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012 Benchmarking Corporate Governance

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Joseph H. Currin
Corporate Counsel
Caterpillar, Inc.

Stewart M. Landefeld
Chief Legal Officer
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Richard J. Morrison
Assistant General Counsel and Assistant Secretary
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Faculty Biographies

Heather T. Boone

Heather Travis Boone is general counsel for Trinity Capital Corporation, a financial holding company headquartered in Los Alamos, NM. Ms. Boone also serves as general counsel for its subsidiaries, Los Alamos National Bank (LANB) and Title Guaranty & Insurance Company. Ms. Boone's practice focuses on corporate law, corporate governance, regulatory reporting, litigation, and general guidance for the financial institution and subsidiaries. Ms. Boone is also very active in her company's Malcolm Baldrige National Quality program and Quality New Mexico, a Baldrige-based state quality program.

Prior to joining Trinity Capital Corporation, Ms. Boone worked in human resources at Los Alamos National Laboratory and practiced commercial litigation at Strasburger & Price LLP in Houston.

Ms. Boone is currently the chair for ACC's Corporate and Securities Committee. She is also a member of the Texas and New Mexico Bar Associations, and serves as a member of the New Mexico Bar Association's bench and bar committee.

Ms. Boone received her BA from Trinity University and is a graduate of Washington & Lee University School of Law.

Joseph H. Currin

Joseph H. Currin is corporate counsel for Caterpillar in Peoria, IL. Mr. Currin started his career with Caterpillar supporting Caterpillar Logistics Services, Inc. predominantly drafting and negotiating complex commercial agreements and commercial leases. Mr. Currin was re-assigned in 2006 and now supports and is dedicated to corporate governance, securities, and treasury matters.

Prior to joining Caterpillar, Mr. Currin clerked for Chief Judge Thomas F. Waldron, Bankruptcy Court for the Southern District Ohio. Upon completion of his clerkship, Mr. Currin joined the law firm of Porter, Wright, Morris & Arthur LLP in Columbus, OH. During his tenure at Porter Wright, Mr. Currin focused primarily on bankruptcy matters and real estate transactions.

Mr. Currin is a graduate of the University of Dayton School of Law.

Stewart M. Landefeld

Stewart M. Landefeld is executive vice president and interim chief compliance officer of Washington Mutual, Inc. in Seattle. He had previously served as the Washington Mutual's interim chief legal officer while the company conducted a national search for a permanent CLO.

Prior to joining Washington Mutual, Mr. Landefeld served as a partner in the Seattle office of Perkins Coie LLP and as chair of the National Business Practice Group. He brings more than 25 years of experience in the areas of corporate governance and advice to boards of directors, mergers and acquisitions, and securities law matters. Mr. Landefeld, who has asked not to be considered in the search for a permanent chief legal officer, expects to return to practicing law at Perkins after the conclusion of the search.

His civic activities have included service on the boards of The Seattle Foundation, the Henry Art Gallery, Pike Place Market Preservation & Development Authority, the Yale Development Board, The Seattle Symphony Foundation and other nonprofits.

Mr. Landefeld received a BA from Yale University and is a graduate of The University of Chicago Law School.

Richard J. Morrison

Richard J. Morrison is associate general counsel and secretary of NSTAR Electric & Gas Corporation headquartered in Boston. At NSTAR, Mr. Morrison is responsible for the corporate governance and corporate secretarial practice, and also directs the company's corporate finance, SEC, litigation, and human resources legal support.

A long-time member of the ACC, Mr. Morrison helped to organize the ACC's Northeast Chapter and has served as both director and secretary of the Chapter. Mr. Morrison is the current president of the eastern New England chapter of the Society of Corporate Secretaries and Governance Professionals and serves on the Society's national board of directors.

Mr. Morrison holds an AB from the University of Massachusetts at Boston and a JD from Suffolk University.

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Benchmarking Corporate Governance

Wondering how your company's corporate governance practices and activities stack up against your peers or best-in-class companies?

This course will discuss the design and collection of data on corporate governance measures and also identify the different sources for securing comparative data.

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Corporate Governance Design and Evolution

- Measures
  - Availability of Data
  - Relevance

- Determining Peer Group
  - Legal Considerations, including Antitrust and Confidentiality
  - Other Considerations: Finding Best in Class, not just Best in Industry, Applicability and Consistency

- Processes for Collecting and Using Data

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Corporate Governance

- **Corporate governance** is the set of processes, customs, policies, laws and institutions affecting the way a corporation is directed, administered or controlled

- Corporate governance also includes the relationships among the many stakeholders involved and the goals for which the corporation is governed
  - The principal stakeholders are the shareholders, management and the board of directors
  - Other stakeholders include employees, suppliers, customers, banks and other lenders, regulators, the environment and the community at large

    – *Wikipedia*

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Measurement Data

- Published Reports (ACC, NACD, Industry Reports)
- Voluntary programs – ex. Baldrige
- Shareholders and Shareholder Service Groups
- Ratings Agencies
- Internet (Proxy Statements)

…and sometimes it is as simple as asking

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Corporate Governance Ratings Agencies

- Risk Metrics (ISS)
- Standard & Poor's
- Governance Metrics International
- Moody's
- The Corporate Library

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Risk Metrics

- Largest ratings agency by far; 1700 institutional shareholder clients managing $26 trillion in assets
- Composes "Corporate Governance Quotient" Ratings (CGQ) by analyzing data gathered on 63 criteria. Information primarily gathered through public data and information provided by individual corporations
- Compares corporate practices relative to an index, S&P or Russell, as well as the relative industry group. Scores expressed as a percentile, 0-100
- Intended to evaluate quality of a corporation's governance structure and practices and its impact on financial performance
- Ratings comprised of eight core categories broken down into 63 specific criteria
- Criteria grouped into four weighted significant subject areas: under the CGQ; Board 40%, Audit 10%, Anti-takeover 20%, Compensation 30%

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Risk Metrics (continued)

Following CGQ criteria are the most heavily weighted :

- Whether the audit committee consists entirely of independent outside directors
- The rate at which stock options and other equity compensation are issued (i.e., how quickly a company "burns" through its stock options)
- Whether all audit committee members are "financial experts," based on the SEC's definition
- Whether the board of directors is composed of more than 90 percent independent outside directors
- Whether the board of directors has only one non-independent director
- Whether the board members are required to own stock in the company
- Whether the board of directors is composed of between 75 and 90 percent independent outside directors - and
- Whether the law of the state of incorporation does not contain anti-takeover provisions

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Risk Metrics (continued)

- Relies on companies to participate in the process and make corrections. Go to www.isscgq.com – and enter information
- Information not taken it into account unless it is on a web site, in a SEC filing or otherwise in the public domain
- Once a company gets rated, Risk Metrics will update the rating on a 120 day cycle
- The following sets for Risk Metrics' 63 data points in the right categories:

Risk Metrics (continued)

Board
- Board composition
- Nominating committee
- Compensation committee
- Audit committee
- Governance committee
- Board structure
- Board size
- Changes in board size
- Cumulative voting
- Boards served on – CEO
- Boards served on – Other than CEO
- Former CEOs on Board
- Chairman/CEO separation
- Board guidelines
- Response to shareholder proposals
- Board attendance
- Board vacancies
- Related party transactions – CEO
- Related party transactions – Other than CEO

Audit
- Audit committee
- Audit fees
- Auditor ratification
- Financial expert

Charter & Bylaws
- Poison pill adoption
- Poison pill – shareholder approval
- Poison pill – TIDE provision
- Poison pill – Sunset provision
- Poison pill – Qualified offer clause
- Poison pill – Trigger
- Vote requirements – Charter/Bylaw amendments
- Vote requirements – Mergers & Business combinations
- Written consent
- Special meetings
- Board amendments
- Capital structure – Dual class
- Capital structure – blank check preferred stock

Standard & Poor's (S&P)

- Emphasizes the principals of fairness, transparency, accountability, and responsibility in its corporate governance scoring methodology

- Develops Corporate Governance Scores (CGS) assessing company's practices and policies and extent to which they serve stakeholder interests

- CGS is assigned on a scale from CGS-10 (highest) to CGS-1 (lowest). Scores from 10 to 1 are also awarded to the four individual components (see next slide) that contribute to the overall CGS

Risk Metrics (continued)

State of Incorporation
- State anti-takeover provisions
- Control share acquisition provision
- Control share cash-out provision
- Freeze-out provision
- Fair price provision
- Stakeholder law
- Poison pill endorsement

Executive & Director Compensation
- Cost of option plans
- Option repricing
- Shareholder approval of option plans
- Compensation committee interlocks
- Director compensation
- Option burn rate
- Performance-based compensation
- Option Expensing

Qualitative Factors
- Board performance reviews
- Individual director performance reviews
- Meetings of outside directors
- CEO succession plan
- Directors resign upon job change
- Outside advisors available to board

Ownership
- Director ownership
- Executive stock ownership guidelines
- Director stock ownership guidelines
- Officer & Director stock ownership
- Mandatory holding period for options
- Mandatory holding periods for restricted stock

Director Education
- ISS-approved Director education.

Standard & Poor's (continued)

Ownership Structure & Influence
- Transparency of ownership
- Concentration and influence of ownership

Financial Transparency & Information Disclosure
- Quality and content of public disclosure
- Timing of, and access to, public disclosure
- Independence and integrity of audit process

Financial Stakeholder Rights & Relations
- Voting and shareholder meeting procedures (regularity, access to information, etc.)
- Ownership and financial rights (dividends, ability to exercise rights, transferability)
- Takeover defenses

Board Structure & Process
- Board structure and composition
- Role and effectiveness of Board
- Role and independence of outside directors
- Director and executive compensation, evaluation, and succession policies

GovernanceMetrics International (GMI)

- Rates companies based on their inclusion in a market index such as the Russell 1000 or S&P 500 Index
- Includes a summary of the company's overall governance profile and commentary on each of the six research categories evaluated by GMI
- Categories include: Board Accountability, Financial Disclosure and Internal Controls, Shareholder Rights, Remuneration, Market for Control, and l Corporate Behavior and CSR Risk issues
- Scores are on a scale of 1-10, with 10 being the highest
- 600 data points across the six categories - ratings are relative to a home market and a global market
- Companies can review this data every six months, as GMI re-rates every six months

The Corporate Library

- Compiles "Board Effectiveness Rating" based on eight factors, each scored on a scale of "A" to "F", compared to a fixed baseline (the baseline could be a "C") instead of peers
- Acknowledges that ratings do not always "track well" with more common benchmark ratings
- Bright-line tests for excessive executive compensation (although adjusted for market-cap), over-committed directors and overage directors
- Categorizes as "problem directors" those who have served on governance or compensation committee of other boards that have had problems
- Also compiles "Core Best Practices Benchmark" which is not factored into Rating but measures general governance practices

Moody's Investor Services

- Issues Corporate Governance Assessments (CGAs)
  - Qualitative report, no scores or comparisons with peers; updated each year or more frequently
  - Designed to inform Moody's analysts and credit rating committees; factored into debt ratings
  - Process involves review of internal company documents and interviews with executives and directors
  - Company may be asked for comments on draft report, to ensure accuracy of data
  - Report identifies "key positive attributes" and "key areas of concern"
  - Moody's perspective is as a creditor, rather than investor (e.g., less concerned about anti-takeover provisions)

Governance Ratings - Things to Consider

- Independent?
- Do the ratings work?
  - Two recent studies:
    - "Rating the Ratings: How Good Are Commercial Governance Ratings?": Stanford Study
    - "The Promise and Peril of Corporate Governance Indices": Law Working Paper Series of the European Corporate Governance Institute Study (ECGI)

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Governance Ratings - Things to Consider

- Stanford Study Conclusions:
  - Governance ratings have either limited or no success in predicting firm performance
  - The exercise of taking steps to increase one's governance ranking may well have no economic impact.

- European Corporate Governance Inst. Study
  - ". . . There is no consistent relation between governance indices and measures of corporate performance. . . There is no one 'best' measure of corporate governance: the most effective governance institution appears to depend on context, and on firms' specific circumstances."

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Small or Private Company Perspective

- Mining for Best Practices
  - Ratings Criteria
  - Baldrige, QNM and other voluntary programs
  - Peer group and best-in-class proxy statements and corporate governance reports
- Stakeholder Inputs
- Design Considerations
  - Scale and Culture
  - Written policies and procedures
- Strategic considerations
  - Where is the company going in 5 – 10 years?

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Governance Ratings - Things to Consider

- Shareholder Activism
- Bad Press
- "Peer Pressure"

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Medium Company Perspective

- Reviews CGQ with Governance Committee annually
- CGQ not a basis for changes in charter documents/ practices
- Adopts Risk Metrics positions when deemed appropriate (formal Director stock ownership requirement, e.g.)
- Substantial fluctuations in CGQ noticed by me and who else?

Medium Company Perspective

CGQ	Number of comments*
2005- 68	0
2006- 85	0
2007- 95	0
2008- 76	0

*Includes shareholders, investors, analysts, regulators, media, etc.

Large Company Perspective

- Awareness, not Obsession
  - Review CGQ other ratings with Governance Committee
  - Analyze Reasons for Ratings
- Benchmark to "peers," not Rating Agency Reports/Ratings
- What are the Company's Goals?
- Communication with Institutional Shareholders

Rating the Ratings: How Good Are Commercial Governance Ratings?

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Rating the Ratings: How Good Are Commercial Governance Ratings?

Abstract

Proxy advisory and corporate governance rating firms play an increasingly important role in U.S. public markets. Proxy advisory firms provide voting recommendations to shareholders on proxy proposals and sometimes take an active role persuading management to change governance arrangements. Corporate governance rating firms provide indices to evaluate the effectiveness of a firm's governance and claim to be able to predict future performance, risk, and undesirable outcomes such as accounting restatements and shareholder litigation. We examine these claims for the commercial corporate governance ratings produced for 2005 by Audit Integrity, RiskMetrics (previously Institutional Shareholder Services), GovernanceMetrics International, and The Corporate Library. Our results indicate that the level of predictive validity for these ratings are well below the threshold necessary to support the bold claims made for them by these commercial firms. Moreover, we find no relation between the governance ratings provided by RiskMetrics with either their voting recommendations or the actual votes by shareholders on proxy proposals.

Rating the Ratings: How Good Are Commercial Governance Ratings?

1. Introduction

Spurred in part by the spectacular collapse of Enron and the revelations of financial fraud at Adelphia and WorldCom, corporate governance advisory firms have grown rapidly in recent years and now play an increasingly important role in public markets. Governance advisory firms, such as RiskMetrics' Institutional Shareholder Services (ISS), GovernanceMetrics International (GMI), and The Corporate Library (TCL) provide shareholders and companies with advice and data on a wide range of governance issues. These firms offer different services and business models, but each evaluates the governance quality of public firms for use by investors, regulators, the financial press and other interested parties. ISS claims that its ratings "measure the strengths, deficiencies and overall quality of a company's corporate governance practices and board of directors." TCL says its ratings "measure the true impact of a particular board's effectiveness on sustainable shareholder value."

The largest commercial governance advisor and rater, Institutional Shareholder Services (ISS), claims over 1,700 institutional clients managing $26 trillion in assets, including 24 of the top 25 mutual funds, 25 of the top 25 asset managers and 17 of the top 25 public pension funds. Sold for $40 million in 2002, ISS was sold again only 5 years later for an estimated $550 million to RiskMetrics, a firm that has since gone public. Governance Metrics International (GMI) advises clients managing $15 trillion. These governance ratings also serve as the basis for tradable indices created by ISS/FTSE and S&P/Glass Lewis.

If these ratings identify good corporate governance characteristics that lead to desirable outcomes, shareholders may earn superior risk-adjusted returns and make better decisions about monitoring managers. Governance firms sometimes make this claim explicit. ISS claims that its

ratings "identify the worst corporate offenders"[1] and that "[t]here is no doubt that [its] ratings could have helped some investment managers avoid the gigantic losses experienced during the corporate scandal era defined by meltdowns at Enron, Global Crossing and WorldCom."[2] Similarly, TCL says its approach "led to our successfully identifying the Enron, WorldCom, Global Crossing, HealthSouth, Kmart, Warnaco and DPL boards as likely to encounter problems well BEFORE those firms imploded, even while most other ratings systems awarded those boards generally high marks."[3] GMI's "premise is simple: companies that focus on corporate governance and transparency will, over time, generate superior returns and economic performance and lower their cost of capital. The opposite is also true: companies weak in corporate governance and transparency represent increased investment risks and result in a higher cost of capital."[4]

If (somewhat bold) claims of the rating firms can be supported by rigorous empirical analysis, these governance rating organizations are providing valuable information to the stakeholders of the firms. However, if the predictive validity of these ratings cannot be established, it is not clear whether boards of directors and shareholders should be concerned about the reports of commercial corporate governance rating firms. Evidence about how these ratings perform in predicting future accounting problems or firm performance has been scarce and usually, when available, sponsored by the commercial companies themselves. The purpose of this paper is to examine the ratings produced by four leading corporate governance rating firms and present some of the first independent evidence on the association between these ratings and future firm performance and undesirable outcomes such as accounting restatements and shareholder litigation.

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[1] Institutional Shareholder Services, Solutions Overview. www.issproxy.com/pdf/cgq.pdf
[2] ISS website: www.riskmetrics.com/issgovernance/esg/cgq.html
[3] TCL website: http://www.thecorporatelibrary.com/Products-and-Services/board-effectiveness-ratings.html.
[4] TCL website.

We find surprisingly little cross-sectional correlation among the ratings we examine: *AGR* (Audit Integrity), *CGQ* (RiskMetrics/ISS), *GMI*, and *TCL_RATING* (TCL). These results suggest that either the ratings are measuring very different corporate governance constructs and/or there is a high degree of measurement error (i.e., the scores are not reliable) in the rating processes across firms. With respect to future corporate outcomes, *AGR*, *GMI*, and *TCL_RATING* have a very modest ability to predict accounting restatements and *AGR*, and *GMI* have a very modest ability to predict class-action lawsuits. In terms of future performance, *AGR* (and to a lesser extent *TCL_RATING*) has a positive relation with future operating performance, *TCL_RATING* has a positive relation with future Tobin's Q, and *AGR* (and to a lesser extent *TCL_RATING*) has a positive relation to future alpha (excess stock price return). One especially interesting result is that *CGQ* (perhaps the most visible governance rating) exhibits virtually no predictive validity. However, the level of predictive validity even for the best ratings is well below the threshold necessary to support the bold claims by the corporate governance rating firms.

