Adj. R^2
-0.46999** (-2.27)	0.031432*** (3.75)	-0.08119*** (-3.89)	0.054118 (1.59)	0.044813 (0.76)	1.89%

Tobin's Q is regressed on Gov-Score and the control variables. Tobin's Q is industry mean-adjusted using the 23 ISS defined industries after winsorizing the top and bottom 1% of its distribution. Tobin's Q is defined as: (Total Assets (Compustat Annual Item 6) + Market Value of Equity (Stock Price Fiscal Year Close (Compustat Annual Item 199) * Common Shares Outstanding (Compustat Annual Item 25)) - Total Common Equity (Compustat Annual Item 60) - Deferred Taxes (Balance Sheet) (Compustat Annual Item 74))/Total Assets. Gov-Score is the summation of governance provisions that are considered minimally acceptable (see Appendix for 51 provisions). The control variables are natural logarithm of total assets, natural logarithm of firm age as measured in fiscal quarters, and a dummy variable indicating whether a firm is incorporated in Delaware or not (coded 1 and 0, respectively). The *t*-statistics are reported in parentheses below coefficient estimates. *t*-Statistics are based on White-adjusted standard errors.

*** (**)

 Indicates significance at 1% (5%), two-tailed level.

and the Delaware dummy are negative. The Spearman and Pearson correlations between log of assets and log of firm age are positive. The only other significant correlations among the control variables are a negative Spearman between the Delaware dummy and log of firm age and a negative Pearson between the Delaware dummy and log of firm assets.

Table 2 presents results of regressions of Tobin's Q on Gov-Score and the control variables. Gov-Score is significant at the 1% level (coefficient estimate = 0.031432, *t*-statistic = 3.75), revealing that firm performance is positively related to our summary measure of corporate governance. The only significant control variable is log of assets (coefficient estimate = -0.08119, *t*-statistic = -3.89).

5. Which factors drive the relation between firm valuation and Gov-Score?

We refer to the three approaches described in Section 3 above to determine which provisions underlying Gov-Score drive the relation between Gov-Score and firm value as ALL, BCF and STEP, respectively, and we identify the drivers using each one.

5.1. ALL approach

Our first approach regresses Tobin's Q on all 51 ISS factors and the three control variables. Untabulated results reveal that the highest variance inflation factor among our independent variables is 2.81, well below the commonly used cutoff of 10 indicating multicollinearity problems, so we include all 51 factors in our model. Table 3 shows the six governance factors that are significant and

Table 3
Regression of Tobin's Q on all 51 Gov-Score provisions, and controls (1868 firms)

Governance provision	Coefficient estimate
Board members are elected annually (no staggered board)	0.168412** (2.16)
Company either has no poison pill or a pill that was shareholder approved	0.186193*** (3.05)
Option re-pricing did not occur within last three years	0.250651** (1.98)
Directors are subject to stock ownership guidelines	0.169731* (1.67)
All directors attended at least 75% of board meetings or had a valid excuse for non-attendance	0.180266** (2.10)
The average options granted in the past three years as a percentage of basic shares outstanding did not exceed 3% (option burn rate is not excessive)	0.281377*** (3.75)

Tobin's Q is regressed on all 51 individual governance provisions underlying Gov-Score and the control variables. Tobin's Q is industry mean-adjusted using the 23 ISS defined industries after winsorizing the top and bottom 1% of its distribution. Tobin's Q is: (Total Assets (Compustat Annual Item 6) + Market Value of Equity (Stock Price Fiscal Year Close (Compustat Annual Item 199) * Common Shares Outstanding (Compustat Annual Item 25)) – Total Common Equity (Compustat Annual Item 60) – Deferred Taxes (Balance Sheet) (Compustat Annual Item 74))/ Total Assets. The control variables are natural logarithm of total assets, natural logarithm of firm age as measured in fiscal quarters, and a dummy variable indicating whether a firm is incorporated in Delaware or not (coded 1 and 0, respectively). For ease of exposition, we exclude coefficient estimates for the intercept and the control variables. The *t*-statistics are reported in parentheses below coefficient estimates. *t*-Statistics are based on White-adjusted standard errors.

*** (**) (*) Indicates significance at 1% (5%) (10%), two-tailed level.

positive: (1) board members are elected annually (no staggered board); (2) company either has no poison pill or a pill that was shareholder approved; (3) option re-pricing did not occur within the last three years; (4) directors are subject to stock ownership guidelines; (5) all directors attended at least 75% of board meetings or had a valid excuse for non-attendance; and (6) average options granted in the past three years as a percent of basic shares outstanding did not exceed 3% (i.e., option burn rate is not excessive). The only control variable that enters significantly is log of assets (untabulated).

The first factor is part of the [Cremers and Nair \(2005\)](#) anti-takeover index, and the first two factors are part of the BCF entrenchment index.¹⁹ The other four factors represent internal governance; none have been considered heretofore. As shown in [Appendix](#), [ISS \(2003\)](#) places the third and sixth factors in the

¹⁹ [Cremers and Nair \(2005\)](#) include three provisions in their anti-takeover index: classified (staggered) board, restrictions of shareholders' ability to call a special meeting or to act by written consent, and blank check preferred stock.

executive and director compensation category; the fourth in the ownership category; and the fifth in the board of directors' category.

5.2. BCF approach

Our second approach mirrors the one undertaken by BCF when they evaluated the six factors underlying their entrenchment index. To assess each factor's importance, BCF regress Tobin's Q on the factor, G-Index minus the factor in question, and their control variables. We use a similar approach but rather than use the 24-factor G-Index minus the factor, we use the 51-factor Gov-Score index minus the factor (hereafter Gov-Rem50).

Table 4 shows the nine factors that are significant and positive. Not surprisingly, Gov-Rem50 is significant in all nine regressions.²⁰ While not tabulated, the log of assets is significant in all nine regressions, the log of firm age is significant for two regressions (poison pill and board has outside advisors), and the Delaware dummy is not significant in any regressions. Six factors are the same as those identified using the ALL approach. As we already delineated these six factors in Section 5.1, we do not repeat them here.

Three factors are identified using the BCF procedure but not the ALL approach: (1) board guidelines are in each proxy statement; (2) option re-pricing is prohibited; and (3) board has outside advisors. ISS categorizes each of these three internal governance factors as board of directors, executive and director compensation, and progressive practices, respectively. None of these factors has been linked heretofore to firm value.

5.3. STEP approach

Our third approach for determining individual ISS factors linked to firm valuation is to use stepwise regression.²¹ Table 5 results reveal that four of these six factors were also identified using the ALL and BCF approaches: (1) average options granted in the past three years as a percentage of basic shares outstanding did not exceed 3%; (2) board members are elected annually (no staggered board); (3) company either has no poison pill or a pill that was shareholder approved; and (4) option re-pricing did not occur within the last three years.

Two factors were identified by both the ALL and BCF approaches (but not by the STEP procedure): (1) directors are subject to stock ownership guide-

²⁰ Failure to find Gov-Rem50 to be significant would indicate that a single factor is the sole driver of the relation between Gov-Score and firm valuation.

²¹ We use the stepwise selection in SAS, which is a variant of the forward-selection technique, where variables already in the model do not necessarily stay there. In order to stay in the model, a coefficient must be significant at the 10% two-tailed level. The stepwise approach allows the control variables to enter the model but only log of assets enters.

Table 4
Regressions of Tobin's Q on each individual provision in Gov-Score, Gov-Rem50 and controls (1868 firms)

Governance provision	Coefficient estimate	Gov-Rem50	Adj. R ² (%)
All directors attended at least 75% of board meetings or had a valid excuse for non-attendance	0.186784** (2.22)	0.031086*** (3.70)	1.95
Board members are elected annually (no staggered board)	0.103892* (1.73)	0.026959*** (3.06)	1.91
Board guidelines are in each proxy statement	0.279016** (2.51)	0.025249*** (2.77)	2.00
Company either has no poison pill or a pill that was shareholder approved	0.171409*** (3.19)	0.029089*** (3.45)	2.13
Option re-pricing did not occur within last three years	0.27061** (2.11)	0.029808*** (3.55)	2.02
The average options granted in the past three years as a percentage of basic shares outstanding did not exceed 3% (option burn rate is not excessive)	0.22771*** (3.39)	0.026458*** (3.23)	2.32
Option re-pricing is prohibited	0.111625* (1.86)	0.111625*** (3.47)	1.89
Directors are subject to stock ownership guidelines	0.202376** (2.33)	0.02832*** (3.22)	1.92
Board has outside advisors	0.215303* (1.94)	0.027867*** (3.15)	1.91

Tobin's Q is regressed on each of the individual governance provisions underlying Gov-Score, Gov-Rem50 and the control variables. Tobin's Q is industry mean-adjusted using the 23 ISS defined industries after winsorizing the top and bottom 1% of its distribution. Tobin's Q is: (Total Assets (Compustat Annual Item 6) + Market Value of Equity (Stock Price Fiscal Year Close (Compustat Annual Item 199) * Common Shares Outstanding (Compustat Annual Item 25)) – Total Common Equity (Compustat Annual Item 60) – Deferred Taxes (Balance Sheet) (Compustat Annual Item 74))/Total Assets. Gov-Rem50 is Gov-Score minus the individual provision in question. The control variables are natural logarithm of total assets, natural logarithm of firm age as measured in fiscal quarters, and a dummy variable indicating whether a firm is incorporated in Delaware or not (coded 1 and 0, respectively). For ease of exposition, we exclude coefficient estimates for the intercept and the control variables. The *t*-statistics are reported in parentheses below coefficient estimates. *t*-Statistics are based on White-adjusted standard errors.