Finally, in our interviews with boards of directors, we find that board members believe that these ratings are an influential and important input into the recommendations made to shareholders concerning proxy statement proposals. By some accounts, ISS and other recommendations can "sway" up to 20% of the shareholder vote (Bethel and Gillan, 2002). However, we find virtually no evidence that ISS ratings affect either their proxy proposal recommendations made by ISS or the actual shareholder voting results. Anecdotal evidence suggests that managers, under pressure from the ratings firms or on their own initiative, change firm practices in order to increase their ratings. In a recent survey, public firm directors asked what groups influenced their board the most, listed ISS third, behind institutional investors and analysts, and ahead of activist hedge funds or shareholder plaintiffs. These same directors also listed a low governance rating as a red flag that they use to step up their monitoring efforts, falling just behind the firm missing analysts' estimates in importance (Corporate Board

Member, 2007). Thus, there seems to be a serious disconnect between the actual predictive validity of the ratings, what board members believe about the ratings, whether the ratings are used internally by ISS to develop voting recommendations, and the impact of the rating on actual voting outcomes.

The remainder of the paper is as follows. Section 2 reviews prior research on corporate governance ratings and commercial corporate governance advisory firms. Section 3 reviews the commercial governance ratings examined in this paper. Section 4 provides descriptive statistics for our ratings data. Section 5 examines whether the ratings are useful in predicting future firm performance or outcomes of interest to shareholders. Section 6 examines the relation between the CGQ index and proxy recommendations by ISS and actual shareholder voting on proxy proposals. A summary of the study and concluding remarks are presented in Section 7.

2. Prior Research

There is a vast empirical literature examining the relation between selected corporate governance choices and firm decisions and performance. For example, Morck et al. (1988) consider managerial ownership, Daines and Klausner (2001) examine takeover defenses, Fich and Shivdasani (2006) analyze the consequences of busy boards, Coles et al. (2008) consider board size, and Larcker et al. (2007) examine a variety of board and ownership variables and various firm outcomes. The results of this literature are very mixed in terms of statistical significance and the sign of the relation between corporate governance and firm performance.

More recently, academic researchers have attempted to combine these complex individual elements into a single governance metric or rating that presumably reflects the overall quality of a firm's governance. La Porta et al. (1998) create an index of shareholder protections around the world and find that it correlates with economic growth and market capitalization. Gompers et al. (2003) create the G-score composed of mostly anti-takeover items and find that better governed firms exhibit

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superior future shareholder returns. Although these academic indices have generated considerable research on the relationship between overall governance and firm performance, the validity of these indices is still an open question. For example, Core, Guay and Rusticus (2006) report evidence that suggests that G-score is not related to superior firm performance. Bhagat, Bolton and Romano (2007) provide an excellent review of the theoretical and empirical issues associated with the academic indices.

Despite the extensive research on corporate governance indices, the governance ratings generated by commercial firms has received very little scrutiny. There are several reasons to suspect that commercial ratings provide reliable and valid measures for the construct of corporate governance. First, firms selling ratings appear to be a commercial and market success, which at least suggests the possibility that the ratings are useful to their customers. Second, academic governance indices are generally calculated by simply counting up and summing the number of "good" and/or "bad" governance mechanisms in each firm. This naive counting has the effect of equally weighting governance indicators that likely have differential levels of importance and ignoring the possibility that some provisions may be substitutes or complements (e.g., Larcker et al., 2007). In contrast, commercial rankings seem to use proprietary, quantitative algorithms that presumably weight governance mechanisms according to their relationship to special research knowledge about how the rating relates to firm performance. Third, academic indices are usually expressed as absolute measures of the quality of a firm's governance, whereas commercial indices are typically expressed in relative terms with each firm rated relative to industry or size peers. Fourth, commercial rating algorithms also explicitly change each year to "take into account market trends," whereas most academic ratings tend to be time-invariant computations. Finally, academic governance indices have generally relied on a single, relatively limited data source such as the IRRC data (which are heavily focused on takeover

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defenses), whereas commercial firms seem to employ much larger, richer databases from multiple data sources.

A small number of prior studies have examined ISS ratings or their inputs. Brown and Caylor (2004) report univariate results for one year suggesting that high CGQ scores were associated with higher current stock returns, higher accounting returns, lower volatility, and higher dividends. However, this analysis is backward-looking and provides no evidence on the ability of CGQ to predict firm outcomes. Brown and Caylor (2005) examine the relationship between Tobin's Q and an index created from 51 governance variables collected by ISS (and identified as important elements of ISS's rating). Their index is simply the sum of a variety of indicator variables ISS considers consistent with good governance. They find that this index is significantly related to contemporaneous Tobin's Q for 2002, but do not report findings for the CGQ rating. Aggarwal and Williamson (2006) use ISS data to examine the relationship between firm value and 64 governance-related inputs to the ratings, but again do not examine the primary CGQ rating. Finally, Koehn and Ueng (2005) examine a sample of 106 large U.S. firms and find no statistically significant relationship between the CGQ scores and Audit Integrity's measure of earnings quality.

Ashbaugh-Skaife and Lafond (2006) examine whether GMI's governance ratings are related to cost of equity capital in research sponsored by GMI. In an executive summary of their findings, the authors report that higher GMI governance ratings were associated with lower cost of equity capital in 2004 and conclude that "GMI ratings are valid assessments of the strength (or weakness) of U.S and non-U.S. firms' governance." However, they do not report whether current ratings predict future cost of capital. Similarly, Derwall and Verwijmeren (2007) find that GMI governance ratings for 2005 have a contemporaneous negative association with cost of equity capital and firm-specific and systematic risk.

Finally, Bhagat, Bolton and Romano (2007) examine several ratings from TCL using multivariate analysis and simultaneous equations and report mixed evidence about its ability to predict future operating performance and share price appreciation. To our knowledge there is no third-party research on Audit Integrity's AGR.

There have been very few studies regarding the predictive validity of commercial corporate governance ratings. The available research studies are generally assess whether the ratings are correlated with past firm outcomes (i.e., they are backward-looking) and do not examine the predictability of the ratings.   Moreover, to our knowledge, a common comparative analysis for the four commercial governance ratings has not been conducted.

3. Commercial Corporate Governance Ratings

In this study, we evaluate governance ratings from three primary corporate governance rating firms: ISS's Corporate Governance Quotient (CGQ), GovernanceMetrics International (GMI), and The Corporate Library's TCL Rating. As we describe below, these ratings differ in terms of focus, computational method, and sample coverage, but each attempts to evaluate the corporate governance of public firms. We also examine the rankings produced by Audit Integrity (AGR). These rankings are different in that they focus primarily on accounting and financial statement risk, but we include these rankings for comparison.

3.1 Institutional Shareholder Services CGQ ratings

The Corporate Governance Quotient (CGQ) is produced by Institutional Shareholder Services (ISS), a division of RiskMetrics. The rating "evaluates the strengths, deficiencies and overall quality of

a company's corporate governance practices and board of directors" and "is designed on the premise that good corporate governance ultimately results in increased shareholder value."[5]

ISS ratings are less reliant on financial ratios than Audit Integrity and focus more on more structural variables taken from public filings and company surveys. They gather data on eight categories: 1) board of directors (composition, independence), 2) audit, 3) charter and bylaw provisions, 4) anti-takeover provisions, 5) executive and director compensation, 6) progressive practices, 7) ownership, and 8) director education.

ISS states that they conduct "4,000+" statistical tests to examine the links between governance variables and 16 measures of risk and performance. The result of "this exhaustive study" is a single model of governance quality (CGQ) that includes some 64 variables weighted according to their correlation with firm risk and prior performance.[6] The ratings are then back-tested and calculated for more than 9,000 companies. In addition, ISS states that it changes the ratings model and weights over time to "better reflect current market trends in corporate governance" and to align with ISS policies.[7]

ISS reports two main ratings for each firm. They report the firm's standing within its own industry group (as defined using the SIC codes). We refer to this rating as *CGQ* and focus on this score. They also report the firm's percentile within its index (e.g. S&P 500 for Microsoft), which we refer to as *CGQ_INDEX*. ISS also produces four sub-scores concentrating on specific areas: *CGQ AUDIT* (ranking the quality of the audit review), *CGQ_BOARD* (ranking the firm's board of directors), *CGQ_COMP* (ranking the firm's director compensation and ownership), and *CGQ_TKOVER* (ranking the firm's level of takeover defense). These sub-scores are expressed as quintiles, where 5 indicate a company is in the top quintile relative to a relevant index and industry group.

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[5] Institutional Shareholder Services. 2003. ISS Corporate Governance: Best Practices User Guide & Glossary, Revision 2.4, Wednesday, October 8, 2003.
[6] http://www.isscgq.com/cgqratings.htm
[7] CGQ Corporate Governance Fact Sheet – November 3, 2006.

ISS's website claims its ratings are a "reliable tool for identifying portfolio risk related to governance and leveraging governance to drive increased shareholder value" and emphasizes claims of a "very strong relationship between governance and firm value, using CGQ data."

3.2 GovernanceMetrics International's GMI ratings[8]

GMI was "founded on the premise that the quality of corporate governance can add significantly to the risk-reward profile of credit and investment portfolios."[9] GMI collects data on several hundred governance mechanisms (ranging from compensation to takeover defenses and board membership), as well as the firm's compliance with securities regulations, stock exchange listing requirements and various corporate governance codes and principles. In all, it collects "hundreds of metrics structured in a manner that can only produce yes, no or not disclosed answers." GMI develops a scoring model that examines each metric, weights it "according to investor interest" and then calculates a rating on a scale of 1.0 (lowest) to 10.0 (highest). The GMI scoring algorithm rewards (or penalizes) "outliers" and ranks each firm relative to the other companies in the GMI sample. The *GMI* ratings are calculated for over 4,100 companies.

GMI says its "scoring algorithm has also been tested and validated by outside statistical experts and is patent pending." Its materials tout the fact that "companies that emphasize corporate governance and transparency will, over time, generate superior returns and economic performance and lower their cost of capital" suggesting that firms with high *GMI* scores will "generate superior returns."

3.3 The Corporate Library's TCL ratings

Where the other ratings are the product of proprietary quantitative analysis, The Corporate Library ratings reflect subjective judgment and expertise. TCL analysts avoid data checklists and rely instead on their own experience and private assessment of a firm's governance quality. TCL analysts

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[8] This sub-section was adapted from material found at: http://www.gmiratings.com/, accessed February 9, 2008.
[9] Sept. 2006, Governance and Performance: Recent Evidence GMI

review four specific areas (the company's board and succession planning, CEO compensation practices, takeover defenses, and board-level accounting concerns) and then assign each firm a "grade" (*TCL_RATING*) from A to F. A- and B-rated companies do not exhibit significant risk in any of the four basic categories; C-rated companies exhibit risk in no more than one category; D-rated companies in two or more categories; and F-rated companies were either bankrupt, delisted from an exchange, or described as companies "where management has achieved effective control over the company…and conducts its business with flagrant disregard for the interest of any minority public shareholders." The analysts focus on "'red flag' indicators of board ineffectiveness and corporate mismanagement, supported by in-depth analysis and commentary by our senior research associates and analysts."

According to their marketing material, TCL's ratings "have been proven to predict losses in shareholder value and the occurrence of securities class action lawsuits"[10] and "have been tested against actual investment returns."[11]

3.4 Audit Integrity's AGR ratings[12]

Audit Integrity examines 200 accounting and governance metrics and 3,500 variables designed to produce an *Accounting and Governance Risk* (AGR) rating that identifies "fraudulent patterns of behavior." The goal is to produce a ranking that provides "an assessment of financial statement risk – the risk that financial statements do not accurately reflect a company's true financial condition due to fraud or misrepresentation." In contrast to the three governance rankings described above, the AGR

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[10]   http://www.thecorporatelibrary.com/UserFiles/Board_Analyst0907(1).pdf, accessed February 2, 2008.
[11]   http://www.thecorporatelibrary.com/info.php?id=53, accessed February 2, 2008.
[12]   This section is a summary of the information provided by Audit Integrity consisting of: (http://www.auditintegrity.com/documents/Audit_Integrity_Summary_Corp.pdf); Audit Integrity white paper, The Audit Integrity AGR Model: Measuring Accounting and Governance Risks in Public Companies (June 27, 2005), available at http://www.auditintegrity.com/documents/Audit_Integrity_AGR_White_Paper.pdf; The Audit Integrity Multi-Factor Restatement Model: A Leading Indicator of Financial Restatement (April 11, 2006), available at http://www.auditintegrity.com/documents/Audit_Integrity_Restatement_White_Paper.pdf

ranking is primarily focused on accounting practices. However, we therefore examine this ranking as well, in part because the ranking also includes some governance measures.

AGR scores range from 0 to 100, corresponding to "Very Aggressive" (approximately 10% of all firms) to "Conservative" (approximately 15% of all firms). The ratings are objective and mechanical in that they are produced by statistical examination of financial data (such as changes and trends in revenue recognition variables) "without preconceived bias as to what defines fraud." AGR scores are calculated for over 9,000 publicly traded companies.

Audit Integrity claims that its measure has been verified in "study after study" and that high-risk firms are more likely to be sued, to restate financials, to suffer large drops in share value, and earn lower returns.[13] Its web site claims that its ratings offer users the ability to "achieve excess returns," "avoid companies at a high risk of litigation" and "a great deal of predictive power concerning future corporate problems."

4. Governance Ratings: Data and Descriptive Statistics

Corporate governance ratings were compiled for U.S. firms from each of the four commercial rating services from a variety of websites and research services. The time period of our sample covers the period from late 2005 through to early 2007. However, most of our analysis focuses on the ratings available on December 31, 2005. Our sample consists of 2005 *AGR* for 6,714 firms, *CGQ* for 5,059 firms, *GMI* for 1,565 firms, and *TCL_RATING* for 1,906 firms (Table 1, Panel A). These sample sizes are consistent with the reported coverage universe for U.S. firms for these rating firms. Our sample also spans many economic sectors and closely mimics the industry distribution in Compustat (Table 1, Panel C).

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[13]   They are careful to note however that "behavior that matches past patterns of fraud is not a guarantee of current fraudulent or misleading behavior."

As discussed in Section 2, the distribution of rating differs substantially for each commercial vendor (see Figure 1). Since *CGQ* is expressed as a percentile, it is not surprising that it is approximately uniform between 0 and 100. However, *AGR* and *TCL_RATING* have noticeable negative skewness, with many firms clustering at relatively high scores and a smaller number of firms forming a long tail to the left. The GMI scores are relatively symmetric. Clearly, *AGR*, *CGQ* and *TCL_RATING* are not directly comparable even though each takes values between 0 and 100.

The CGQ sub-scores are approximately quintiles. However, four of the five the TCL sub-scores are measured on a three-point scale (1 = "very high concern", 2 = "high concern" and 3 = "low concern"). The descriptive statistics (Table 1, Panel A) reveal differences in the level of concern that TCL has with different aspects of corporate governance. For example, 13.5% of firms are rated as of very high concern with regard to takeover defenses, but only 4.3% when considering board composition. The final sub-score, *TCL_BP* is provided by TCL "to approximate the compliance-based 'best practices' checklist approach to evaluating governance practices… [and] is not factored into the TCL Rating, which is focused on board effectiveness, value, and risk rather than structural indicators."[14] Most TCL firms seem to cluster in the middle three scores on the A, B, C, D, F scale.[15]

If, as seems to be often posited, there is an agreed upon definition of "good governance" and each of these commercial measures seeks to measure it, then we would expect these measures to be highly correlated. However, as illustrated in Table 1 (Panel B), these four primary ratings are close to being uncorrelated, with the exception of *GMI* and *CGQ*, which have a Pearson (Spearman) correlation of .484 (.480). The Pearson (Spearman) correlations among the remaining five pairs range from -.009 to .076 (-.020 to .063). *AGR* in particular seems uncorrelated with most of the other ratings in our dataset. The primary CGQ and TCL ratings are significantly positively correlated with each of the sub-

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[14] Quote is taken from a sample report found on TCL's website.
[15] In our analysis, we code "A" as 5, "B" as 4, "C" as 3, "D" as 2, and "F" as 1; there is no "E" rating.

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scores supplied by the respective rating firms (which would be expected if the sub-scores are combined into the overall score). *TCL_BP* is also highly correlated with *CGQ* and *GMI* (Spearman correlations of .446 and .322 respectively), consistent with these sharing common inputs.

As might be expected, the ratings are positively correlated over time. Prior studies (e.g. Gompers et al., 2003) have found that governance variables are quite stable over time. For the overall scores, the correlation between 2005 and 2006 ratings range from 0.558 for *AGR* to 0.847 for *CGQ*. However, the CGQ sub-scores exhibit lower correlations that range from 0.205 to 0.681 and the TCL sub-score correlation range from 0.423 to 0.937. Given the general persistence of takeover defenses, the correlation of 0.937 for *TCL_TKOVER* is an expected result. However, it is surprising to observe a correlation of only 0.247 for *CGQ_TKOVER*. If firm takeover defenses are in fact relatively stable, then the variation in the CGQ takeover sub-score may reflect large changes in the model that is used to calculate the score from year to year. ISS does change its model periodically to "reflect current market trends." Changes could also reflect a policy of changing the model as needed to assure that the rating correlates with past performance.[16]

5. Predictive Ability of Governance Ratings

We evaluate the ratings by examining their ability to predict five important outcomes. These outcome variables are selected because either one or more of the rating firms claims that the ratings

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[16] One question that has not been examined in prior research concerns the selection of the variables and weightings used to develop the commercial scores. In order to gain preliminary insight into this issue, the overall scores were regressed on a wide variety of governance variables collected from Equilar Inc., FactSet/SharkRepellent, Corporate Board Member Magazine, and Audit Analytics. We focused on variables that the firms have identified as in their scoring model, of which ISS's CGQ has been the most discussed (e.g., Aggrawal and Williamson, 2006). This allows us to identify the inputs with some precision. We also supplement the identified inputs with a small number of variables identified in prior research (e.g., variables related to "old" or "busy" directors). The R-squared values from OLS regressions of the ratings on more than 90 governance variables are 4.7% (*AGR*), 40.8% (*GMI*), 21.7% (*TCL_RATING*) and 48.8% (*CGQ*). Given differences in the structure of the ratings, we also examine regression via additivity and variance stabilization (AVAS). AVAS, developed by Tibshirani (1988), is a nonparametric regression method involving the estimation of transformation functions for the variables. Like the ACE procedure (Breiman and Friedman 1985), AVAS uses iterated smoothing to find the "best" transformation of the variables. These regressions provide very similar results.

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will predict the outcome or because prior literature has suggested a relationship between the the outcome and quality of corporate governance. The first two outcomes, accounting restatements and class action lawsuits, are relatively rare "bad" outcomes that one or more of the ratings should be expected to predict. The remaining three outcomes are traditional measures of corporate performance, namely accounting operating performance, Tobin's Q and excess stock returns (or alpha).