*** (**) (*) Indicates significance at 1% (5%) (10%), two-tailed level.

lines, and (2) all directors attended at least 75% of board meetings or had a valid excuse for non-attendance. One factor was identified by both the BCF and STEP methods but not by ALL, board guidelines are in each proxy statement. We include these three factors along with those four factors that are common to all three approaches, creating a seven-factor index, Gov-7.²² We

²² We do not include those three factors that were only identified via one procedure (procedure shown in parentheses): (1) option re-pricing is prohibited (BCF); (2) board has outside advisors (BCF); and (3) nominating committee is comprised solely of independent outside directors (STEP).

Table 5
Stepwise regression of Tobin's Q on the 51 governance provisions and controls (1868 firms)

Governance provision	Coefficient estimate
The average options granted in the past three years as a percentage of basic shares outstanding did not exceed 3% (option burn rate is not excessive)	0.24217*** (3.91)
Board guidelines are in each proxy statement	0.35945*** (2.72)
Board members are elected annually (no staggered board)	0.15534*** (2.63)
Company either has no poison pill or a pill that was shareholder approved	0.16365*** (2.75)
Option re-pricing did not occur within last three years	0.27336** (2.19)
Nominating committee is comprised solely of independent outside directors	0.13480* (1.93)

Tobin's Q is regressed on all 51 governance provisions that underlie Gov-Score and the control variables using a stepwise technique. We use the stepwise selection in SAS, which is a variation on the forward-selection technique, where variables already in the model do not necessarily stay there. In order to stay in the model, we require a coefficient to be significant at the 10% two-tailed level. Tobin's Q is industry mean-adjusted using the 23 ISS defined industries after winsorizing the top and bottom 1% of its distribution. Tobin's Q is defined as: (Total Assets (Compustat Annual Item 6) + Market Value of Equity (Stock Price Fiscal Year Close (Compustat Annual Item 199) * Common Shares Outstanding (Compustat Annual Item 25)) – Total Common Equity (Compustat Annual Item 60) – Deferred Taxes (Balance Sheet) (Compustat Annual Item 74))/ Total Assets. The control variables are natural logarithm of total assets, natural logarithm of firm age as measured in fiscal quarters, and a dummy variable indicating whether a firm is incorporated in Delaware or not (coded 1 and 0, respectively). For ease of exposition, we do not report coefficient estimates for the intercept or the control variables. The *t*-statistics are reported in parentheses below coefficient estimates.

*** (**) (*) Indicates significance at 1% (5%) (10%), two-tailed level.

next evaluate whether Gov-7, based on two external and five internal governance factors, fully drives the relation between firm valuation and Gov-Score.

6. Parsimonious index fully driving the link between firm value and Gov-Score

Tables 3–5 results suggest that a parsimonious governance index based on seven governance factors may be sufficient (with respect to 51 ISS measures) for creating a summary index linked to firm valuation. Similar to the construction by GIM of their 24-factor G-Index, Cremers and Nair (2005) of their three-factor external governance index, and BCF of their six-factor entrenchment index, we create Gov-7 index by summing our seven binary factors. Using the BCF approach discussed above, we regress Tobin's Q on Gov-7, the remaining summary measure (Gov-Rem44, i.e., Gov-Score minus Gov-7),

Table 6
Regressions of Tobin's Q on Gov-7, Gov-Rem44 and controls (1868 firms)

Intercept	Gov-7	Gov-Rem44	Log (Assets)	Log (Firm Age)	Delaware dummy	Adj. R^2 (%)
-0.44364** (-2.15)	0.175051*** (6.09)	0.005984 (0.64)	-0.08335*** (-4.01)	0.048207 (1.42)	0.051457 (0.88)	3.22

Tobin's Q is regressed on Gov-7, remaining 44 Gov-Score provisions (Gov-Rem44) and control variables. Tobin's Q is industry mean-adjusted using the 23 ISS defined industries after winsorizing the top and bottom 1% of its distribution. Gov-7 is created by summing the seven provisions found to be significant and positive in at least two of the following tables: Tables 3–5. Gov-Rem44 is Gov-Score minus Gov-7. Tobin's Q is defined as: (Total Assets (Compustat Annual Item 6) + Market Value of Equity (Stock Price Fiscal Year Close (Compustat Annual Item 199) * Common Shares Outstanding (Compustat Annual Item 25)) – Total Common Equity (Compustat Annual Item 60) – Deferred Taxes (Balance Sheet) (Compustat Annual Item 74))/Total Assets. The control variables are natural logarithm of total assets, natural logarithm of firm age as measured in fiscal quarters, and a dummy variable indicating whether a firm is incorporated in Delaware or not (coded 1 and 0, respectively). The t -statistics are reported in parentheses below coefficient estimates. t -Statistics are based on White-adjusted standard errors.

*** (**). Indicates significance at 1% (5%), two-tailed level.

and the three controls. If Gov-7 fully drives the relation between Gov-Score and firm value, Gov-7 (but not Gov-Rem44) should have a significant and positive coefficient.

We present our results in Table 6. Consistent with the notion that a small subset of governance factors provided by corporate governance data providers are linked to firm valuation, Gov-7 is significant (coefficient estimate = 0.175051, t -statistic = 6.09) and Gov-Rem44 is insignificant (coefficient estimate = 0.005984, t -statistic = 0.64).²³ Our finding that the absence of a staggered board and the absence of a poison pill, two factors common to both the IRRC and ISS databases, help drive the relation between governance and firm value adds validity to the BCF findings and our findings that these two external factors are significantly and positively associated with firm value.²⁴

7. Additional analyses

We conduct three additional analyses. We first examine if our findings are attributable only to the one fiscal year we examined above, namely 2002. We

²³ We also ran a multivariate regression with Gov-7 and all 44 individual provisions, and found none of the 44 individual provisions is positive and significant.

²⁴ Absence of a staggered board is one of the three factors underlying the Cremers and Nair (2005) index, and it is the primary driver in the Bebchuk and Cohen (2005) study so our evidence also adds validity to these two studies.

show that our results pertain to firms with fiscal years ending in both 2001 and 2003, increasing our confidence in the validity of our findings. Second, we mitigate the endogeneity problem that more highly valued firms may opt for better governance using a procedure advocated by Klein (1998). We show that our results are robust to this potential validity threat, mitigating the concern that our evidence is due to reverse causality. Third, we examine if Gov-7 is better linked to firm valuation, and if it changes more temporally than does a modified form of the BCF entrenchment index (ENT). We show that Gov-7 is better linked to firm value, and that it experiences greater temporal changes than ENT.

7.1. Other years

Our aforementioned findings are based on data as of a single point in time. More specifically, we linked ISS corporate governance data to firm value using 2002 fiscal year end Compustat data. It is conceivable that our results only pertain to 2002. To examine this issue, we replicate our results for the two surrounding years.²⁵

Table 7, panel A, presents results of regressions of Tobin's Q on Gov-Score and our control variables. Consistent with our Section 4 results, Gov-Score is significant and positive in both 2001 and 2003. Panel B of Table 7 presents results of regressions of Tobin's Q on Gov-7, Gov-Rem44 and our controls. Consistent with our results in Section 6, Gov-7 is significant and positive while Gov-Rem44 is insignificant in both 2001 and 2003. It is evident that our results are not an artifact of a single year.

7.2. Endogeneity

We have identified a link between Tobin's Q and various firm-specific corporate governance measures but we have been silent as to whether better governance enhances firm valuation or whether more highly valued firms opt for better governance. While we can never be sure of the direction of causality, especially given the short time period over which ISS data are available, we follow Klein (1998) and include the lagged value of the industry mean-adjusted Tobin's Q in our regression model. If our summary measures remain

²⁵ We continue to use ISS data as of February 1, 2003 as it is standard in the literature to relate a summary governance measure in one year to firm valuation in several years. See, for example, GIM and BCF.

Table 7

Regressions of Tobin's Q on Gov-7, Gov-Score, Gov-Rem44 and control variables: 2001 and 2003

Year	Number of firms	Intercept	Gov-Score	Log (Assets)	Log (Firm Age)	Delaware dummy	Adj. R ² (%)	
<i>Panel A: Regressions of Tobin's Q on Gov-Score and control variables: 2001 and 2003</i>								
2001	1916	-0.49766* (-1.93)	0.042138*** (3.87)	-0.08769*** (-3.37)	0.003899 (0.09)	0.075873 (0.97)	1.36	
2003	1678	0.277298 (0.97)	0.037166*** (3.45)	-0.17982*** (-6.20)	-0.02402 (-0.45)	0.099422 (1.24)	5.27	
Year	Number of firms	Intercept	Gov-7	Gov-Rem44	Log (Assets)	Log (Firm Age)	Delaware dummy	Adj. R ² (%)
<i>Panel B: Regressions of Tobin's Q on Gov-7, Gov-Rem44 and control variables: 2001 and 2003</i>								
2001	1916	-0.48029* (-1.86)	0.163043*** (4.22)	0.020565 (1.55)	-0.08925*** (-3.43)	-0.00009 (-0.00)	0.082535 (1.06)	1.87
2003	1678	0.306206 (-1.08)	0.172674*** (4.26)	0.012639 (1.06)	-0.1829*** (-6.30)	-0.02583 (-0.49)	0.104877 (1.31)	5.87

In panel A, Tobin's Q is regressed on Gov-Score and control variables for 2001 and 2003. In panel B, Tobin's Q is regressed on Gov-7, remaining 44 Gov-Score provisions (Gov-Rem44) and control variables for 2001 and 2003. We use the February 1, 2003 ISS data for both years and Compustat for the 2001 and 2003 fiscal years for Tobin's Q and controls. Tobin's Q is industry mean-adjusted using the 23 ISS defined industries after winsorizing the top and bottom 1% of its distribution. Tobin's Q is defined as: (Total Assets (Compustat Annual Item 6) + Market Value of Equity (Stock Price Fiscal Year Close (Compustat Annual Item 199) * Common Shares Outstanding (Compustat Annual Item 25)) - Total Common Equity (Compustat Annual Item 60) - Deferred Taxes (Balance Sheet) (Compustat Annual Item 74))/ Total Assets. Gov-Score is the summation of governance provisions that are considered minimally acceptable (see Appendix for 51 provisions). Gov-7 is created by summing the seven provisions found to be significant and positive in at least two of the following tables: Tables 3–5. Gov-Rem44 is Gov-Score minus Gov-7. The control variables are natural logarithm of total assets, natural logarithm of firm age as measured in fiscal quarters, and a dummy variable indicating whether a firm is incorporated in Delaware or not (coded 1 and 0, respectively). The *t*-statistics are reported in parentheses below coefficient estimates. *t*-Statistics are based on White-adjusted standard errors.