Our analysis is conducted both with and without additional control variables (e.g., Larcker et al, 2007). In assessing the impact of governance quality on economic outcomes it may make sense to exclude the control variables to the extent that governance quality affects the outcomes through its effect on the controls. For example, governance quality may affect the likelihood of restatements both directly and indirectly through its effect on a firm's book-to-market ratio. However, including the book-to-market ratio as a control will cause us to detect only the direct effect of governance quality on the likelihood of accounting restatements. Similarly, to the extent that governance quality is persistent over time, it may affect operating performance in any given period both directly and indirectly through impact on prior period's operating performance that persists over time. Thus, it is unclear whether the analysis should incorporate these control variables (a "conditional" analysis) or exclude the controls (an "unconditional" analysis).

In addition, we aim not only to understand the relationships between governance quality (as measured by the ratings) and various economic outcomes, but also to assess the value of the ratings as predictive tools in their own right. For example, it is unclear whether the governance ratings already capture the effect of the control variables (in which case, "unconditional" analysis excluding these controls is appropriate) or the ratings are constructed from inputs distinct from the control variables (in which case, "conditional" analysis with the effects of the control variables included is appropriate). As such, we perform each of our analyses of the outcome variable both with and without control variables

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to provide a more comprehensive analysis of the relationship between governance quality and economic outcomes.

In examining the predictive power of the governance ratings, we focus on ratings available as of December 31, 2005, as this is the earliest point at which we have a sizable cross-section of ratings across the four rating firms. Our basic approach is to estimate a regression for each outcome variable on the ratings and perhaps a set of controls. To facilitate the interpretation of the regression coefficients across ratings, we standardize each of the ratings to have zero mean and unit variance.

5.1 Accounting Restatements

It is often claimed in both the academic literature that accounting restatements are either evidence of, or caused by, weak governance. A number of papers predict that accounting restatements will be positively associated with poor governance and find support for this prediction (Farber, 2005; Beasley, 1996; Peng and Roell, 2006; Erickson et al., 2006). However, other papers find little evidence of a relationship between accounting restatements and governance (Larcker et al., 2007). We expect that if the ratings provide predictive power with regard to restatements, higher ratings will be associated with fewer restatements.[17]

We obtain data on accounting restatements from Glass-Lewis & Co., which maintains a comprehensive database on restatement information obtained from SEC filings, press releases, and other public data. We focus on the indicator variable *Earnings Restatement*, which takes the value of one for a firm Glass-Lewis & Co. identifies as making one or more accounting restatements that relate to either revenue or expense recognition and affected fiscal years 2004 to 2007. Glass-Lewis identifies 419 such restatements, representing just over 6% of our sample of 6,968 firms across the four ratings.

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[17] While the common assumption of a negative relationship between governance quality and accounting restatements seems intuitively plausible, it is important to note that accounting restatements imply a minimal level of governance in that the mechanisms to detect misstated financial statements must be in place for the restatements to be observed by the researcher.

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For each governance rating, we estimate logistic regressions with *Earnings Restatement* as the dependent variable and either just the governance rating in question (unconditional analysis) or the rating and controls (conditional analysis). Based on the extensive research on restatements, we include the following controls: *Leverage* is calculated as the ratio of book value of debt (Compustat item #9+item #34) to market value of equity (item #25*item #199), *BM*, the book value of common equity (item #60) divided by the market value of common equity (item #25*item #199). *Free Cash Flow* is measured as the difference between operating cash flows (item #308) and average capital expenditures over the prior three years (item #128). *External Financing* is total net external financing from debtholders and shareholders during the fiscal period. *Acquisitions* is cash spent on acquisitions (item #129) divided by market value of common equity. *Log(Market Value)* is the log of market value of common equity. All control variables are measured in the latest fiscal year ending on or prior to September 30, 2005, allowing at least a three month lag prior to the period over which we capture restatements so as to be confident that the controls are observable prior to this period. All controls are winsorized at the 2nd and 98th percentiles by fiscal year.

Table 2 presents the results of our analysis of future restatements. We focus our discussion on the primary governance ratings, selectively highlighting results using the rating sub-scores that provide additional insight. Two of the four primary ratings (*CGQ* and *TCL_RATING*) are not associated with restatements either conditionally or unconditionally. However, *AGR* and *GMI* exhibit a statistically significantly association with restatements with the expected negative sign: higher governance rating scores are associated with fewer future restatements. These results are robust to inclusion of controls (conditional analysis). For the sub-scores, *TCL_ACCTG*, a component of *TCL_RATING*, is statistically associated with restatements, consistent with notion that this accounting-focused sub-score is somewhat useful in predicting accounting problems. However, there are no statistically significant results for the accounting-focused sub-score *CGQ_AUDIT*. We also find some predictability for *TCL_BP*, which measures the extent to which firms adopt "best practices."

Assessing the economic (or substantive), rather than statistical, significance of the results in Table 2 is problematic in the absence of a structured decision problem and information about the loss function associated with errors in predicting restatements. In order to provide some insight, we examine the ability of the ratings to improve the actual classification of outcomes. We focus on *GMI*, as this rating appears to have the greatest predictive power for restatements in our sample. Of the 1,489 firms for which we have *GMI* ratings and data to calculate our controls, 108 experienced a restatement in our test period and 1,381 did not. We estimate the predicted probability of restatement using the controls alone. Setting a probability cutoff of 0.1, the estimated model classifies 98 firms into the "restate" category (but only 11 actually exhibit a restatement). On the other hand, 97 firms that do restate are incorrectly classified as "not restate". When we include *GMI* as an additional explanatory variable, 28 firms are correctly classified as restating firms, an apparently significant improvement over the model with controls alone. However, much of this improvement comes at the cost of incorrectly classifying non-restating firms (the model with *GMI* misclassifies 212 such firms which is much higher than the 87 firms with controls alone). In fact, the percent correctly classified decreases from 87.64% to 80.39% with the inclusion of *GMI*. However, it is important to note that this statistic implies that investors are equally concerned about both kinds of classification errors, whereas they may care more about reducing false negatives (i.e. owning stock in a firm that later experienced a restatement) than the false positives (missing out on firms that were predicted to have a restatement, but didn't). Note that an algorithm that simply classified all firms as "not restate" would correctly classify 1381/1489=92.68% of firms).

We examine the sensitivity of our results to a number of variations. To allow for the possibility that governance only affects outcomes at the extremes (either very poor or very good governance), we

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run our analysis with the standardized governance ratings replaced by two indicator variables

representing membership of the top or bottom decile for each rating (if the rating does not allow for

partitioning into deciles, we use the top and bottom category instead). We then evaluate the statistical

significance of the difference between these indicators. Statistically significant differences from this

analysis appear for precisely the same ratings as in our primary analysis and in the same direction in

each case. Given the differences in the sample size and composition across the ratings, we also

perform analysis using a common sample across the ratings (there are 1,523 firms with ratings from

each of the four rating firms and 1,433 meet the data requirements for our conditional analysis). Our

inferences are identical in this case with one exception: *CGQ* becomes statistically significant in the

predicted direction in both the unconditional and conditional analyses. We also allow for the

possibility that many of the restatements in our sample are "innocuous" by including only those

restatements associated with a negative return of 3% or more over either a 3- or 5-day window around

the announcement of the restatement. Our results for this subset of observations are very similar in to

those reported in Table 2. Finally, the inclusion of industry fixed effects has virtually no impact on our

inferences.

5.2 Class-action Lawsuits

The second outcome we consider is whether the firm was the subject of a class action lawsuit.

Woodruff-Sawyer identifies 191 class action lawsuits over the two years after December 31, 2005,

representing 3.54% of our sample.[18] For the affected firms, we set the variable *Lawsuit* equal to one

and set the value equal to zero for the remaining firms. We again perform logistic regressions with

Lawsuit as the dependent variable and either the governance rating in question (unconditional analysis)

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[18] We do not find any statistical difference in the overall frequency of lawsuits between the overall sample and the *AGR*
     and *CGQ_INDUSTRY* samples, but we do find a higher rate of lawsuits in the *GMI* (5.46%) and *TCL_RATING* (5.25%)
     samples.

or the rating and controls (conditional analysis). We follow Rogers and Stocken (2005) in our list of

controls: *Size* (log of market value of equity), *Turnover* (average daily turnover divided by average

shares outstanding), *Beta* (the slope coefficient from a regression of daily returns on the CRSP value-

weighted index), *Returns* (buy-and-hold returns), *Std Dev(Returns)* (standard deviation of daily

returns), *Skewness(Returns)* (skewness of daily returns), and *Min(Returns)* (minimum value of daily

returns). All controls are obtained from CRSP and measured over the year ending December 31, 2005.

Table 3 presents the results of our analysis. Higher *AGR* scores are statistically significantly

associated with fewer future class-action lawsuits, both unconditionally and conditionally. Higher

CGQ (*TCL_RATING*) scores are associated with *more* (fewer) lawsuits unconditionally, but this

association disappears when the controls are included. *GMI* is not statistically associated with lawsuits

unless the controls are included. The sub-scores suggest that *CGQ_BOARD* underlies the relationship

between *CGQ* and lawsuits and provides weak evidence consistent with the compensation sub-scores

(*CGQ_COMP* and *TCL_COMP*) being associated with future lawsuits.

To assess the economic significance of our findings, we use a similar approach to that used for

restatements. In this case, we focus on *AGR*, as this seems to have the greatest power to predict

lawsuits in our sample (restricted to a common sample, the pseudo R-squared is higher with *AGR* in

place of *GMI*). Of the 5,368 firms with available data, 191 experience class-action lawsuits. With a

probability cutoff of 0.1, including *AGR* raises the number of firms with lawsuits that are correctly

classified from 34 to 43, but at the expense of misclassifying 237 (an increase from 209) firms that do

not have lawsuits. The reduction in "percent correctly classified" is from 93.18% to 92.83%. But

again, a naïve model that classified all firms as "no lawsuit" would correctly classify

5125/5463=95.47%. However, if the cost of misclassifying firms experiencing lawsuits is at least four

times as great as that of misclassifying firms with no lawsuits, there is possibly economic benefit from

including *AGR*, as (43-34)*4-(237-209)>0. But it should be recognized that this classification analysis

is within-sample used for estimation and thus likely represents an upper bound on the ability of *AGR* to predict "out-of-sample" observations.[19]

As with the restatement analysis, we examine the effect of using indicator variables for the top and bottom category. Our inferences are broadly the same as above. We find that *GMI* is only marginally significant at the 10% level in the conditional analysis and *TCL_BP* is no longer significant in the conditional analysis. Looking at a common sample, we find that *CGQ* is no longer significant in the unconditional analysis. In the conditional analysis with a common sample, the notable differences are that the statistical significance of *GMI* diminishes (to the 10% level) and *CGQ_AUDIT* appears significant at the 5% level with the predicted sign.

5.3 Future Operating Performance

Following prior research (e.g. Gompers et al., 2003) we assess the ability of governance ratings to predict future operating performance by examining return on assets (ROA), measured as operating income (Compustat item #178) divided by average total assets (item # 6). Larcker et al. (2007) use only *Log (Market Value)* and median industry ROA as controls reflecting a focus on measurement of corporate governance quality. While current ROA seems to be a natural control, Larcker et al. (2007) argue that "to the extent that governance structures are stable over time…the inclusion of current operating performance is likely to remove the impact of governance that we are trying to estimate." We examine industry-adjusted *ROA*, the difference between ROA for a firm and the median ROA for its industry in that fiscal year, using two-digit SIC codes for industry classification. But, given our interest in the governance ratings as both measures of governance quality and as informative signals of future firm performance, we estimate regressions both with and without prior period's industry-adjusted

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[19] The absence of "out-of-sample" analysis is a general critique of most empirical studies linking corporate governance variables or indices to various outcomes. Since the model is both estimated and tested with the same set of data, the explanatory power and predictive validity reported in most studies is the upper bound because this model cannot fit better in another independent sample.

ROA as an additional control. We measure industry adjusted ROA at the end of the fiscal year ending between June 2006 and May 2007, the latest data available on Compustat at the time of this study.

Table 4 presents the results from our analysis. We find that *AGR* is associated with future operating performance. This result is robust to whether lagged ROA is included as a regressor. However, the strength of the relation is greater when lagged *ROA* is omitted, consistent with governance quality being relatively persistent and affecting ROA over multiple periods. For the remaining primary ratings, only *TCL_RATING* has a significant coefficient with the predicted sign and only when lagged *ROA* is excluded. Once lagged *ROA* is included, the coefficient becomes significantly negative.

To assess the economic significance of the coefficient on the ratings, we discuss the shift in predicted lagged *ROA* associated with a one standard deviation shift in the rating. However, we argue that caution should be taken with regard to interpreting these coefficients in a causal fashion, as it is quite plausible that governance quality and operating performance are jointly determined in a manner that confounds any causal interpretation of our regression coefficients. We first note that the 25th, 50th and 75th percentiles for *ROA* for a sample common to the four primary ratings are -1.1%, 1.6% and 7.9% respectively. Shifting up one standard deviation in terms of *AGR* is associated with a 2.6 percentage point increase in *ROA* (using the coefficients in the regression without lagged *ROA*), which while not enough to move a whole quartile, does seem economically significant. The coefficient on AGR when *ROA* is included in the regression is much smaller, but note that the inclusion of lagged *ROA* suggests that the appropriate benchmark is something like the one-year change in *ROA*. Given that the 25th, 50th and 75th percentiles for changes in *ROA* for a sample common to the four primary ratings are -2.9%, 0.4% and 1.0% respectively, so a shift of 0.53 percentage points associated with a one standard deviation shift in *AGR* is not insignificant.

We also conduct the robustness checks described above. Focusing on a common sample of 1,499 firms with controls data and ratings from each of the four firms, we retain the same inferences except that *GMI* and *TCL_BOARD* are no longer significant in the analysis without lagged *ROA* and the CGQ sub-scores are no longer significant in either analysis. Also, the significance of AGR decreases (to 10% level) while that of *TCL_RATING* increases (to the 1% level). Focusing on the top and bottom deciles, we find a few changes: *TCL_RATING* becomes insignificant and none of the CGQ sub-scores is significant in the predicted direction. In the analysis with lagged *ROA*, only *AGR* remains significant in the predicted direction, but with reduced significance (10% level).

5.4 Firm Value

Tobin's Q, typically measured using some variant of the market-to-book ratio, is commonly used as an indicator of firm value in accounting and finance research. However, since market-to-book ratios (or the inverse) are used as proxies for risk factors (Fama and French, 1993), accounting conservatism (Roychowdhury and Watts, 2007), and investment opportunity set or future growth opportunities (Adam and Goyal, 2006), it is unclear whether the market-to-book ratio captures the underlying theoretical construct of "firm value."[20] However, in light of its continued popularity in academic research and the fact that Tobin's Q is explicitly identified by at least one of the rating firms as an outcome variable of interest, we also examine Tobin's Q. We measure *Tobin's Q* as *(TA+MVE-BVE)/TA*, where *TA* is total assets (Compustat item #6), *MVE* is market value of equity (item #199 * item #25) and *BVE* is the book value of equity (item #60). To control for differences associated with industry rather than governance attributes of each firm, we include industry fixed effects in our regressions. As *Tobin's Q* is, like measures of operating performance, highly persistent, we follow the

approach used with operating performance and estimate both regressions with industry fixed effects and the governance variables alone and regressions with these variables and lagged *Tobin's Q* as an additional control. We measure *Tobin's Q* at the end of the fiscal year ending between June 2006 and May 2007, the latest data available on Compustat at the time of this study.

While prior literature using Tobin's Q as a measure sometimes does not trim or winsorize outliers in Tobin's Q itself (e.g., Shin and Stulz, 2000, drop outliers only in the independent variables in regressions with Q as a dependent variable), to deal with outliers, we winsorize *Tobin's Q* and its lagged value at the 2nd and 98th percentiles. As shown in Table 5, without lagged *Tobin's Q*, we find that three of the four primary ratings have statistically significant coefficients, including *AGR* (negative), *CGQ* (unexpected negative) and *TCL_RATING* (positive). After including lagged *Tobin's Q*, *GMI* is statistically significantly positive and *CGQ* is marginally significant (10% level) and positive.[21]

To assess the economic significance of the coefficients, note that the 1,407 firms with ratings from each of the four firms, the mean value of *Tobin's Q* is 1.917 and the 25th, 50th and 75th percentiles are 1.219, 1.587, and 2.209 respectively. Thus, while the coefficients on *TCL_RATING* without lagged *Tobin's Q* (0.081) GMI with lagged *Tobin's Q* (0.040) are not sufficient for a one standard deviation shift in the ratings to be associated with a shift in *Tobin's Q* across a full quartile.

Our fairly inconclusive results with *Tobin's Q* are quite sensitive to model specification. Placing firms in top and bottom deciles by rating, we find that none of the ratings is significantly associated with *Tobin's Q* in the predicted direction. Using a common sample of 1,411 firms (or 1,410 with lagged *Tobin's Q*), only *TCL_RATING* and *TCL_ACCTG* remain significant with the predicted

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[20] At best, the market-to-book ratio captures average Tobin's Q, whereas the variable of interest may be the marginal Tobin's Q. The Q results are reported in order to be consistent with prior literature, but we believe that the more interpretable results are future operating performance and excess stock price returns.

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[21] We examine the impact of winsorization of *Tobin's Q* on our results with the primary ratings by performing analyses without winsorization. Excluding lagged *Tobin's Q*, *CGQ_INDUSTRY* and *TCL_RATING* remain the only significant variables, but *CGQ_INDUSTRY* with an unexpected sign. With lagged *Tobin's Q*, again only *GMI* is significant with the predicted sign.

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sign in the analysis without lagged *Tobin's Q* and *CGQ*, *GMI*, and *CGQ_BOARD*. Overall, we interpret our results as consistent with there being little systematic relationship between *Tobin's Q* and the governance ratings. However, it is unclear whether this result is due to the absence of an underlying relationship between governance and firm value or measurement error in the ratings and/or our measure of firm value.