significant in this expanded model, we can rule out reverse causality to a limited extent.²⁶

²⁶ Another approach is to use simultaneous equations. However, such an approach requires finding suitable instruments for our summary governance indices. Unfortunately, the appropriate instrument or set of instruments for our summary governance measures is theoretically unclear and instruments are lacking from prior literature. Most prior literature using instruments examine one facet of governance (e.g., firm independence, Bhagat and Black, 2002) and such instruments are unlikely to be good for a broad index of governance provisions. Larcker and Rusticus (2005) argue that in the corporate governance literature it is extremely difficult to find a good instrument, namely one that is highly correlated with the variable of interest but uncorrelated with the error term of the true structural model. As a result, they contend that OLS estimates are sometimes better than 2SLS estimates.

Table 8

Regressions of Tobin's Q on Gov-Score, Gov-7, Gov-Rem44, lagged Tobin's Q and controls (1851 firms)

Gov-Score	Gov-7	Gov-Rem44	Lagged Tobin's Q	Adj. R ² (%)
0.020602*** (2.92)	N/A	N/A	0.19441*** (3.40)	28.97
N/A	0.117636*** (4.81)	0.003654 (0.48)	0.192051*** (3.37)	29.56

Tobin's Q is regressed on combinations of Gov-Score, Gov-7, Gov-Rem44, lagged value of Tobin's Q and the control variables. Tobin's Q is industry mean-adjusted using the 23 ISS defined industries after winsorizing the top and bottom 1% of its distribution. Tobin's Q is defined as: (Total Assets (Compustat Annual Item 6) + Market Value of Equity (Stock Price Fiscal Year Close (Compustat Annual Item 199) * Common Shares Outstanding (Compustat Annual Item 25)) – Total Common Equity (Compustat Annual Item 60) – Deferred Taxes (Balance Sheet) (Compustat Annual Item 74))/Total Assets. Gov-Score is the summation of governance provisions that are considered minimally acceptable governance (see Appendix for 51 provisions). The lagged value of industry mean-adjusted Tobin's Q is included to deal with joint endogeneity (Klein, 1998). Gov-7 is created by summing the seven provisions found to be significant and positive in at least two of the three tables: Tables 3–5. Gov-Rem44 is Gov-Score minus Gov-7. The control variables are natural logarithm of total assets, natural logarithm of firm age as measured in fiscal quarters, and a dummy variable indicating whether a firm is incorporated in Delaware or not (coded 1 and 0, respectively). The *t*-statistics are reported in parentheses below coefficient estimates. For ease of exposition, we do not report coefficient estimates for the intercept or the control variables. *t*-Statistics are based on White-adjusted standard errors.

*** Indicates significance at 1%, two-tailed level.

Table 8 provides these results. As expected, lagged Tobin's Q is positive and significant in both regressions. More importantly, in the Gov-Score regression, Gov-Score is significant (coefficient estimate = 0.020602, *t*-statistic = 2.92), while in the Gov-7 regression, Gov-7 is significant (coefficient estimate = 0.117636, *t*-statistic = 4.81) and Gov-Rem44 is insignificant (coefficient estimate = 0.003654, *t*-statistic = 0.48). These findings provide some comfort that our Sections 4–6 results are not attributable to reverse causality.

7.3. Gov-Score versus entrenchment index

Bebchuk et al. (2005) provide evidence that the entrenchment index fully explains the relation between G-Index and firm valuation. We create a five-factor summary measure of entrenchment, ENT, which is a modification of the six-factor BCF entrenchment index. The BCF entrenchment index sums the presence of the six anti-takeover provisions that are part of G-Index: (1) staggered board, (2) limits to shareholder bylaw amendments, (3) supermajority requirement for mergers, (4) supermajority requirements for charter amendments, (5) poison pills, and (6) golden parachutes. ISS does not provide information on golden parachutes, so

Table 9

Incremental explanatory power of Gov-Score over the entrenchment index (1868 firms)

Intercept	Gov-Score-ENT	ENT	Log (Assets)	Log (Firm Age)	Delaware dummy	Adj. R^2 (%)
–0.05238 (–0.30)	–	0.040196* (1.78)	–0.06644*** (–3.30)	0.085252** (2.46)	0.032922 (0.57)	1.36
–0.47294** (–2.27)	0.030824*** (3.38)	0.034668 (1.54)	–0.08046*** (–3.70)	0.055053 (1.61)	0.044915 (0.76)	1.84

Tobin's Q is regressed on ENT (the entrenchment measure developed by Bebchuk, Cohen and Ferrell), Gov-Score-ENT and the control variables. Tobin's Q is industry mean-adjusted using the 23 ISS defined industries after winsorizing the top and bottom 1% of its distribution. Tobin's Q is defined as: (Total Assets (Compustat Annual Item 6) + Market Value of Equity (Stock Price Fiscal Year Close (Compustat Annual Item 199) * Common Shares Outstanding (Compustat Annual Item 25)) – Total Common Equity (Compustat Annual Item 60) – Deferred Taxes (Balance Sheet) (Compustat Annual Item 74))/Total Assets. ENT is a modified version of the entrenchment index created by [Bebchuk et al. \(2005\)](#), a summation of the presence of six anti-takeover provisions (staggered board, limits to shareholder bylaw amendments, supermajority requirement for mergers, supermajority requirements for charter amendments, poison pills, and golden parachutes). ENT sums the presence of good governance for five of these six entrenchment factors as ISS does not have data for golden parachutes. Gov-Score-ENT is the summation of governance provisions that are considered minimally acceptable governance (see [Appendix](#) for 51 provisions) less ENT. The control variables are natural logarithm of total assets, natural logarithm of firm age as measured in fiscal quarters, and a dummy variable indicating whether a firm is incorporated in Delaware or not (coded 1 and 0, respectively). The *t*-statistics are reported in parentheses below coefficient estimates. *t*-Statistics are based on White-adjusted standard errors.

*** (**) (*) Indicates significance at 1% (5%) (10%), two-tailed level.

we sum the first five entrenchment factors to create ENT.²⁷ We begin by replicating the finding of BCF that ENT is related to Tobin's Q. [Table 9](#) indicates that, as expected, ENT is both significant and positive. Next, we include both ENT (a modified version of the entrenchment index) and Gov-Score-ENT (Gov-Score less the entrenchment index) in a regression to examine whether Gov-Score-ENT adds incrementally to ENT. [Table 9](#) reveals that Gov-Score-ENT adds in explaining Tobin's Q, but that the coefficient on ENT is insignificant when Gov-Score-ENT is included in the model. Thus, it is clear that Gov-Score does a better job than does the entrenchment index for explaining firm value.²⁸

Our analysis indicates that Gov-7, which incorporates both internal and external governance, is sufficient to explain the linkage between Gov-Score and Tobin's Q. Since Gov-7 is based on five internal and two external measures while the BCF entrenchment index is based on six external measures, and as it

²⁷ BCF show that golden parachute has the smallest coefficient of their six factors (see their [Table IX](#)) so omitting this factor from our entrenchment index should minimally impact our results.

²⁸ When ENT is used by itself, its coefficient is 0.040196. Consistent with BCF, its coefficient is significant (*t*-value = 1.78), albeit it is much lower than when Gov-Score is used by itself (*t*-value of 3.75, see [Table 2](#)).

is easier to alter internal than external measures, we expect Gov-7 to have more temporal variation than our modified version of the BCF entrenchment index. In untabulated results, we find that from 2003 to 2005 Gov-7 experienced a mean increase of 25.97% (significantly different from zero) while ENT had a mean decrease of -0.94% (insignificantly different from zero).²⁹ The 2003–2005 time period coincides with significant internal governance changes brought about by the Sarbanes–Oxley Act and the three major US stock exchanges so it is not surprising that a summary corporate governance measure incorporating both internal and external factors changes much more temporally than one confined to external governance measures. One desirable feature of a summary index is that it reflects changes in the overall governance environment such as those major changes occurring in the last few years. Our evidence that Gov-7 changes much more over time than does ENT suggests that ISS data have relatively more of this desirable feature than do IRRC data.

8. Discussion

We now discuss how the seven governance factors that constitute Gov-7 span the eight ISS governance categories, and which governance measures mandated either by the Sarbanes–Oxley Act of 2002 (SOX) or the three major US stock exchanges are linked to firm valuation. None of the four governance factors categorized by ISS as audit-related are linked to firm value, including two instituted by SOX: (1) audit committee consists solely of independent outsiders; and (2) consulting fees paid to auditors are less than audit fees paid to auditors. Our first finding is similar to Klein (1998) who found audit committee independence to be unrelated to firm profitability. Our second finding is similar to Ashbaugh et al. (2003) and Larcker and Richardson (2004) who found the magnitude of non-audit versus audit services to be unrelated to earnings management.³⁰

Only three of the 17 governance factors categorized by ISS as board of directors are linked to firm valuation: (1) all directors attended at least 75% of board meetings or had a valid excuse for non-attendance; (2) board members are elected annually; (3) and board guidelines are in each proxy statement. The latter is not a requirement of SOX but it is a requirement of the NYSE.³¹ Neither of the first two governance factors is required by SOX or the three

²⁹ The 2005 data used for this purpose were ISS data as of February 1, 2005, precisely two years after the ISS data used in the rest of our study. Since we require firms having relevant data for both years in this analysis, attrition reduced our sample size to 1738.