5.5 Future Stock Returns

Our final outcome variable is excess stock returns, *Alpha*. Specifically, for each firm in our sample, we obtain monthly stock returns (*RET*) from the CRSP files for the months January 2006 through to September 2007, the latest data available at the time of this study. For each firm, we then estimate a regression of these returns on the standard Fama-French monthly factor returns (*Mkt-RF*, *SMB*, *HML*, and *Mom*) obtained from Ken French's website. The estimated intercepts from these regressions form our estimate of *Alpha*. Since this variable represents returns in excess of hypothesized risk factors, we do not include additional controls in our subsequent regressions. As pointed out in prior literature (Gompers et al., 2003; Larcker et al., 2007), if stock prices incorporate rational beliefs about the costs and benefits of alternative governance structures, we should expect no association between excess returns and the governance ratings. Any association is the result of either (i) inefficiency in the pricing of corporate governance, (ii) unexpected, systematic shocks in firm value either caused by or correlated with these measures of corporate governance or (iii) an omitted risk factor that is correlated with the measures of corporate governance. Notwithstanding these arguments, it is frequently argued by the rating firms that the governance ratings will be positively associated with future returns. An alternative argument, though one not made by the rating firms to our knowledge, is that governance quality is associated with lower expected returns (i.e., lower cost of capital), in which case we might expect a negative relationship between governance quality and realized returns.

Table 6 presents the results of our excess returns analysis. Two of the four primary ratings, *AGR* and *TCL_RATING*, have a statistically significant positive association with *Alpha*. The additional excess return associated with a one unit shift in *AGR* (*TCL_RATING*) is 0.29% (0.10%) per month. This is arguably economically significant, but we leave any assessment of the feasibility of implementing trading strategies to capture these apparent excess returns to future research. On the other hand, there is an unexpected statistically significant negative relationship between *CGQ_BOARD* and *Alpha*. Holding aside the issue of measuring statistical significance across multiple regressions, one possibility is that higher scores on *CGQ_BOARD* lead to a lower cost of capital through a mechanism not captured in the Fama-French four-factor model and this produces the negative association we see. However, this prediction seems contrary to any of the claims made by ISS with regard to the CGQ ratings discussed above.

We again examine the sensitivity of our results to the use of indicators for the top and bottom deciles in place of standardized ratings and the use of a common sample across the ratings. In the decile analysis, *TCL_RATING* is no longer statistically significant, but the coefficient on the *AGR* indicator remains both economically and statistically significant. The mean monthly alpha for the top (bottom) decile based on AGR is 0.213% (-0.856%), with the latter (and the difference) being statistically significant at the 1% level. The mean monthly alpha for the remaining 80% of observations is 0.115%, suggesting that the coefficient estimated above is primarily attributable to negative alpha in the lowest decile. With a common sample of 1,500 firms across all ratings, only *AGR* remains statistically significant with a coefficient of 0.22%, slightly below that estimated above and consistent with the results above not being driven by differences in samples across the ratings.[22]

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[22] We also examine (in untabulated analysis) the relationship between changes in governance ratings and future outcomes. We measure the change in ratings over the period from December 31, 2005 to June 30, 2006 and examine outcomes over the period from June 30, 2006 through to the end of 2007 in the case of returns, restatements and class-action lawsuits and

6. CGQ, ISS Recommendations and Shareholder Voting

ISS has the unique position of both supplying a major corporate governance rating (CGQ) and being the dominant player in the market for advice on shareholder voting. In this section, we examine the relationship between CGQ, ISS recommendations, and shareholder voting outcomes. It is reasonable to expect ISS to consider their own recommendations when evaluating proxy proposals for consideration by shareholders and the merits of directors put up for annual election. Additionally, if CGQ provides useful information to shareholders, it seems plausible that CGQ would be associated with the outcome of shareholder votes, either directly or indirectly through its effect on the voting recommendations of ISS.

Table 7 presents the results of our voting analysis for the subset of ratings produced by ISS. Panel A documents an association between CGQ and ISS recommendations, but one that is surprisingly weak. For example, the change in probability that ISS recommends a vote in favor of a proposal is approximately 0.0022, which loosely speaking, suggests that a one standard deviation increase in CGQ (28.50 points) implies a 6.3 percentage point increase in the probability of ISS favoring an proposal. Thus, there is little substantive relation between the CGQ rating and the ISS recommendation. This is a rather odd result given that CGQ is claimed to be a measure of governance quality, but ISS does not seem to use their own measure when developing voting recommendations for shareholds.

Panel B of Table 7 documents the relationship between CGQ and shareholder voting outcomes, where the outcome is defined as the percentage of votes cast "for" a proposal or candidate director. Excluding the ISS recommendation from the analysis, the coefficient on CGQ is actually negative, suggesting that the higher the CGQ rating, the lower the percentage of votes cast in favor of a proposal.

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operating performance for fiscal years ending between June 2006 and May 2007. These results suggest even weaker ability for the ratings to predict future outcomes than that suggested by our primary analysis.

This result also holds when ISS recommendations are included in the analysis.[23] Focusing on votes concerning compensation plans, including stock and option plans, CGQ alone has no statistically significant relation with voting outcomes when ISS recommendations are excluded from the regression, but conditional on ISS recommendations, our results suggest a negative relationship between CGQ ratings and shareholder voting outcomes.

7. Summary and Concluding Remarks

Shareholders, regulators, hedge fund managers, press commentators, board members and policy makers increasingly stress the importance of good governance, arguing that it improves firm performance, shareholder welfare and the health of the public markets. However, defining good governance and distinguishing good governance from bad governance has proved more elusive, especially given the great variety of corporate governance mechanisms (and combinations) employed by firms.

Several commercial firms now offer corporate governance ratings that promise to accurately assess the strength of a company's governance. The providers of the ratings make strong claims regarding the ratings' value in predicting future bad outcomes (such as accounting restatements or shareholder suits) and firm performance. These ratings, often provided by proxy advisors, are also used in formulating recommendations that can be influential in shareholder voting.

We provide the first independent assessment of prominent commercial corporate governance ratings. Prior evidence on individual ratings has generally been backward-looking, raising the distinct possibility that the ratings reflect past firm performance but are unable to predict accounting restatements, litigation, and future performance. We examine the ability of ratings produced by

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[23] Note that the coefficients on the ISS recommendation indicator variable are consistent with prior work, such as Bethel and Gillan (2002). Taken literally, these suggest that an ISS recommendation in favor of a proposal can "sway" more than 22% of the vote.

RiskMetrics (previously Institutional Shareholder Services), GovernanceMetrics International, and The Corporate Library to predict future performance. We find that these governance ratings have either limited or no success in predicting firm performance or other outcomes of interest to shareholders. See Table 8 for a brief summary. Moreover, even when there is a statistical association with future outcomes, the economic or substantive effect seems small. Audit Intergrity's ranking of financial statement risk is a possible exception.

Assuming that our analysis is appropriate, these findings raise several questions. First, should boards of directors go out of their way to raise their company's governance scores? It appears that a simple mechanical exercise in increasing one's governance ranking may well have no economic impact. This is not to say, however, that governance does not matter or that particular mechanisms would not affect firm value. It may be that firms should make governance changes, but the ratings we examine would not be a reliable guide in doing so.

Second, these results raise the question why institutional investors, shareholders, and other parties buy them. Several options seem plausible. First, customers may be wrong about the ratings or mislead by the suggestion that ratings can produce higher returns or "avoid the next Enron." To the degree that this occurs, one possible "consumer protection" policy response would be to require ratings firms to provide additional disclosures about the predictive power of their ratings. Rather than disclosing their ranking's correlation with past performance, they could disclose their success at predicting future outcomes. Although we do not have any direct evidence, it is obviously possible for commercial firms to "adjust" their model and weights such that the resulting scores "explain" past performance, but this type of over-fitting has little hope in predicting future firm outcomes.

A second explanation is that investors buy the ratings simply to obtain the underlying data. The data on firm takeover defenses, CEO compensation, or board membership can be costly to collect for a large sample of firms and the commercial rating firms might be a cost-effective source for these data.

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A third possibility offered for their growing popularity is that institutional shareholders purchase the ratings as protection against future claims that they have invested or voted unwisely and thereby breached their fiduciary duties to their clients.

A final possibility is that we do not have the right model for estimating the impact of firm governance or the right measure of firm performance. Ratings firms may object that, given the right model specification, their ratings are significant and informative. We are open to this possibility and suggest that, to the degree this is true, ratings firms could disclose the "right" model and periodically disclose how well their ratings predict future performance using this "right" model. This type of transparent disclosure would enable investors to evaluate the net benefits produced by their purchase of the ratings. Moreover, this policy would be consistent with the rating companies' public stance about the virtue of transparency that they urge on the firms they rate. As stated on the RiskMetrics/ISS website,

> '[a]s more and more investors, insurers and credit rating agencies recognize the link between corporate governance performance and risk, the more important it is for companies to understand how their corporate governance practices are measured. . . . We believe profoundly that transparency instills trust and, with trust comes confidence and more intelligent decisions.

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Table 1: Summary of Governance Ratings

Panel A: Descriptive Statistics
Latest ratings as of December 31, 2005.

Variable	N	Mean	SD	Min	P25	Median	P75	Max
Primary Ratings								
AGR	6714	63.67	15.18	4.0	54.0	67.0	75.0	88.0
CGQ_INDUSTRY	5059	51.61	28.50	0.4	27.1	52.0	76.2	100.0
GMI	1565	7.08	1.22	2.5	6.5	7.0	8.0	10.0
TCL_RATING	1906	3.22	0.90	1.0	3.0	3.0	4.0	5.0
CGQ Sub-scores								
CGQ_AUDIT	4861	3.46	1.45	1.0	2.0	4.0	5.0	5.0
CGQ_BOARD	4859	3.07	1.36	1.0	2.0	3.0	4.0	5.0
CGQ_COMP	4859	3.13	1.36	1.0	2.0	3.0	4.0	5.0
CGQ_TKOVER	4859	3.17	1.36	1.0	2.0	3.0	4.0	5.0
TCL Sub-scores								
TCL_BP	1890	83.83	8.45	45.0	78.0	85.0	90.0	100.0
TCL_ACCTG	1899	2.66	0.66	1.0	3.0	3.0	3.0	3.0
TCL_BOARD	1897	2.73	0.53	1.0	3.0	3.0	3.0	3.0
TCL_COMP	1894	2.76	0.54	1.0	3.0	3.0	3.0	3.0
TCL_TKOVER	1891	2.62	0.71	1.0	3.0	3.0	3.0	3.0

AGR, *CGQ_INDUSTRY*, *GMI* and *TCL_RATING* are the primary governance ratings of Audit Integrity, ISS, GovernanceMetrics International, and The Corporate Library respectively. AGR, CGQ and GMI ratings are on a 0-100 scale. *TCL_RATING* is converted from an "A" to "F" grade to numerical values 1-5, where "A" equals 5 and "F" equals 1 (no "E"). CGQ sub-scores cover "Audit Review" (*CGQ_AUDIT*), "Board of Directors" (*CGQ_BOARD*), "Executive and Director Compensation and Ownership" (*CGQ_COMP*), and "Takeover Defenses" (*CGQ_TKOVER*). CGQ sub-scores take values 1-5, where 5 is higher quality governance. *TCL_BP* denotes the percentage of certain "best practices" adopted by a company. *TCL_RATING* sub-scores cover "financial compliance" (*TCL_ACCTG*), "board composition" (*TCL_BOARD*), "CEO compensation" (*TCL_COMP*), and "board effectiveness and shareholder friendliness in the area of takeover defenses" (*TCL_TKOVER*). *TCL_RATING* sub-scores take values of "very high concern," "high concern," and "low concern," which are re-coded as 1, 2, and 3 respectively.

Table 1: Summary of Primary Governance Ratings

Panel B: Correlation Matrix, Governance Ratings and Sub-scores
Pearson (Spearman) Correlations are Presented Above (Below) the Diagonal. Numbers in bold represent correlation between 2005 and 2006 ratings for firms in our sample.

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
AGR	(1)	**0.558***	0.005	0.031	0.063*	0.002	0.001	-0.027	-0.018	0.016	0.125*	-0.010	0.056*	-0.019
CGQ	(2)	0.029*	**0.847***	0.480*	0.005	0.360*	0.717*	0.205*	0.135*	0.446*	-0.024	0.061*	-0.076*	0.256*
GMI	(3)	0.048	0.484*	**0.817***	-0.020	0.167*	0.286*	0.086*	0.075*	0.322*	0.032	-0.009	-0.084*	0.254*
TCL_RATING	(4)	0.076*	0.016	-0.009	**0.613***	-0.024	0.021	0.026	-0.002	0.397*	0.139*	0.442*	0.485*	0.174*
CGQ_AUDIT	(5)	0.014	0.388*	0.176*	-0.016	**0.681***	0.199*	0.039*	0.477*	0.115*	0.009	0.023	-0.056*	0.096*
CGQ_BOARD	(6)	0.019	0.715*	0.284*	0.027	0.215*	**0.397***	0.166*	0.012	0.301*	-0.033	0.100*	-0.047*	0.148*
CGQ_COMP	(7)	-0.025	0.205*	0.094*	0.026	0.040*	0.165*	**0.205***	0.082*	0.166*	-0.015	-0.001	0.025	0.152*
CGQ_TKOVER	(8)	-0.015	0.138*	0.079*	0.003	0.482*	0.012	0.081*	**0.247***	0.088*	0.024	0.016	-0.033	0.019
TCL_BP	(9)	0.024	0.481*	0.350*	0.399*	0.126*	0.323*	0.176*	0.091*	**0.809***	-0.046*	0.263*	0.323*	0.344*
TCL_ACCTG	(10)	0.131*	-0.007	0.043	0.155*	0.003	-0.013	-0.011	0.019	-0.042	**0.423***	-0.075*	-0.005	-0.014
TCL_BOARD	(11)	0.013	0.064*	0.002	0.450*	0.038	0.100*	-0.001	0.015	0.288*	-0.069*	**0.659***	0.071*	0.124*
TCL_COMP	(12)	0.068*	-0.076*	-0.074*	0.499*	-0.051*	-0.052*	0.017	-0.023	0.296*	-0.024	0.072*	**0.568***	0.057*
TCL_TKOVER	(13)	-0.015	0.247*	0.267*	0.190*	0.085*	0.128*	0.168*	0.033	0.376*	-0.010	0.125*	0.058*	**0.937***

* Indicates statistically significant correlation at the 5% level. *AGR, CGQ, GMI* and *TCL_RATING* are the primary governance ratings of Audit Integrity, ISS, GovernanceMetrics International, and The Corporate Library respectively. AGR, CGQ and GMI ratings are on a 0-100 scale. *TCL_RATING* is converted from an "A" to "F" grade to numerical values 1-5, where "A" equals 5 and "F" equals 1 (no "E"). CGQ sub-scores cover "Audit Review" (*CGQ_AUDIT*), "Board of Directors" (*CGQ_BOARD*), "Executive and Director Compensation and Ownership" (*CGQ_COMP*), and "Takeover Defenses" (*CGQ_TKOVER*). CGQ sub-scores take values 1-5, where 5 is higher quality governance. *TCL_BP* denotes the percentage of certain "best practices" adopted by a company. *TCL_RATING* sub-scores cover "financial compliance" (*TCL_ACCTG*), "board composition" (*TCL_BOARD*), "CEO compensation" (*TCL_COMP*), and "board effectiveness and shareholder friendliness in the area of takeover defenses" (*TCL_TKOVER*). *TCL_RATING* sub-scores take values of "very high concern," "high concern," and "low concern," which are re-coded as 1, 2, and 3 respectively.

Panel C: Industry Composition
(% of each rating sample in each of 24 GICS Industry Groups)

	AGR	CGQ	GMI	TCL	Compustat
Energy	4.42	4.40	4.81	4.52	6.06
Materials	4.72	4.71	6.36	6.34	6.31
Capital Goods	7.65	7.65	8.18	7.99	6.87
Commercial & Professional Services	3.33	3.25	3.25	3.25	3.37
Transportation	1.95	1.94	2.14	2.48	1.99
Automobiles & Components	1.48	1.52	1.62	1.87	1.43
Consumer Durables & Apparel	4.29	4.40	4.61	4.80	3.78
Consumer Services	3.56	3.63	4.03	4.08	3.40
Media	3.07	3.05	3.18	3.36	3.13
Retailing	5.21	4.98	6.04	6.39	3.77
Food & Staples Retailing	0.92	0.93	1.17	1.27	0.79
Food, Beverage & Tobacco	2.34	2.42	2.99	3.03	2.27
Household & Personal Products	0.76	0.80	0.84	0.99	0.91
Health Care Equipment & Services	7.62	7.62	7.40	6.84	6.82
Pharma, Biotech & Life Sciences	7.42	7.20	3.44	3.09	6.17
Banks	7.52	7.75	5.52	5.62	9.28
Diversified Financials	2.57	2.53	3.18	3.03	2.84
Insurance	2.87	2.80	3.64	3.36	2.59
Real Estate	4.16	4.29	3.64	3.53	3.21
Software & Services	8.31	8.34	6.30	7.06	9.19
Technology Hardware & Equipment	6.99	6.99	7.34	7.00	7.24
Semiconductors (inc. Equipment)	3.99	3.95	4.16	4.08	2.67
Telecommunication Services	1.72	1.63	1.17	1.32	2.66
Utilities	3.13	3.22	5.00	4.69	3.26

GICS refers to the Global Industrial Classification System, as used by CGQ. Compustat sample is restricted to those firms with GICS on file.