³⁰ Similarly, Kinney et al. (2004) found no relation between earnings restatements and fees paid for financial information systems design and implementation or internal audit services, and Agrawal and Chadha (2005) found no relation between audit committee independence or the extent auditors provide non-audit services with the probability a firm restates its earnings.

³¹ <http://www.nyse.com/FrameSet.html?displayPage=/lcm/1078416930906.html?archive=no>.

major US stock exchanges. The second factor has been linked to firm value by [Bebchuk et al. \(2005\)](#). Three of the 14 governance factors categorized by ISS as board of directors that are *unrelated* to firm value were required by the major US stock exchanges (but not by SOX): (1) board is controlled by more than 50% independent outside directors; (2) compensation committee is comprised solely of independent outside directors; and (3) nominating committee is comprised solely of independent outside directors. Our findings of no link between board independence and firm value is similar to that of absence of links between board independence and firm operating performance ([Bhagat and Black, 2002](#); [Klein, 1998](#)).

Only one of the seven governance factors categorized by ISS as charter/bylaws is linked to firm valuation, firm either has no poison pill or a shareholder-approved one. Similar evidence was shown by [Bebchuk et al. \(2005\)](#). Neither of the ISS categories, director education nor state of incorporation, is linked to firm valuation.

Only two of the 10 governance factors ISS categorizes as executive and director compensation are linked to firm valuation: (1) option re-pricing did not occur within the last three years, and (2) the average options granted in the past three years as a percentage of basic shares outstanding did not exceed 3%. Neither was mandated by SOX nor the major US stock exchanges. Only one of the 10 governance factors categorized by ISS as executive and director compensation was mandated by the major stock exchanges (but not by SOX), stock incentive plans were adopted with shareholder approval, and this governance measure is not linked to firm value. The absence of a link to firm valuation is consistent with the contention of [Bebchuk and Fried \(2004\)](#) that shareholder approvals provide little assurance that these managers will act in shareholders' best interests. Firms must expense stock options, a recent FASB requirement, is not linked to firm valuation.

Only one of the four governance measures ISS categorizes as ownership is linked to firm valuation, namely directors are subject to stock ownership guidelines. It was required neither by SOX nor the major US stock exchanges. None of the seven factors categorized by ISS as progressive practices is linked to firm valuation. However, three of them were required by the major stock exchanges (but not by SOX): (1) performance of board is reviewed regularly; (2) a board-approved CEO succession plan is in place; and (3) outside directors meet without the CEO and disclose the number of times they meet.

9. Summary

We relate corporate governance to firm valuation using 1868 firms based on 51 internal and external corporate governance provisions provided by Institutional Investor Services (ISS) as of February 1, 2003. We create a broad

summary measure of corporate governance, Gov-Score, which sums these 51 binary provisions where each is coded 1 (0) if it does (not) represent minimally acceptable governance.

We document that Gov-Score is significantly and positively associated with Tobin's Q, and we examine which provisions underlying Gov-Score drive this relation. We identify seven provisions, including two underlying the [Bebchuk et al. \(2005\)](#) entrenchment index (no poison pill and no staggered board) that drive the relation between Gov-Score and firm valuation. The fact that both [Bebchuk et al.](#) and we identify these provisions even though the two studies used different data, firms, years, and methodologies is powerful evidence that these two entrenchment measures are linked to firm valuation.

We identify five internal governance provisions that are linked to firm value: (1) option re-pricing did not occur within the last three years; (2) average options granted in the past three years as a percentage of basic shares outstanding did not exceed 3% (option burn rate is not excessive); (3) all directors attended at least 75% of board meetings or had a valid excuse for non-attendance; (4) board guidelines are in each proxy statement; and (5) directors are subject to stock ownership guidelines. Our findings confirm the results of [Cremers and Nair \(2005\)](#) that both internal and external factors link corporate governance to firm value. However, unlike [Cremers and Nair](#), who access a different database than the one they access to obtain external governance measures (the IRRC database) to obtain their sole internal governance measure, shareholder activism, we use one database (the ISS database) and identify five specific internal measures that have not previously been linked to firm value.

We examine the link between firm valuation and five corporate governance measures that are related to accounting and public policy: audit committee consists solely of independent outside directors, auditors were ratified at the most recent annual meeting, consulting fees paid to auditors are less than audit fees paid to auditors, company has a formal policy on auditor rotation, and company expenses stock options. We find that none of them are positively and significantly related to firm valuation.

[Bebchuk et al. \(2005\)](#) show that an entrenchment index, retaining only 25% of the anti-takeover measures used to create the [Gompers et al. \(2003\)](#) G-Index, fully drives the relation between G-Index and Tobin's Q. We show that a seven-factor index, retaining about 14% of the governance measures we use to create Gov-Score fully drives the relation between Gov-Score and Tobin's Q. The combined evidence of both studies confirms the contention of [Bebchuk et al. \(2005\)](#) that only a small fraction of the many factors marketed by governance data vendors are linked to firm valuation.