Table 2: Governance Ratings and Future Restatements

Panel A: Primary governance ratings, unconditional analysis

	AGR	CGQ_ INDUSTRY	GMI	TCL_ RATING
Rating	-0.318***	-0.0327	-0.417***	0.0241
	(0.053)	(0.081)	(0.11)	(0.098)
Observations	6846	5148	1584	1938
Pseudo R^2	0.014	0.0001	0.021	<0.0001

Panel B: Primary governance ratings, conditional analysis

	AGR	CGQ_ INDUSTRY	GMI	TCL_ RATING
Rating	-0.309***	-0.0879	-0.404***	-0.0359
	(0.051)	(0.079)	(0.12)	(0.094)
Observations	5696	4398	1489	1810
Pseudo R^2	0.019	0.007	0.026	0.017

Panel C: Governance rating sub-scores, unconditional analysis

	CGQ_ AUDIT	CGQ_ BOARD	CGQ_ COMP	CGQ_ TKOVER	TCL_ ACCTG	TCL_ BP	TCL_ BOARD	TCL_ COMP	TCL_ TKOVER
Rating	-0.0248	-0.0324	0.0128	-0.0199	-0.261***	-0.154**	0.0647	0.107	-0.0672
	(0.079)	(0.070)	(0.069)	(0.080)	(0.069)	(0.074)	(0.13)	(0.11)	(0.084)
Observations	4950	4948	4948	4948	1928	1919	1926	1923	1920
Pseudo R^2	<0.001	<0.001	<0.001	<0.001	0.011	<0.003	<0.001	0.001	<0.001

Panel D: Governance rating sub-scores, conditional analysis

	CGQ_ AUDIT	CGQ_ BOARD	CGQ_ COMP	CGQ_ TKOVER	TCL_ ACCTG	TCL_ BP	TCL_ BOARD	TCL_ COMP	TCL_ TKOVER
Rating	-0.0819	-0.108*	-0.0238	-0.0437	-0.249***	-0.143*	-0.0595	0.0665	-0.0577
	(0.083)	(0.065)	(0.064)	(0.082)	(0.069)	(0.085)	(0.12)	(0.11)	(0.085)
Observations	4224	4223	4223	4223	1801	1793	1799	1796	1794
Pseudo R^2	0.007	0.007	0.006	0.006	0.0264	0.020	0.017	0.017	0.018

*, **, *** Indicates significance at the 10 percent, 5 percent, and 1 percent levels, respectively. Numbers in parentheses are standard errors clustered by two-digit SIC code.
Results are for logit regressions where the dependent variable equals 1 if the firm files a restatement of financial statements for years between 2004 and 2007 involving revenues or expenses in the two years after December 31, 2005 (per Glass,

Lewis database), 0 otherwise, and independent variables are the indicated governance rating as of December 31, 2005 and either a constant (unconditional analysis) or controls (conditional analysis). Following Larcker, Richardson and Tuna (2007), the controls used are debt-to-market (*Leverage*), book-to-market (*BM*), *External Financing*, log of market capitalization, *Log(MarketValue)*, cash spent on acquisitions (*Acquisitions*) and *Free Cash Flow*. All controls are measured for the latest fiscal year ending on or before September 30, 2005. Each governance rating is standardized to have a mean of zero and standard deviation of one. Only coefficients on the ratings are reported for reasons of space. To be included in the sample, firm must have data for controls on Compustat. See Panel A of Table 1 for definitions of rating variables.

Table 3: Governance Ratings and Future Class-Action Lawsuits

Panel A: Primary governance ratings, unconditional analysis

	AGR	CGQ_ INDUSTRY	GMI	TCL_ RATING
Rating	-0.392***	0.379***	-0.123	-0.198**
	(0.068)	(0.090)	(0.11)	(0.10)
Observations	5368	4376	1557	1874
Pseudo R^2	0.019	0.013	0.002	0.005

Panel B: Primary governance ratings, conditional analysis

	AGR	CGQ_ INDUSTRY	GMI	TCL_ RATING
Rating	-0.395***	0.00912	-0.317***	-0.154
	(0.074)	(0.10)	(0.12)	(0.11)
Observations	5368	4376	1557	1874
Pseudo R^2	0.092	0.093	0.099	0.073

Panel C: Governance rating sub-scores, unconditional analysis

	CGQ_ AUDIT	CGQ_ BOARD	CGQ_ COMP	CGQ_ TKOVER	TCL_ ACCTG	TCL_ BP	TCL_ BOARD	TCL_ COMP	TCL_ TKOVER
Rating	0.0917	0.386***	-0.113	-0.0202	0.0456	-0.115	-0.0967	-0.234***	-0.0483
	(0.088)	(0.089)	(0.082)	(0.083)	(0.11)	(0.10)	(0.096)	(0.085)	(0.10)
Observations	4221	4219	4219	4219	1869	1860	1867	1864	1861
Pseudo R^2	0.0011	0.015	0.001	0.000	0.000	0.001	0.001	0.008	0.000

Panel D: Governance rating sub-scores, conditional analysis

	CGQ_ AUDIT	CGQ_ BOARD	CGQ_ COMP	CGQ_ TKOVER	TCL_ ACCTG	TCL_ BP	TCL_ BOARD	TCL_ COMP	TCL_ TKOVER
Rating	-0.0990	0.0814	-0.202**	-0.0336	0.0267	-0.183*	-0.115	-0.137	-0.110
	(0.091)	(0.097)	(0.084)	(0.084)	(0.11)	(0.11)	(0.10)	(0.093)	(0.10)
Observations	4221	4219	4219	4219	1869	1860	1867	1864	1861
Pseudo R^2	0.095	0.095	0.096	0.094	0.071	0.074	0.071	0.073	0.072

*, **, *** Indicates significance at the 10 percent, 5 percent, and 1 percent levels, respectively. Numbers in parentheses are standard errors. Results are for logit regressions where the dependent variable (*Lawsuit*) equals 1 if a class-action lawsuit is filed against the firm in the two years after December 31, 2005 (per the Woodruff Sawyer database), 0 otherwise, and the independent variables are the indicated governance rating as of December 31, 2005 and either a constant (unconditional analysis) or controls (conditional analysis). Following Rogers and Stocken (2005), we use the following controls: the natural log of the average market value of equity (*Size*), average daily turnover divided by average shares outstanding (*Turnover*), the slope coefficient from a regression of daily returns on the CRSP value-weighted index (*Beta*), buy-and-hold returns (*Returns*), the standard deviation, skewness and minimum value of daily returns (*Std Dev(Returns)*, *Skewness(Returns)*, *Min(Returns)* respectively) and indicators for membership of the following industry groups: Biotechnology, Computer Hardware, Electronic, Retailing, and Computer Software (see Rogers and Stocken, 2005 for SIC codes). All controls are measured over the year ending December 31, 2005. Each governance rating is standardized to have a mean of zero and standard deviation of one. To be included in the sample, firm must have data for controls on CRSP. Only coefficients on the ratings are reported for reasons of space. See Panel A of Table 1 for definitions of rating variables.

Table 4: Governance Ratings and Future Operating Performance

Panel A: Primary governance ratings, without lagged ROA

	AGR	CGQ_INDUSTRY	GMI	TCL_RATING
Rating	0.0255***	0.00149	-0.00668*	0.00785**
	(0.0036)	(0.0038)	(0.0034)	(0.0031)
ln(MV)	0.0490***	0.0411***	0.0208***	0.0239***
	(0.0016)	(0.0017)	(0.0026)	(0.0021)
Constant	-0.346***	-0.274***	-0.111***	-0.138***
	(0.010)	(0.011)	(0.021)	(0.017)
Observations	5271	4163	1466	1753
R-squared	0.16	0.17	0.04	0.07

Panel B: Primary governance ratings, with lagged ROA

	AGR	CGQ_INDUSTRY	GMI	TCL_RATING
Rating	0.00528***	-0.00220	-0.000833	-0.00232
	(0.0018)	(0.0021)	(0.0014)	(0.0015)
Ind.Adj. ROA_{t-1}	0.878***	0.855***	0.948***	0.903***
	(0.0067)	(0.0086)	(0.011)	(0.012)
ln(MV)	0.00787***	0.00819***	0.00489***	0.00383***
	(0.00083)	(0.00098)	(0.0010)	(0.0011)
Constant	-0.0598***	-0.0602***	-0.0425***	-0.0301***
	(0.0054)	(0.0063)	(0.0084)	(0.0082)
Observations	5271	4163	1466	1753
R-squared	0.80	0.75	0.85	0.78

Table 4: Governance Ratings and Future Operating Performance

Panel C: Governance rating sub-scores, without lagged ROA

	CGQ_AUDIT	CGQ_BOARD	CGQ_COMP	CGQ_TKOVER	TCL_ACCTG	TCL_BP	TCL_BOARD	TCL_COMP	TCL_TKOVER
Rating	-0.0114***	-0.0101***	-0.00522	-0.00366	0.00593*	-0.00226	0.0103***	0.00420	-0.000298
	(0.0033)	(0.0035)	(0.0032)	(0.0032)	(0.0031)	(0.0031)	(0.0031)	(0.0031)	(0.0030)
ln(MV)	0.0440***	0.0448***	0.0431***	0.0428***	0.0225***	0.0234***	0.0243***	0.0238***	0.0233***
	(0.0015)	(0.0017)	(0.0015)	(0.0015)	(0.0021)	(0.0021)	(0.0021)	(0.0021)	(0.0021)
Constant	-0.290***	-0.295***	-0.285***	-0.283***	-0.127***	-0.135***	-0.141***	-0.138***	-0.134***
	(0.0099)	(0.011)	(0.0097)	(0.0097)	(0.017)	(0.017)	(0.017)	(0.017)	(0.016)
Observations	4057	4055	4055	4055	1746	1738	1744	1742	1739
R-squared	0.17	0.17	0.17	0.17	0.07	0.07	0.07	0.07	0.07

Panel D: Governance rating sub-scores, with lagged ROA

	CGQ_AUDIT	CGQ_BOARD	CGQ_COMP	CGQ_TKOVER	TCL_ACCTG	TCL_BP	TCL_BOARD	TCL_COMP	TCL_TKOVER
Rating	-0.00588***	-0.00585***	-0.00130	-0.00203	-0.00215	0.000135	0.000240	0.000892	-0.000398
	(0.0018)	(0.0019)	(0.0017)	(0.0018)	(0.0015)	(0.0015)	(0.0015)	(0.0015)	(0.0015)
Ind.Adj. ROA_{t-1}	0.853***	0.853***	0.854***	0.854***	0.902***	0.901***	0.903***	0.900***	0.901***
	(0.0088)	(0.0088)	(0.0088)	(0.0088)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
ln(MV)	0.00845***	0.00900***	0.00787***	0.00780***	0.00441***	0.00430***	0.00419***	0.00452***	0.00433***
	(0.00092)	(0.00098)	(0.00090)	(0.00090)	(0.0010)	(0.0010)	(0.0011)	(0.0011)	(0.0010)
Constant	-0.0617***	-0.0649***	-0.0584***	-0.0580***	-0.0349***	-0.0340***	-0.0330***	-0.0357***	-0.0342***
	(0.0059)	(0.0062)	(0.0058)	(0.0058)	(0.0081)	(0.0081)	(0.0083)	(0.0083)	(0.0081)
Observations	4057	4055	4055	4055	1746	1738	1744	1742	1739
R-squared	0.75	0.75	0.75	0.75	0.78	0.78	0.78	0.78	0.78

*, **, *** Indicates significance a the 10 percent, 5 percent, and 1 percent levels, respectively. Numbers in parentheses are standard errors.

Results are for OLS regressions where the dependent variable is industry-median adjusted ROA (*Adj. ROA*) and the independent variables are the indicated governance rating as of December 31, 2005 and, following Larcker, Richardson and Tuna (2007), the logarithm of market value, *ln(MV)*. Industries are defined using two-digit SIC codes. ROA is defined as using income from operations (data #178) divided by average total assets (average of Compustat data #6 for current and prior fiscal year) for the fiscal year ending between June 2006 and May 2007. ROA is winsorized to have an absolute value not greater than one. To be included in the sample, firm must have data for ROA on Compustat and be in an industry with at least 5 observations on ROA. In Panels B and D, we also include industry-adjusted ROA for the prior fiscal year (*Adj. ROA $_{t-1}$*). Each governance rating is standardized to have zero mean unit variance. Only coefficients on the ratings are reported for reasons of space. See Panel A of Table 1 for definitions of rating variables.

Table 5: Governance Ratings and Tobin's Q

Panel A: Primary governance ratings, without lagged Tobin's Q

	AGR	CGQ_ INDUSTRY	GMI	TCL_ RATING
Rating	-0.0800***	-0.177***	0.00282	0.0812***
	(0.031)	(0.026)	(0.028)	(0.026)
Ind. fixed effects	Yes	Yes	Yes	Yes
Observations	5188	4159	1466	1752
R-squared	0.13	0.16	0.19	0.18

Panel B: Primary governance ratings, with lagged Tobin's Q

	AGR	CGQ_ INDUSTRY	GMI	TCL_ RATING
Rating	0.0239	-0.0146	0.0401***	0.00680
	(0.018)	(0.017)	(0.013)	(0.013)
Tobin's Q $_{t-1}$	0.542***	0.551***	0.758***	0.761***
	(0.0056)	(0.0070)	(0.010)	(0.010)
Ind. fixed effects	Yes	Yes	Yes	Yes
Observations	5114	4150	1464	1749
R-squared	0.70	0.67	0.84	0.81

Table 5: Governance Ratings and Tobin's Q

Panel C: Governance rating sub-scores, without lagged Tobin's Q

	CGQ_AUDIT	CGQ_BOARD	CGQ_COMP	CGQ_TKOVER	TCL_ACCTG	TCL_BP	TCL_BOARD	TCL_COMP	TCL_TKOVER
Rating	-0.0459*	-0.0870***	0.0867***	0.0432	0.122***	0.0260	0.0292	0.0250	0.00303
	(0.027)	(0.027)	(0.026)	(0.027)	(0.026)	(0.027)	(0.026)	(0.026)	(0.026)
Ind. fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4054	4052	4052	4052	1745	1737	1743	1741	1738
R-squared	0.15	0.15	0.15	0.15	0.19	0.18	0.18	0.18	0.18

Panel D: Governance rating sub-scores, with lagged Tobin's Q

|	CGQ_AUDIT	CGQ_BOARD	CGQ_COMP	CGQ_TKOVER	TCL_ACCTG	TCL_BP	TCL_BOARD	TCL_COMP	TCL_TKOVER
Rating	0.0307*	-0.0195	0.0283*	0.0129	-0.00349	0.00810	0.00679	0.00827	0.00259
	(0.017)	(0.017)	(0.017)	(0.017)	(0.013)	(0.012)	(0.013)	(0.012)	(0.012)
Tobin's Q_{t-1}	0.552***	0.550***	0.550***	0.551***	0.766***	0.769***	0.761***	0.758***	0.769***
	(0.0070)	(0.0070)	(0.0070)	(0.0070)	(0.010)	(0.0099)	(0.010)	(0.0099)	(0.0099)
Ind. fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4045	4043	4043	4043	1742	1734	1740	1738	1735
R-squared	0.67	0.67	0.67	0.67	0.81	0.82	0.81	0.82	0.82

*, **, *** Indicates significance a the 10 percent, 5 percent, and 1 percent levels, respectively. Numbers in parentheses are standard errors.
Results are for OLS regressions where the dependent variable is *Tobin's Q*, defined as the ratio (*TA+MVE-BVE*)/*TA*, where *TA* is total assets (Compustat item #6), *MVE* is market capitalization (item #199 * item #25) and *BVE* is the book value of equity (item #60), each for the fiscal year ending between June 2006 and May 2007. Each governance rating is standardized to have a mean of zero and standard deviation of one. To be included in the sample, firm must have data for *Tobin's Q* on Compustat and be in an industry with at least 5 observations. Industry fixed effects are not reported for reasons of space. See Panel A of Table 1 for definitions of rating variables.

Table 6: Governance Ratings and Future Stock Performance

Panel A: Primary governance ratings

	AGR	CGQ_INDUSTRY	GMI	TCL_RATING
Rating	0.00292***	-0.000347	0.000742	0.000974*
	(0.00046)	(0.00050)	(0.00055)	(0.00058)
Constant	0.000355	-0.000450	-0.000535	-0.000101
	(0.00044)	(0.00048)	(0.00055)	(0.00058)
Observations	5263	4220	1560	1851
R-squared	0.01	0.00	0.00	0.00

Panel D: Governance rating sub-scores

	CGQ_AUDIT	CGQ_BOARD	CGQ_COMP	CGQ_TKOVER	TCL_ACCTG	TCL_BP	TCL_BOARD	TCL_COMP	TCL_TKOVER
Rating	-0.000180	-0.00123**	0.000598	-0.000640	-0.000280	0.000311	0.000458	0.000869	0.000377
	(0.00051)	(0.00050)	(0.00049)	(0.00049)	(0.00058)	(0.00059)	(0.00058)	(0.00057)	(0.00058)
Constant	-0.000812*	-0.000686	-0.000830*	-0.000820*	-0.0000724	-0.0000420	-0.0000398	-0.0000329	-0.0000377
	(0.00049)	(0.00049)	(0.00049)	(0.00049)	(0.00058)	(0.00058)	(0.00058)	(0.00058)	(0.00058)
Observations	4070	4069	4069	4069	1845	1837	1843	1840	1837
R-squared	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

*, **, *** Indicates significance at the 10 percent, 5 percent, and 1 percent levels, respectively. Numbers in parentheses are standard errors.
Results are for OLS regressions where the dependent variable is alpha estimated as the residual from a four-factor Fama-French model with a momentum factor (*Alpha*) estimated over the 21 months after December 31, 2005 (a minimum of 12 months of return data are required for inclusion). See Panel A of Table 1 for definitions of rating variables. Factor data obtained from Ken French's website.

Table 7: CGQ, ISS Recommendations, and Shareholder Voting

Panel A: Primary governance ratings, unconditional analysis

	All votes	Compensation plans
Constant	0.5558***	-0.1127
	(0.0015)	(0.2082)
CGQ_INDUSTRY	0.0250***	0.0281***
	(0.0864)	(0.0035)
Marginal effect of changes in CGQ_INDUSTRY on probability that ISS recommends a vote "for" the proposal (evaluated at the mean value for CGQ_INDUSTRY)	0.0022	0.0037
Observations	17,352	899

Panel B: CGQ and shareholder voting outcomes

	All votes		Compensation plans	
Constant	0.9542***	0.7900	0.8320***	0.7378***
	(0.0001)	(0.0096)	(0.0134)	(0.0166)
CGQ_INDUSTRY	-0.0004***	-0.0009	-0.0001	-0.0008***
	(0.0001)	(0.0001)	(0.0002)	(0.0002)
ISS recommendation		0.2284***		0.1690***
		(0.0112)		(0.0145)
Observations	17,139	17,139	894	894

*, **, *** Indicates significance at the 10 percent, 5 percent, and 1 percent levels, respectively. Numbers in parentheses are standard errors clustered by firm.
Results in Panel A are for logit regressions where the dependent variable equals 1 if the ISS recommends a vote "for" a proposal. Results in Panel B are for Tobit regressions (with bounds at 0 and 1) where the dependent variable *percent_for* is calculated as the numbers of votes for a proposal divided by the sum of votes for, votes against plus abstentions. Shareholder voting data are for initiatives voted on at meetings in 2005 and 2006 for which we have prior CGQ ratings. Votes on compensation plans include votes on compensation, stock and option plans, excluding non-employee plans. See Panel A of Table 1 for definitions of rating variables.

Table 8: Summary of Primary Results

Dependent variable		Primary Ratings				CGQ Sub-scores				TCL Sub-scores				
		AGR	CGQ	GMI	TCL_RATING	CGQ_AUDIT	CGQ_BOARD	CGQ_COMP	CGQ_TKOVER	TCL_ACCTG	TCL_BP	TCL_BOARD	TCL_COMP	TCL_TKOVER
Restatements	No controls	***		***						***	**			
	Controls	***		***			*			***	*			
Class-action Lawsuits	No controls	***	xxx		**		xxx							***
	Controls	***		***				**			*			
Operating performance	No lag	***		x	**	xxx	xxx			*		***		
	Lagged ROA	***				xxx	xxx							
Tobin's Q	No lag	xxx	xxx		***	x	xxx	***		***				
	Lagged Q			***		*		*						
Stock performance		***			*		xx							

*, **, *** Indicates significance with the expected sign at the 10 percent, 5 percent, and 1 percent levels, respectively.
x, xx, xxx Indicates significance but with the unexpected sign at the 10 percent, 5 percent, and 1 percent levels, respectively.

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Figure 1: Distribution of Ratings
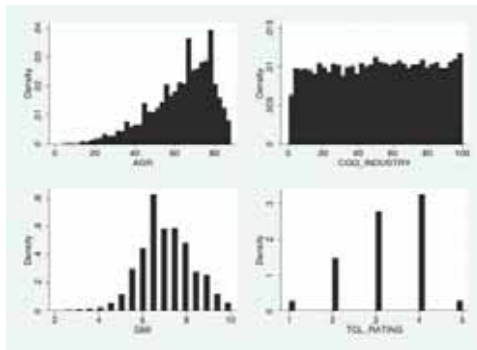
The Promise and Peril of Corporate Governance Indices

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The Promise and Peril
of Corporate Governance Indices

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Abstract

Financial economists and commercial providers of governance services have in recent years created measures of the quality of firms' corporate governance which collapse into a single number (a governance index or rating) the multiple dimensions of a company's governance. The aim of this paper is twofold, to analyze the performance of corporate governance indices in predicting corporate performance, and to consider the implications for public policy that follow from that assessment. We highlight methodological shortcomings of the extant papers that claim a relation between particular governance measures and corporate performance. Our core conclusion is that there is no consistent relation between governance indices and measures of corporate performance. Namely, there is no one "best" measure of corporate governance: the most effective governance institution appears to depend on context, and on firms' specific circumstances. It would therefore be difficult for an index, or any one variable, to capture critical nuances for making informed decisions. As a consequence, we conclude that governance indices are highly imperfect instruments for determining how to vote corporate proxies, let alone for portfolio investment decisions, and that investors and policymakers should exercise caution in attempting to draw inferences regarding a firm's quality or future stock market performance from its ranking on any particular corporate governance measure. Most important, the implication of our analysis is that corporate governance is an area where a regulatory regime of ample flexible variation across firms that eschews governance mandates is particularly desirable, because there is considerable variation in the relation between the indices and measures of corporate performance.

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1. Introduction

Corporate governance took on an urgency in the aftermath of the collapse of Enron and a succession of accounting scandals, becoming a topic of intense media and activist institutional investor interest,[1] in the hope that closer scrutiny of firms' governance could prevent future Enrons. At the same time, corporations were forced to reconsider their governance as federal legislation and stock exchange listing requirements enacted in reaction to the scandals emphasized corporate governance solutions. In addition, mutual funds were forced to become more active in governance with regulation adopted by the U.S. Securities and Exchange Commission (SEC) requiring funds to adopt written policies on proxy voting and disclose their specific votes in 2003. The heightened attention accorded to corporate governance by all of these institutions in turn increased the demand for corporate governance-related services provided by third-parties, for research and advice on proxy voting by institutional investors and by corporations for advice on how to improve their governance to minimize possible adverse proxy voting outcomes.

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[1] For example, there were 426 news stories containing the term "corporate governance" in the *New York Times* in 2002, compared to only 69 in 2000, as found in a Lexis search in the New York Times file in the News library conducted on May 24, 2006. A search of the entire News library in Lexis found similar results, although the order of magnitude differs: there were 38,477 articles referring to corporate governance in 2002, compared to 18,205 articles in 2000. Activist institutions, such as union and public pension funds directed their engagement in the proxy process post-Enron toward advancing their views of good corporate governance. Corporate governance proposals, as identified by the Investor Responsibility Research Center (IRRC), which tracks shareholder proposals submitted at over 1900 firms, including the Fortune 500 and S&P 500, increased dramatically after 2001, averaging 275 over the four years before 2001 and 380 the four years after. The topicality of corporate governance in the media has not abated: in the nearly five years since Enron's collapse, there have been 1,342 *New York Times* news stories containing the phrase "corporate governance," whereas to reach a comparable count prior to that date, one has to cumulate news stories over ten years to 1986 (totaling 1,388), as searched in Lexis in September 2006.

Shortly before the surge in media attention on corporate governance surrounding the collapse of Enron and other accounting scandals, a team of financial economists, Paul Gompers, Joy Ishii and Andrew Metrick (GIM), had written an important paper in which they constructed an index of the quality of corporate governance for a large number of publicly traded U.S. firms, and found that higher quality as defined by their index was associated with improved future stock performance.[2] The focus on corporate governance following Enron's collapse made GIM's work of great interest to a far wider audience than academics working on corporate governance. The relation between governance and performance identified in their paper offered intellectual support for commercial providers of governance ranking services, a connection not lost on those organizations. Although GIM were assiduously careful in interpreting their data and did not draw causal conclusions about the relation between good governance and superior performance, commercial providers of governance services and some institutional investor activists exercise no such caution.[3] This fed into the demand for governance services, which accelerated post-Enron. A market for corporate governance ratings now exists, with those ratings being used in the formulation of voting recommendations by proxy advising firms, such as the

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[2] Paul Gompers, Joy Ishii and Andrew Metrick, Corporate Governance and Equity Prices, NBER W.P. W8449 (August 2001). The paper was presented at the NBER's 2001 summer conference; it was not published until two years later. GIM's research was a response to, and outgrowth of, an important move in the finance literature that had become one of the more active areas of research, in which countries were classified by the quality of their corporate laws' protection of shareholders, and correlations identified between the quality of the regime and favorable economic features, such as growth and market capitalization. See, e.g., Rafael LaPorta et al., Law and Finance, 106 J. Pol. Econ. 1113 (1998). Because that comparative literature did not operate at the firm level in analyzing corporate governance but used laws "on the books", GIM's paper was both a natural, and important, extension of that literature's finding that "law mattered."

[3] See notes 47 & 59 infra, noting Glass Lewis & Co.'s use of academic research in the construction and marketing of its governance ranking system, and Institutional Shareholder Services, Inc.'s marketing claims regarding the relation between its governance ranking and performance.

overwhelming market leader, Institutional Shareholder Services, Inc. (ISS).[4]

The aim of this paper is twofold, to analyze the performance of the corporate governance indices that have been created in the recent past in predicting corporate performance, and to consider the implications for public policy that follow from that assessment. Establishing a relation between governance and performance is technically difficult because the two variables are plausibly endogenous, and the use of the existing indices can magnify that problem because their construction is based on two factually incorrect assumptions, that good governance components do not vary across firms and are always complements and never substitutes. The paper examines methodological issues in the construction and interpretation of governance indices and their relation to performance not so much as to critique the foundational work of GIM, although we do that, but rather to criticize the use to which corporate governance indices such as GIM's have been put.[5] Because the precise construction of commercial indices is viewed as proprietary information by their owners and is thus not publicly available, our analysis focuses on the relation between corporate performance and the academic indices, some of which are, fortunately for our purposes, closely linked to commercial ones. We believe that conclusions from this analysis are equally applicable to the use of commercial indices.

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[4] See Paul Rose, The Corporate Governance Industry, 32 J. Corp. L. 887 (2007). Because ISS also provides governance consulting services to firms, some commentators have criticized the use of its governance index in its proxy voting advice as creating an inherent conflict of interest. E.g., id.; Jeffrey Sonnenfeld, Good Governance and the Misleading Myths of Bad Metrics, 18 Acad. Mgmt. Exec. 108, 111 (2004). ISS's position is that there is no conflict because it has established "firewalls" between the divisions, as is the practice in investment banks for mitigating conflicts across the various services they offer firms and investors. Of course, not all providers of governance rankings are in a conflicted position, since many do not engage in issuer consulting services or provision of proxy voting advice. In our view, reliance on governance indices in proxy voting is problematic quite apart from whether there is a conflict of interest, and we therefore do not address this issue.

[5] For other commentators raising concern about the leading governance indices see Rose, supra note 4 and Sonnenfeld, supra note 4.

Our core conclusion is that there is no consistent relation between the academic and related commercial governance indices and measures of corporate performance. In short, there is no one "best" measure of corporate governance: the most effective governance institution appears to depend on context, and on firms' specific circumstances. It would therefore be difficult for an index, or any one variable, to capture critical nuances for making informed decisions. As a consequence, we also conclude that governance indices are highly imperfect and unsatisfactory screens for determining how to vote corporate proxies, and that investors and policymakers should exercise utmost caution in attempting to draw inferences regarding a firm's quality or future stock market performance from its ranking on any particular corporate governance measure. If we had to make a choice between using an index and one variable, we would, in fact, select one variable, the median independent director's stockholdings, which we conclude from the research that two of us have undertaken, performs better overall with respect to evaluating corporate performance. Most important, the regulatory implication of our analysis is that corporate governance is an area where a regulatory regime of ample flexible variation across firms that eschews governance mandates is particularly desirable, because there is considerable variation in the relation between different governance indices and different measures of performance.

The first part of the paper briefly summarizes the principal mechanisms of corporate governance and research on their relation to corporate performance, and then turns to the indices that have been advanced to measure the quality of firms' corporate governance. The next part introduces our methodological concerns regarding the indices' construction and discusses recent work by two of us on the relation between governance mechanisms and performance that calls into question findings in the academic literature concerning that relation. In the final section, we

turn to the central question for investors and policymakers of how best to use corporate governance indices, drawing upon the earlier analysis, to suggest when, if ever, specific governance measures might prove to be useful for decisionmaking, and, more importantly, what direction corporate governance regulation ought to take.

2. Measuring Corporate Governance

Following GIM's contribution, there are now a number of academic indices that have been created as measures of the quality of a firm's governance, along with several commercial products. After identifying the principal institutions of corporate governance from which the indices are derived, we explain the construction of the leading indices.

A. Institutions of Corporate Governance

The key focus of U.S. corporate law and corporate governance systems is what is referred to as an agency problem, the organizational concern arising when corporate ownership and control are separated. The agency problem is that when managers and shareholders are not identical, managers may take actions that benefit themselves at shareholders' expense. They may, for example, not work as diligently as they could because the increase in firm value that hard work produces is shared with stockholders (in proportion to their equity investments) while managers bear the full cost of their greater exertion compared to working less diligently on the job. The panoply of mechanisms by which managers are incentivized and/or constrained to act in the shareholders' interest constitute a firm's corporate governance. Corporate law seeks to facilitate and support those mechanisms by providing an organizing framework. The most elemental components of a corporate governance system are the board of directors, shareholder

meetings and shareholder voting, and executive compensation.[6]

1. *Key Mechanisms of Corporate Governance*

Directors who are not employees of the corporation (independent or outside directors) are considered by some commentators and many institutional investors to be the crucial corporate governance mechanism for monitoring managers.[7] Congress and the stock exchanges under the shadow of the SEC have codified this notion of the directors' role, by mandating, respectively, appointment of independent directors to all of the audit committee positions, and to all of the compensation and nominating committee positions as well as to a majority of the board.[8] In addition, investor groups identified with public pension and union funds have outlined what they consider best practices, of which a principal component is for the entire board to consist of independent directors, including the board chairman.[9]

Shareholder meetings and voting rights provide owners with an opportunity to select and replace directors, to approve or reject management initiatives offered for their consideration, and to present proposals for management's consideration and otherwise interact directly with management. Institutional investor activism in recent years has focused on this governance

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[6] See, for instance, the Council of Institutional Investors' statement of corporate governance policies at http://www.cii.org/policies/corpgovernance.htm (hereafter CII website). The first three components – boards, shareholder meetings and voting – are codified in state corporation laws. The New York Stock Exchange's corporate governance listing requirements focus on boards of directors and shareholder voting on compensation plans. See NYSE Corporate Governance Listing Standards, section 303-A, available at http://www.nyse.com/about/listed/1101074746736.html (hereafter NYSE standard).

[7] CII website, supra note 6.

0. Sarbanes-Oxley Act section 301, 2002 U.S.C.C.A.N. (116 Stat.) at 775-77 (codified at 15 U.S.C. §78j-l(m); NYSE standard, supra note 6. All exchange rules, which include these listing requirements, must be approved by the SEC.

[9] E.g., CII website, supra note 8.

mechanism, through sponsorship of proposals and negotiation with management over the proposals' substance, on a variety of governance issues, such as takeover defenses and executive compensation.[10] Such activism is also connected to the governance mechanism of the board of directors, in that, shareholder proposals often seek to increase the representation of independent directors on the board, although the current emphasis has been directed at the number of votes required to elect directors.

Shareholders who own a block of stock are better able to make use of their ownership to monitor managers than small shareholders, because the cost of a blockholder's activism is more likely to be recouped by the pro rata benefits obtained, as it is spread over more shares. Blockholders are therefore often characterized in the academic literature as a mechanism of corporate governance.[11] The most acute example of this governance mechanism is the hostile takeover, as it typically results in the concentration of ownership that fully internalizes the costs and benefits of the agency problem. Moreover, even the threat of a takeover can function as a disciplinary mechanism of managers. Accordingly, institutions that not only create blocks but also facilitate control changes are often characterized as critical backstop components of corporate governance. If agency costs become too high, it will be profitable to take over the firm and concentrate control, reducing those costs.

Firms that adopt defenses to takeover devices to impede control changes are thus conventionally characterized as firms with poor corporate governance, and the absence of such

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[10] Romano, Less is More: Making Institutional Investor Activism A Valuable Mechanism of Corporate Governance, 18 Yale J. on Reg 174 (2001); CII website, supra note 8.

[11] E.g., Andrei Shleifer & Robert W. Vishny, Large Shareholders and Corporate Control, 94 J. Pol. Econ. 461 (1986); Andrei Shleifer & Robert W. Vishny, A Survey of Corporate Governance, 52 J. Fin. 737 (1997).

defenses is correlatively identified as a feature of good corporate governance.[12] The market for control is referred to in the literature as an "external" governance mechanism – it is an institution that disciplines managers but it is external to the firm – in contrast to firms' "internal" governance institutions, such as the board of directors, which are instruments constraining the agency problem that exist within the boundaries of the firm and are thereby mechanisms over which firms exert greater control.

A final important component of firms' internal governance is executive compensation. There is a well-developed literature on the fashioning of incentives to achieve consonancy between manager's actions and shareholders' interest through the use of stock and stock option compensation.[13] Until the spate of corporate scandals that came to light starting with Enron, compensation in the form of stock and stock options was often emphasized as a key to improved corporate performance, and it has been the most substantial component of executive pay for well over a decade. Even Congress implicitly accepted that understanding when it eliminated the corporate income tax deduction for executive salaries in excess of $1 million, since the limitation was applicable only to non-incentive-based compensation (i.e., deductions could be taken for compensation over $1 million paid in the form of bonus, stock or stock options tied to market

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[12] Shareholder activism – the creation of the Council of Institutional Investors and the sponsorship of shareholder proposals by public pension funds and other institutional investors – was initiated in the 1980s in response to management efforts to thwart hostile takeovers. The bulk of investor activism has historically been directed at repealing firm-level defenses. See, e.g., Romano, supra note 10.

[13] See, e.g., Bengt Holmstrom, Moral Hazard and Observability 10 Bell J. Econ. 4 (1979); Bengt Holmstrom, Managerial Incentive Problems - A Dynamic Perspective, in Essays in Economics and Management in Honor of Lars Wahlbeck 209 (1982).

performance measures).[14] Moreover, an important study by Michael Jensen and Kevin Murphy lent support to this view, as it documented what they considered to be trivial responsiveness of executive compensation to stock performance.[15] They viewed this mismatch of incentives to be a matter of serious policy concern, and advocated increasing equity incentive compensation.[16]

The tide of popular opinion turned against equity and option-based compensation, however, after Enron and other corporate accounting scandals came to light, fueled by repeated assertions in the media from journalists, commentators, and public and union pension funds, that executive compensation is unreasonably high. This turn of events is not an altogether surprising development, as executive compensation has historically been a target of populist press attacks after market declines.[17] The accounting scandals revived executive compensation as an issue because some scandal-ridden firms' executives reported gains in the range of tens and hundreds

of millions of dollars from stock option exercises before their firms imploded, and those gains were now a sore point to, among others, investors whose stock was worthless and employees whose jobs were lost. The phenomenon also affected managers of firms not tainted by scandal, but who had sizeable gains on option exercises while their shareholders' investments were tanking in the market decline following the terrorist attacks on September 11, 2001, a decline that continued throughout the revelations of accounting frauds in 2002.

Managerial incentive alignment through equity ownership has not, however, been entirely discredited or jettisoned as an important mechanism of corporate governance by those who consider executive compensation "excessive."[18] Rather, even the most severe critics of executive compensation have advocated structural changes to give shareholders greater control in director elections, as opposed to elimination of incentive pay altogether. Similarly, the Council of Institutional Investors (CII), an association of pension funds that lobbies on corporate governance, issued a statement on executive compensation policy that recommends restrictions on the form and amount of incentive compensation, but not its abandonment.[19] Most recently, the focus of institutional investor activist attention has been to require shareholder approval of the chief executive officer's (CEO) compensation, by means of shareholder proposals sponsored by union funds, an approach that would be mandated for all public companies under legislation introduced by the current chairman of the House of Representatives' Financial Services

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[14] IRC §162(m). The provision was enacted in 1993 as part of the Omnibus Budget Reconciliation Act, at a time of public criticism of executive compensation. See, e.g., Nancy L. Rose & Catherine Wolfram. "Regulating Executive Pay: Using The Tax Code To Influence Chief Executive Officer Compensation," 20 J. Labor Econ. S138 (2002). Some commentators have attributed the Enron and related corporate scandals to that legislation. The contention is that, because managers could only receive substantial compensation in the form of stock and stock options, they had incentives to engage in accounting manipulation to maintain high stock prices. E.g., Bruce Bartlett, Not So Suite: Clinton Tax Law is Problem, Not Greedy Execs, National Review online (Sept. 25, 2002), available at http://www.nationalreview.com/nrof_bartlett/bartlett092502.asp.

[15] Michael C. Jensen & Kevin J. Murphy, Performance Pay and Top-Management Incentives, 98 J. Pol. Econ. 225 (1990). They calculated that CEO compensation changed by only $3.25 for a $1,000 change in stock value.

[16] Michael C. Jensen & Kevin J. Murphy, CEO Incentives: Its Not How *Much* You Pay But *How*, 3 J. Applied Corp. Fin. 36 (Fall, 1990).