We examine if our results are robust to years other than 2002, and we show that our findings pertain to both 2001 and 2003. We address joint endogeneity concerns by examining if our results are robust to including a lagged value of Tobin's Q ([Klein, 1998](#)). We find that they are, providing some comfort that

our results are not due to reverse causality.³² We test whether Gov-Score adds incrementally to our modified version of the [Bebchuk et al. \(2005\)](#) entrenchment index and show that it does. We examine if Gov-7 experiences a greater temporal change between 2003 and 2005 than does our modified version of the [Bebchuk et al. \(2005\)](#) entrenchment index. Consistent with the notion that internal firm-specific governance measures are relatively easier than external governance measures to change, Gov-7 experiences far greater temporal change between 2003 and 2005 than does our modified version of the [Bebchuk et al. \(2005\)](#) entrenchment index.

We close with some caveats and suggestions for future research. First, we construct summary indices by summing governance factors classified in a binary manner, and we rely on data providers for determining what constitutes good (bad) governance. We selected both of these procedures to be consistent with past research ([Gompers et al., 2003](#); [Bebchuk and Cohen, 2005](#); [Bebchuk et al., 2005](#); [Cremers and Nair, 2005](#)). Future research wishing to enhance the link between corporate governance and firm value should consider using more sophisticated (theoretically-based) weighting procedures than simply weighting equally all factors that data providers posit to be good governance.

Second, we use corporate governance data provided by Institutional Shareholder Services, and we obtain some results similar to and some that are different from studies using the Investor Responsibility Research Center database. These are only two of many firm-specific corporate governance data providers. Future research should consider using databases of other vendors such as Governance Metric International or The Corporate Library to ascertain how our results using ISS and IRRC data compare with evidence using these other data sources.

Third, we focus on corporate governance and firm valuation. We recognize that better corporate governance is advocated for reasons aside from enhancing firm value, such as fairness and equity. It is plausible that governance factors unrelated to firm value are important for other purposes. Future research should examine corporate governance in these and in other contexts.

Appendix. Minimally acceptable corporate governance standards based on ISS Corporate Governance: Best Practices User Guide and Glossary, 2003

Audit

Audit committee consists solely of independent outside directors.

Auditors were ratified at the most recent annual meeting.

(continued on next page)

³² While we recognize that this procedure does not completely alleviate concerns that more valuable firms may opt for better governance, we lack sufficient temporal data to allow for more reliable approaches such as Granger causality.

Appendix (*continued*)

Consulting fees paid to auditors are less than audit fees paid to auditors.
Company has a formal policy on auditor rotation.

Board of directors

Managers respond to shareholder proposals within 12 months of shareholder meeting.

CEO serves on no more than two additional boards of other public companies.
All directors attended at least 75% of board meetings or had a valid excuse for non-attendance.

Size of board of directors is at least six but not more than 15 members.

No former CEO serves on board.

CEO is not listed as having a “related party transaction” in proxy statement.

Board is controlled by more than 50% independent outside directors.

Compensation committee is comprised solely of independent outside directors.

The CEO and chairman duties are separated or a lead director is specified.

Shareholders vote on directors selected to fill vacancies.

Board members are elected annually (no staggered board).

Shareholder approval is required to change board size.

Nominating committee is comprised solely of independent outside directors.

Governance committee meets at least once during the year.

Shareholders have cumulative voting rights to elect directors.

Board guidelines are in each proxy statement.

Policy exists requiring outside directors to serve on no more than five additional boards.

Charter/bylaws

A simple majority vote is required to approve a merger (not a supermajority).

Company either has no poison pill or a pill that was shareholder approved.

Shareholders are allowed to call special meetings.

A majority vote is required to amend charter/bylaws (not a supermajority).

Shareholders may act by written consent and the consent is non-unanimous.

Company is not authorized to issue blank check preferred stock.

Board cannot amend bylaws without shareholder approval or can only do so under limited circumstances.

Director education

At least one member of the board has participated in an ISS-accredited director education program.

Executive and director compensation

No interlocks exist among directors on the compensation committee.

Non-employees do not participate in company pension plans.

Appendix (continued)

Option re-pricing did not occur within last three years.
Stock incentive plans were adopted with shareholder approval.
Directors receive all or a portion of their fees in stock.
Company does not provide any loans to executives for exercising options.
The last time shareholders voted on a pay plan, ISS did not deem its cost to be excessive.
The average options granted in the past three years as a percentage of basic shares outstanding did not exceed 3% (option burn rate is not excessive).
Option re-pricing is prohibited.
Company expenses stock options.

Ownership

All directors with more than one year of service own stock.
Officers' and directors' stock ownership is at least 1% but not over 30% of total shares outstanding.
Executives are subject to stock ownership guidelines.
Directors are subject to stock ownership guidelines.

Progressive practices

Mandatory retirement age for directors exists.
Performance of the board is reviewed regularly.
A board-approved CEO succession plan is in place.
Board has outside advisors.
Directors are required to submit their resignation upon a change in job status.
Outside directors meet without the CEO and disclose the number of times they met.
Director term limits exist.

State of incorporation

Incorporation in a state without any anti-takeover provisions.

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