[17] E.g., Michael C. Jensen & Kevin J. Murphy, Performance Pay and Top-Management Incentives, Working Paper 43 (June 4, 1989) (listing newspaper headlines attacking high executive compensation from the 1980s), available at http://www-rcf.usc.edu/~kjmurphy/jmjpe.pdf; Joel Seligman, The Transformation of Wall Street 25-26 (rev. ed. 1995) (example of how a critical focus of the Pecora hearings that provided the basis for federal securities regulation in the 1930s was the compensation of bank executives).

[18] See Lucian Bebchuk & Jesse Fried, Pay without Performance 189-216 (2004). Their belief is that such institutional modifications will provide incentives to reduce compensation by facilitating the election of directors who approve either smaller compensation packages for management or the use of incentive compensation keyed to relative performance rather than general stock market movements.

[19] See Council Policy on Executive Compensation (Apr. 11, 2006), available at http://www.cii.org/policies/2006%20Policies%20Executive.pdf.

Committee, which has jurisdiction over the SEC.[20]

    2. *Governance Mechanisms and Firm Performance*

    The empirical literature investigating the effect of individual corporate governance mechanisms on corporate performance has not systematically identified positive effects and is, at best, inconclusive. There have been innumerable studies examining the impact of board composition on performance, and the decisive balance of studies finds no relation between director independence and performance, whether measured by accounting or stock return measures.[21] Similarly, most studies seeking to measure the impact on performance of shareholder activism in the form of sponsoring shareholders proposals find no significant stock price effect from that activity.[22] When negotiations over proposals that result in the proposal's withdrawal have been studied, the findings are all over the map with respect to statistical

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[20] See, e.g., L. Reed Walton, Will Other Firms Follow Aflac?, in Institutional Shareholder Services Governance Weekly (Feb. 23, 2007); and Potential Legislation, in id.

[21] For literature reviews see, e.g., Sanjai Bhagat & Bernard Black, The Uncertain Relationship Between Board Composition and Firm Performance, 54 Bus. Law. 921 (1999); Roberta Romano, Corporate Law and Corporate Governance, 5 Indus. & Corp. Change 277, 284-90 (1996). In fact, in a few instances, researchers find a positive impact on performance from the presence of inside, rather than outside, directors. E.g., Bhagat & Black, supra; April Klein, Firm Performance and Board Committee Structure, 41 J. L. & Econ. 275 (1998). The literature reviews by Bhagat and Black and Romano also summarize the results of the many studies examining whether independent boards make different decisions from nonindependent boards, and whether the outcomes benefit shareholders, and here the data are mixed, with occasional examples of independent boards outperforming nonindependent ones. For example, studies have found a higher probability of a CEO's termination after poor performance when a majority of directors are independent, and positive price effects from the adoption of poison pills when a majority of the board is independent. See Michael S. Weisbach, Outside Directors and CEO Turnover, 20 J. Fin. Econ.431 (1988); James A. Brickley et al., Outside Directors and Adoption of Poison Pills, 35 J. Fin. Econ. 371 (1994).

[22] For literature reviews see e.g., Bernard Black, Shareholder Activism and Corporate Governance in the United States in 3 The New Palgrave Dictionary of Economics and the Law 459 (Peter Newman, ed. 1998); Romano, supra note 10. The results in the literature are mixed concerning whether shareholder proposals result in firms' undertaking significant structural changes or governance reforms. See id. at 219-221.

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significance, varying with proposal and proponent type, among other factors. At the other end of the activism spectrum, however, proxy fights for board seats have significant positive price effects, whether or not challengers succeed.[23] The incentive effect from having to spend more substantial resources of one's own to engage in such challenges, and the more significant organizational consequences that result from such costly efforts, no doubt, would appear to explain the differential performance effect of this activity.

    The relation between voting rights and performance has not been as extensively studied as that of board composition, at least in part because most governance activists have focused their attention on the board. With respect to the economic impact of voting rights, while differential voting rights are not particularly prevalent among U.S. firms, studies of corporations issuing dual class stock find significant premiums accorded to the voting shares (where both classes trade),[24] and some evidence that firm value is positively related to the closer the fraction of insiders' voting rights is to their fraction of economic ownership (dividend rights), i.e., the closer it approximates one-share one-vote.[25]

    Because voting rights and ownership are two sides of the same coin, studies investigating the relation between ownership and performance can be viewed as equivalent to examining the relation between voting rights in firms with only one class of stock and performance. Several of

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[23] See, e.g., Romano, supra note 10, at 182, 221.

[24] E.g., Luigi Zingales, What Determines the Value of Corporate Votes?, 110 Q. J. Econ. 1047 (1995). Zingales attributes cross-country premia differentials to the protection the legal regimes offer to the public (noncontrolling) shareholders.

[25] Paul A Gompers, Joy Ishii & Andrew Metrick, Extreme Governance: An Analysis of Dual-Class Firms in the United States (2006), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=562511. The relation is significant in only some model formulations.

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those studies have found nonlinear relations between insider stock ownership and performance.[26] That is, for small-scale blocks there are positive valuation effects (presumably from monitoring), but as control increases, the benefits from blockholding decrease, either because there are no economies of scale from blockholding or, the thesis often advanced in the academic literature, because the benefits are offset by potential expropriation. In either scenario, lower firm values are the result.

A similar relation has not, however, been consistently detected for outside block ownership,[27] and a comprehensive study of relational investing (outsiders holding large blocks for the long term) did not identify a systematic positive performance effect: the relation was positive only in the late 1980s when the level of hostile takeover activity was high.[28] There have been other efforts at measuring the benefit of outside blockholding as a governance device that find stronger results: several studies have found positive price effects upon the formation of outsider blocks.[29] Those studies' findings can be reconciled with the results of the relational

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[26] E.g., Randall Morck, Andrei Shleifer & Robert W. Vishny, Management Ownership and Corporate Performance: An Empirical Analysis, 20 J. Fin. Econ. 293 (1988); John J. McConnell & Henri Servaes, Additional Evidence on Equity Ownership and Corporate Value, 27 J. Fin. Econ. 595 (1990). There is some evidence of a similar nonlinear effect for dual class firms as well. Gompers et al., supra note 25. In part 3 infra, we discuss a serious methodological issue regarding these studies' tests, the endogeneity between inside ownership and the valuation measure used in the studies.

[27] Morck et al., supra note 26 (similar relation); McConnell & Servaes, supra note 26 (no relation). But in a study controlling for growth opportunities, McConnell and Servaes then find a similar nonlinear relation holds for outside as for inside blockholdings. John J. McConnell & Henri Servaes, Equity Ownership and the Two Faces of Debt, 39 J. Fin. Econ. 131 (1995).

[28] Sanjai Bhagat, Bernard S. Black & Margaret M. Blair, Relational Investing and Firm Performance, 27 J. Fin.. Res.1 (2004) (examining relational investing over the 13-year period 1983-95).

[29] For a literature review see, e.g., Gregg A. Jarrell, James A. Brickley & Jeffry M. Netter, The Market for Corporate Control: The Empirical Evidence Since 1980, 2 J. Econ. Persp. 49, 63 (Winter 1988) (results on block formation). These studies were of greenmail, the takeover defensive tactic in which corporations repurchase potential bidders' shares at a premium, not available to other shareholders, to thwart a hostile bid; the positive price effects upon the announcement of the formation of the

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investor study, in that, the blocks whose formation was under study in the former research were held by investors with reputations for engaging in hostile acquisitions. The source of the gains in both studies, accordingly, would appear to be related to the same phenomenon, corporate restructuring: in the case of block formations, market expectations of potential takeover premiums, which incorporate gains acquirers expect to recoup from restructuring; and in the case of relational investments, blockholders "encouraging restructuring that translated . . . into better stock market performance."[30]

The literature on the performance effects of insider stock ownership, particularly in relation to executive compensation, is less extensive than that on board composition. A few studies have found a positive price effect from the announcement of adoption of stock option compensation plans,[31] and other studies have found a positive relation between management compensation, particularly the equity component, and performance.[32] Studies of the impact of

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repurchased blocks outweighed the negative price effects upon the announcement of the blocks' repurchases.

[30] Bhagat et al., supra note 28, at 27.

[31] E.g., Richard A. DeFusco, Robert R. Johnson & Thoms S. Zorn, The Effect of Executive Stock Option Plans on Stockholders and Bondholders, 45 J. Fin. 617 (1990); Angela Morgan & Annette Poulsen, Linking Pay to Performance: Compensation Proposals in the S&P 500, 62 J. Fin. Econ. 489 (2001) (significant positive price effects, except for high dilution plans, where reaction insignificant). But see James A. Brickey, Sanjai Bhagat & Ronald C. Lease, The Impact of Long-range Managerial Compensation Plans on Shareholder Wealth, 7 J. Accounting & Econ. 115 (1985) (positive effect of long-term compensation plans but no significant reaction to plans with option component); Kenneth J. Martin & Randall S. Thomas, When is Enough, Enough? Market Reaction to Highly Dilutive Stock Option Plans and the Subsequent Impact on CEO Compensation, 11 J. Corp. Fin. 61 (2005) (insignificant stock price effects for full sample of plans, but significant negative reaction to plans with high levels of potential dilution).

[32] Hamid Mehran, Executive Compensation Structure, Ownership, and Firm Performance, 38 J. Fin. Econ. 163 (1995) (positive relation between performance and equity compensation); Kevin Murphy, Corporate Performance and Managerial Remuneration: An Empirical Analysis, 7 J. Acct & Econ. 11 (1985) (positive relation between performance and total compensation).

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director stock ownership similarly have ambiguous findings; in part the difference depends on the ownership calculation. While some studies find no significant relation between performance and ownership, calculated as the percentage of shares owned by outside directors,[33] Sanjai Bhagat and Brian Bolton find a significant positive relation, using as the governance measure, the dollar value of the stock ownership of the median director.[34] They provide two rationales for the merits of their ownership metric. First, it is theoretically consistent with the political economy literature that identifies the median voter as the key (marginal) decisionmaker. Second, it is a more plausible benchmark for measuring the incentive effects of ownership because directors, as economic agents, are more likely to focus on policies' impact on the dollar value of their holdings in the company rather than on their percentage ownership.[35]

There are self-evident concerns in undertaking policy recommendations from research examining the effect on performance of only one dimension of a firm's governance when governance mechanisms are numerous and interaction effects are quite probable. That is, no doubt, one of the principal explanations for the attention directed at governance indices, which combine multiple governance dimensions. We therefore turn now to review the literature on governance indices.

B. Aggregated Measures of Corporate Governance

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[33] E.g., Mehran, supra note 32.

[34] Sanjai Bhagat & Brian Bolton, Corporate Governance Indices, University of Colorado working paper (2007).

[35] Id. The incentive effect can be illustrated by the following simple example. Suppose that Director A owns .01% equity stake in a $10 billion company, while Director B owns 0.1% equity stake in a $100 million company. A's stake equates to a $1 million equity ownership, whereas B's stake equates to a $100,000 equity ownership. All other things being equal, A is likely to devote more time and attention to her board responsibilities than B.

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The corporate governance indices that are currently in use by academics and commercial vendors vary considerably with respect to which features of firms' corporate governance are deemed sufficiently important to be included. The initial foray into creating an index was an academic inquiry, but this line of research has morphed into commercial products that are marketed primarily to institutional investors seeking information about the quality of firms' corporate governance, as well as to firms wishing to signal governance quality to investors. Because our analysis of comparative performance of governance indices focuses on academic indices, we devote greater attention to those indices than to commercial products.

1. *Gompers, Ishii and Metrick "G" index*

The creation of corporate governance indices began with GIM's research, which was published in 2003 but widely circulated in 2001.[36] GIM constructed their index from data on the governance characteristics of over 1,000 firms, including most large public corporations (the Fortune 500 and Standard & Poor's 500), compiled by the Investor Responsibility Research Center (IRRC), a nonprofit research group that serves institutional investors. As IRRC's clients had become active in corporate governance in order to oppose takeover defenses in the 1980s, most of the governance features tracked by the IRRC are defensive tactics. These consist of 22 provisions in firms' corporate documents (17 of which are takeover-related) and six types of state takeover statutes; because of overlaps between tracked provisions and statutes, the number of distinct items is 24.[37] The firm-level provisions tend to cluster; that is, correlations across

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[36] Paul Gompers, Joy Ishii & Andrew Metrick, Corporate Governance and Equity Prices, 118 Q.J.Econ. 107 (2003).

[37] The specific provisions are identified in the Appendix. GIM note that they supplemented the IRRC firm-level data for coverage under takeover statutes with other sources on state statutes. Id. at 112-13. The publication years of IRRC governance data are 1990,1993, 1995 and 1998. Id. at 110. In the

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most of the 22 firm-level provisions are positive, and many significantly so.[38]

From these data, GIM construct a governance index that they consider to reflect the "balance of power between shareholders and managers."[39] Relying on the IRRC's judgment as to which corporate governance mechanisms investors consider to be important, for each firm they add up the number of provisions that the firm has of the 24 items, assigning one point for each provision that they view as restricting shareholder rights, and one point for the absence of either of two provisions that they view as constraining manager power and thereby enhancing shareholder rights. GIM thus equally weight the governance features tracked by IRRC in fashioning their measure of corporate governance quality. The sum of the components is the governance or "G" index.

GIM group sample firms into ten portfolios in relation to their "G" scores, approximating deciles of governance quality.[40] They then examine the relation between the firms' governance quality and several measures of performance: stock returns; Tobin's Q; and three accounting

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analysis relating governance to performance, because index values are not available for years when no data were collected, GIM only reset the governance portfolios in the four publication years, which is equivalent to using the values from the last available IRRC volume for the missing years. Id. at 124. The IRRC obtains the governance data from public information sources, such as SEC filings, and the number of firms covered increased over the period. Id. at 111.

[38] Of 231 total pairwise correlations, 169 are positive and of those 111 are significant, whereas only 9 of the remaining 62 negative correlations are significant. Id. at 111.

[39] Id. at 109.

[40] Although the G index has a potential range of 0 to 24, the actual range is from 2 to 17, with higher scores indicating lower quality. The "G" portfolio cutoffs are (i) less than 6 (the "Democracy" portfolio, consisting of firms with the strongest shareholder rights), (ii) 6 through 13, and (iii) greater than 13 (the "Dictatorship" portfolio, consisting of firms with the weakest shareholder rights). Id. at 115-16. We use the word "approximate" deciles because the number of firms in each of the ten portfolios is not identical. Both the mean and median G score are 9.

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measures, net profit margin, return on equity, and sales growth.[41] The examination of the relation between corporate governance and performance focuses on a comparison between the highest and lowest G-portfolios, which they call, respectively, the "Dictatorship" and "Democracy" portfolios. GIM find a significant relation between the governance index and stock returns and Tobin's Q: firms with the poorest corporate governance consistently underperform those with the best corporate governance. In particular, quantifying the effect, the impact of governance on performance appears to be substantial: an investment strategy of buying the Democracy portfolio stocks and selling the Dictatorship portfolio stocks would have earned abnormal returns of 8.5 percent a year or a one-point increase in G is associated with an 11.4 percent decrease in Tobin's Q by the end of the sample period.

The finding of a relation between the G index and subsequent performance does not, of itself, indicate that better corporate governance caused superior performance. GIM consider three possible explanations of their finding: (i) investors underestimated the cost of poor governance at the outset of the period under study (1990, the first year of the sample); (ii) managers expecting poor performance in the 1990s adopted governance devices in the 1980s that would restrict shareholder rights (i.e., features that GIM, along with the IRRC, consider to be poor corporate governance); or (iii) poor governance is correlated with other unspecified firm characteristics that cause the firms' subsequent abnormal performance in the 1990s. They attempt to test which hypothesis is correct, and find some evidence supporting the first

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[41] Stock returns are computed using a standard four-factor model that adjusts individual stock returns for market movements, size and market-to-book factor returns, and momentum effects. Tobin's Q is the ratio of a firm's market value to the replacement cost of its assets - in practice computed from book values; ratios greater than 1 suggest that a firm is generating excess profits, and therefore is a good performer. The computation of Tobin's Q and the accounting measures are industry-adjusted.

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hypothesis and the third (industry classification explains between one-sixth to one-third of the abnormal performance). They conclude with an appropriately cautionary statement regarding the use of the G index that calls for further study to determine which hypothesis is correct because of the hypotheses' "starkly different policy implications."

2. *Bebchuk, Cohen and Ferrell E Index*

Lucian Bebchuk, Alma Cohen and Allen Ferrell (BCF) advanced a competing governance index to the G index, one comprised of a subset of the factors comprising it.[42] Accepting as the most probable explanation of GIM's results that corporate governance positively affects performance, BCF sought to construct what they consider to be a better motivated index. To do this they selected six of the IRRC provisions concerning takeover defenses that they considered to be the most entrenching of managers, given their understanding of the operation of corporate law.[43] These include the combination of defenses that Bebchuk has emphasized as the most potent defense in work with others (poison pills and staggered boards),[44] and golden parachutes, a defense for which there is a scholarly literature disagreeing with BCF's view that it hinders, rather than encourages, hostile takeovers.[45] In construction of their index,

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[42] Lucian Ayre Bebchuk, Alma Cohen & Allen Ferrell, What Matters in Corporate Governance? (2005), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=593423.

[43] Id. at 7. The appendix contains the details of the six provisions.

[44] Lucian Bebchuk, John Coates IV and Guhan Subramanian, The Powerful Antitakeover Force of Staggered Boards: Theory, Evidence and Policy, 54 Stan. L. Rev. 887 (2002).

[45] See, e.g., David Baron, Tender Offers and Management Resistance, 38 J. Fin. 331 (1983); Marcel Kahan & Ed Rock, How I Learned to Stop Worrying and Love the Pill: Adaptive Responses to Takeover Law, 69 U. Chi. L. Rev. 871 (2002). The view that golden parachutes facilitate, rather than thwart hostile takeovers is supported by the event study literature: the adoption of golden parachutes produces significantly positive price effects, in contrast to other defenses. Richard Lambert & Donald Larcker, Golden Parachutes, Executive Decision-Making and Shareholder Wealth, 7 J. Accounting & Econ. 179 (1985).

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BCF follow GIM's approach, according equal weight (one point) to the presence of any of the six provisions. The index is called the "Entrenchment" or "E" index. BCF expect their index to outperform GIM's as a predictor of corporate performance, because it contains provisions that, in their view, are most likely to thwart a hostile takeover.[46]

The six provisions that BCF identify as most entrenching also turn out to be the only ones of the 24 components of the G index that are statistically significant in regressions on performance when the estimation is separately undertaken for each component. Accordingly, BCF conclude that the correlation between governance and performance in GIM's study is driven entirely by the subset of governance factors in the E index.

Examining the relation between the E index and industry-adjusted Tobin's Q and stock returns (the same performance measures as used by GIM but with a longer time frame of available data), BCF reconfirm the correlation between governance and future performance found in GIM's study. They also reconfirm GIM's finding that a portfolio of low entrenchment/good governance (GIM's Democracy) firms outperforms a portfolio of high entrenchment/poor governance (GIM's Dictatorship) firms.

BCF conclude that the E index is preferable as a measure of the quality of a firm's corporate governance to the G index. It is more parsimonious, better motivated and outperforms the G index. Although GIM's governance index has been extensively used in the academic literature while BCF's index has not, BCF's index has made some commercial inroads. Glass

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[46] Given the later date of their study, they have two additional years of IRRC governance data than GIM. For years when no IRRC volume was published, BCF equate firms' index value to the value from the last published volume, as do GIM. As BCF note, this assumes that firms' governance provisions are unchanged over the interval between IRRC publications, the practice adopted by GIM. Bebchuk et al., supra note 42.

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Lewis & Company, which provides research and advisory services to institutional investors, markets a governance ranking, termed the "Board Accountability Index," that is derived from BCF's research. It uses five of the six components of the E index, and markets that product as derived from the "fact" that "good governance can improve shareholder returns."[47] BCF are more cautious regarding the use of their results than Glass Lewis, however. They do not conclude that they have demonstrated causation; rather, they state that the evidence is "suggestive" that the set of entrenching governance provisions that they have identified effect performance.[48]

    3. *Brown and Caylor Gov-Score Index*

Lawrence Brown and Marcus Caylor created a more extensive governance index than the G and E indices, using firm-level governance information obtained from ISS.[49] Their index, which they call "Gov-Score," is a sum of 51 factors (of 61 factors and 3 combination measures

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[47] Glass Lewis describes its governance index, whose use it advocates for formulating an investment strategy, as follows:
    "Investing in companies with good governance can improve shareholder returns, as many have suspected for years. This is no longer just a matter of intuition. It's a fact. A study by Harvard Law School professor Lucian Bebchuk and his colleagues identified a statistically significant and strong correlation, over a long period of time, between stock performance and the degree to which boards are accountable to their shareholders. Based on this research, Professor Bebchuk and Dr. Cohen, in collaboration with Glass, Lewis & Co., have developed a governance-enhanced S&P 500 index, the Board Accountability Index (BAI). The BAI consists of all companies in the S&P 500. It uses a modified market-cap weighting algorithm that adjusts a company's weight based on the presence or absence of five critical corporate governance features identified in the study of Bebchuk, Cohen, and Ferrell."
The provision that it omits from the BCF index is a supermajority requirement (hence a restriction) on charter amendments. See http://www.glasslewis.com/solutions/bai.php.

[48] Bebchuk et al., supra note 42, at 40.

[49] Lawrence D. Brown & Marcus L. Caylor, Corporate Governance and Firm Valuation, 25 J. Acct & Pub. Policy 409 (2006).

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collected by ISS), nine of which are in the G index, and a tenth, incorporation in a state with a takeover statute, which is a composite of the four state takeover statute components of the G index.[50] Following BCF's refinement of the G Index, they also constructed a subindex "Gov-7," consisting of seven of the components in Gov-Score.[51]

The Gov-Score index has the potential advantage, recognized by its creators, of providing a superior measure of firms' governance quality because it includes a broader set of components of corporate governance than takeover defenses, which comprise the bulk of the G and E indices. It is also derived from a larger database than the other two indices (over 2,000 firms). But it does have a comparative disadvantage, that it is constructed from only one year of data, 2003 (the first year in which ISS began collecting the information), in contrast to the multiple years of IRRC data available for the G and E indices. On the other hand, because it is derived from 2003 data, it does measure firms' corporate governance in a post-Enron environment, in contrast to the other two indices, which makes analyses based on it arguably more relevant for current policy considerations.[52]

Brown and Caylor examine the relation between the Gov-Score and Tobin's Q, the one

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[50] Id. at 415 n.14. Gov-Score thus can range from 0 to 51, but as with the G index, the actual range, from 13 to 38, is substantially narrower than the theoretical range. The mean score of sample firms is 22.52, with a standard deviation of 3.45. Brown and Caylor use a point system that is the opposite of GIM and BCF, assigning one point to "good," as opposed to "poor," corporate governance practices, and consequently, a higher Gov-Score signifies higher quality corporate governance, in contrast to G and E index values. The appendix details the composition of the Gov-Score index.

0. The components in Gov-7 are identified empirically, from the factors that are most strongly correlated with performance. Two of the seven components are takeover defenses also in the G and E indices.

[52] The commercialization of governance ratings, discussed later in this section, has led both the IRRC and ISS to compile governance data more frequently: the IRRC data available online have been biennially updated, and the ISS data are annually updated, and have been backfilled for 2001, for its proprietary product.

of the two performance measures emphasized by GIM and BCF. They do not adjust performance by industry, as do GIM and BCF, nor do they examine stock returns. They find that Gov-Score is significantly positively related to Tobin's Q, that is, that superior performance is associated with higher quality governance.

One major difference between Brown and Caylor's findings and those of the other two studies is the relation between takeover defenses and performance. Brown and Caylor find that board and compensation factors in their index are more highly associated with good performance than most of the takeover defenses, which are the principal components of the G and E indices. They then disaggregate the index, and find that a subset of the 51 components drives the significant correlation between Gov-Score and Tobin's Q. Identifying seven elements as consistently significant, they use them to form the Gov-7 governance index, which they analogize to BCF's E index, as being a parsimonious subset of the larger related index. Because two components are in both the E-Index and Gov-7, they investigate which of the two indices has more predictive power: after eliminating the overlapping provisions, they find that Gov-7 still has explanatory power while the E-index does not.[53] Brown and Caylor are careful not to attribute causation to their findings in drawing conclusions from their results. But they do conclude that it is preferable to use as a measure of governance quality, a small subset of factors in an index that consists of more dimensions than takeover defenses.[54]

4. *Proprietary Governance Indices*

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[53] Brown & Caylor, supra note 49, at 427.

[54] In this regard they consider their work as confirming the finding in Cremers and Nair, discussed in part 3, infra, that it is a combination of internal governance and external governance mechanisms that relate governance to performance. Id. at 430.

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The commercial indices ranking public corporations' governance quality, which are provided by proxy advisory services,[55] differ distinctively from the academic ones on some dimensions. First, firms' scores on the proprietary indices do not consist of summations of equally-weighted factors. Rather, commercial index providers vary the weights accorded different governance factors, using either their discretion regarding the importance of the factor or quantitative analyses to determine the appropriate weights.[56] Second, commercial indices deemphasize takeover defenses, in contrast to the indices constructed by GIM and BCF.[57] Some do not even include defenses as a governance factor while those that include defenses place higher weights on the non-takeover-related factors (internal governance measures such as board and executive compensation attributes). Third, some commercial indices are relative rankings of firms in relation to other firms in their industry, market or geographic region, whereas the academic indices are absolute rankings of governance quality independent of the practices of

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[55] Commercial providers or proxy services whose governance measures are jointly summarized are ISS, Egan-Jones Proxy Services, GovernanceMetrics International and The Corporate Library (TCL). Details on the specifics of these governance indices are in the appendix. The proxy services offered by the firms vary, including research and recommendations on proxy voting, automated vote execution, recordkeeping and disclosure reporting for institutional investors. Some firms, and in particular the dominant market player, ISS, also provide governance and proxy consulting services to issuers.

[56] E.g., TCL's "Board effectiveness score" is a weighted average of seven governance components and an analyst adjustment that takes into account a personal assessment of governance quality, see http://www.thecorporatelibrary.com/special/misc/OfficeMax.pdf (hereafter TCL Rating Explanation); GovernanceMetrics' overall rating is derived from a sophisticated statistical algorithm assigning weights to various individual metrics in relation to other firms in its universe, see http://www.gmiratings.com/(hgwaa055h0jyiu55scbird45)/about.aspx#methodlogy; and ISS assigns weights to the components of its Corporate Governance Quotient as a function of their correlations with several measures of firm performance, see http://www.issproxy.com/pdf/CGQOverviewChanges.pdf (hereafter ISS Overview).

[57] Indeed, the governance index of the newest entrant into the market, Egan-Jones, does not even contain an express reference to takeover defenses. See http://www.ejproxy.com/about.aspx. Glass Lewis' index, which is derived from BCF's work and therefore not summarized in this section, is the one exception.

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comparable firms.[58] Finally, the leading provider by far of this type of service, ISS, updates the

factors in its index to capture trends in corporate governance. For example, it recently

incorporated two items that have become the focus of activist institutional investor attention:

majority voting for directors and option backdating, while eliminating option expensing (since

expensing is now required).[59]

The difference in index construction across academic and commercial creators can be

best explained as a function of expertise, which commercial providers believe they possess, and

a differing analytical approach to governance. The academic index constructors intentionally

sought not to make choices regarding the weights assigned to governance attributes and the

rationale for the financial economist-index creators is twofold: first, they do not hold themselves

out to be experts in assessing governance quality, compared to the vendors from which they

acquired the data; and second, there is an understandable desire to immunize their work from

potential charges of "stacking the deck" for favorable results, compared to what would appear to

be a more plausibly neutral approach, equal weighting of a large number of attributes identified

by third-party governance experts. By contrast, commercial vendors are actively marketing

governance expertise and therefore would be expected to exercise judgment on the weights

accorded to the different components of an index as well as across firms.

Expertise is, in fact, a differentiating marketing strategy used by The Corporate Library

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[58] This is true of the ratings provided by GovernanceMetrics and ISS.

[59] Institutional Shareholder Services Releases New CGQ Ratings Criteria, ISSmarketing@proxy.com (Nov. 13, 2006). The constant tweaking of the index could explain why ISS' website discussion of the "performance metrics" used to determine the weights in the corporate governance quotient suggests that many of the correlations between its' index's components and firm performance measures are high, see ISS Overview, supra note 55, in contrast to Brown and Caylor's finding that only a few of the ISS attributes were highly correlated with their performance measures, see note 49, supra.

(TCL). TCL provides both a board effectiveness rating (a governance quality assessment that

follows a proprietary formula along the lines of the principles noted above, with varying weights

that are higher for internal governance features and a discretionary component) and a compliance

rating (constructed along the lines of academic indices by tallying the presence or absence of

numerous specified good governance factors). But it contends that the effectiveness rating is the

preferred metric for assessing quality, and discourages use of the compliance rating for that

purpose (which rating is provided for comparative purposes, to "evaluate compliance with

traditional measures of corporate governance" and which is not factored into the board

effectiveness rating).[60] TCL faults the compliance rating for being a "best practices list" that

takes a "one-size-fits-all approach" to governance, an approach that in its judgment is too limited

to measure the quality of a firm's governance.[61]

C. Single Governance Mechanisms versus Indices as a Measure of Governance Quality

The dominant approach to evaluating the quality of a firm's corporate governance today

is to construct an index comprised of multiple dimensions of a firm's governance structure. The

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[60] TCL Rating Explanation, supra note 55, at 29.

[61] See id. at 8. TCL provides as evidence of the superiority of its effectiveness rating over the best practices approach that informs the academic indices' construction that the Enron corporation received a low effectiveness rating but a high compliance rating. Id. at 29. Paul Rose, who agrees with the concern expressed by TCL that good corporate governance is not served by forcing uniformity in firms' governance practices -- as occurs when a governance quality metric depends on the presence of a set of specific governance mechanisms -- considers the subjectivity of TCL's effectiveness ranking to be one of its more attractive features, compared to the "objective" quantitative approach of other indices. See e.g., Rose, supra note 4. Rose further suggests a subtle explanation for the difference between TCL's subjective approach to governance and other commercially provided measures' more objective, checklist approach: the fact that TCL does not offer consulting services to corporations and the other vendors (such as Glass Lewis and ISS) do. In his view, commercial vendors opt for an objective ranking in order to mitigate the potential conflict of interest in providing both ranking and consulting services, since by using objective criteria, it could be easier to support the "claim that [the] governance analysis is not affected by the provision of other services." Id. at 907.

endeavor is thought by many of its proponents to be of utmost importance, grounded in the belief that corporate performance is a function of good governance. Some governance scholars, however, consider specific board characteristics to be the critical determinants of corporate governance,[62] and board factors are emphasized by the providers of commercial indices over the takeover-related governance factors emphasized in most academic indices. This raises the fundamental question whether a single board characteristic could be as effective a measure of corporate governance as indices that consider multiple measures of corporate charter provisions and board characteristics? While this is ultimately an empirical question, it is plausible on both theoretical and methodological grounds for a single board characteristic to be superior or as effective a measure of corporate governance as an index. If a single board characteristic could dominate an index as a proxy for good governance, then it could be useful for predicting performance.

Under what theory of the firm could one characteristic be preferred to many to describe a firm's quality of governance? Corporate law provides the board of directors with the authority to make, or at least ratify, all important firm decisions, including decisions about investment policy, management compensation policy, and board governance itself. The board's pivotal role suggests focusing on its attributes in order to identify a single governance variable that might serve as an alternative to an index. It is theoretically possible, and intuitively plausible, that an independent board, or board members with stock ownership, will have adequate incentives to

provide effective oversight of important corporate decisions and monitoring of management action implementing those decisions.[63] Accordingly, board independence or outside board members' stock ownership are excellent candidates for a single characteristic that could best an index as a proxy for overall good governance.

Evaluating the quality of a firm's governance from a single board characteristic rather than a multi-factor index might be justified on econometric grounds as well. The measurement error in computing a single variable such as a board's stock ownership, for instance, might well be lower than that of an index, which requires accurate identification of a multitude of board processes, executive compensation practices, and firm charter and bylaw provisions. Namely, the more numerous the attributes of governance that must be tracked to identify the quality of a firm's governance, the greater the possibility of error in recording the value of any one component and hence, in measuring overall quality. And the greater the imprecision in the calculation of the proxy for firms' governance quality, the higher the probability that the statistical analysis of the relation between governance and performance will be misspecified.

This is not to say that there are no analytical problems presented by single governance variables. There are. For example, the independence of the board is conventionally identified by the proportion of directors who are neither employed nor affiliated (i.e., have material relations) with a firm, but there are data indicating that not all such independent directors are

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[62] Bhagat & Bolton, supra note 34 (directors' stock ownership); James A. Brickley, Jeffrey L. Coles & Gregg Jarrell, Leadership Structure; Separating the CEO and Chairman of the Board, 3 J. Corp. Fin. 189 (1997) (board duality, which refers to the positions of CEO and chairman being occupied by different individuals); Benjamin E. Hermalin & Michael S. Weisbach, Boards of Directors as an Endogenously Determined Institution: A Survey of the Economic Evidence 9 Econ. Policy Rev. 7 (2003) (director independence).

[63] For economic models in which outside directors have incentives to build reputations as expert monitors see Eugene Fama Agency Problems and the Theory of the Firm, 88 J. Pol. Econ. 288 (1980); Eugene Fama & Michael Jensen, Separation of Ownership and Control, 26 J. Law & Econ. 301 (1983). The legal literature has long held this view of independent directors, e.g. Melvin A. Eisenberg, The Structure of the Corporation (1976), and of the incentives provided by directors' stock ownership, e.g., Charles M. Elson, The Duty of Care, Compensation and Stock Ownership, 63 U. Cin. L. Rev. 649 (1995). For an economic model that suggests that equity compensation for outside directors will increase board monitoring see Benjamin E. Hermalin & Michael S. Weisbach, Endogenously Chosen Boards of Directors and Their Monitoring of the CEO, 88 Amer. Econ. Rev. 96 , 111 (1998).

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equal with respect to monitoring effectiveness, findings suggesting that using board

independence alone as a proxy for governance may result in misspecification of statistical

analyses.[64] Rather, we simply think that the identification and measurement problems are even

more problematic with respect to indices.

For instance, construction of an index requires that all of the variables in the index be

weighted. The weights a particular index assigns to individual board characteristics and other

governance features are critical. If the weights are not consistent with the weights used by

market participants in assessing the relation between governance and firm performance, then

incorrect inferences would be drawn regarding the relation between governance and firm

performance, even if the governance components in the index are correctly measured.

A further critical problem with a weighting system for an index of governance quality is

that good governance features may well be substitutes and the interactions may also be complex

and subtle. If that is the case, then it would be incorrect to treat them as complements, as is the

effect of assigning positive weights to all of the good governance attributes of an index -- the

approach of the academic indices – and such an index ranking will provide an inaccurate

measure of the relative quality of firms' governance. Although hardly any modeling of

corporate governance has been undertaken, so that there is no satisfactory theory of when or

whether different aspects of good governance should be understood to be substitutes or

complements,[65] empirical research indicates that at least several such mechanisms are, in fact,

substitutes. This finding severely complicates an assessment of good governance practices using

a simply constructed index.[66]

In particular, in an important recent paper, Stuart Gillan, Jay Hartzell and Laura Starks

(GHS) find that measures of high quality internal and external governance are inversely

correlated.[67] GHS examined the corporate governance features of over 2,000 firms from 1997-

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[64] See, e.g., Eliezer M. Fich & Anil Shivdasani, Are Busy Boards Effective Monitors?, 61 J. Fin. 689 (2006) (finding less monitoring by boards with a majority of independent directors who serve on multiple boards, since CEO turnover following poor performance with such boards is indistinguishable from that for insider-dominated boards, in contrast to prior research finding majority independent director boards were more likely to replace CEOs of poorly performing firms than insider boards), and the following studies, among others, that find that with respect to audit committee composition, it is not director independence, but independent directors with appropriate financial accounting expertise, that improves firm value, e.g., Mark L. DeFond, Rebecca N. Hann & Zuesong Hu, Does the Market Value Financial Expertise on Audit Committees of Boards of Directors? 43 J. Accounting Res. 153 (2005); Andrew J. Felo, Srinivasan Krishnamurthy & Steven A. Solieri, Audit Committee Characteristics and the Perceived Quality of Financial Reporting: An Empirical Analysis (2003); Roman L. Weil, Douglas J. Coates & M. Laurentius Marais, Audit Committee Financial Literacy: A Work in Progress, CRSP Working Paper no. 605 (2005). Similarly, computation questions can arise for another governance variable that is often investigated singly, equity ownership of management. Whether the relevant ownership for incentive purposes is the percentage of outstanding shares or the dollar value of the shares held by the manager depends on how the manager's actions that outsiders cannot monitor are expected to affect firm value. John E. Core, Wayne R. Guay & David F. Larcker, Executive Equity Compensation and Incentives: A Survey, 9 F.R.B.N.Y. Econ. Policy Rev 27, 31 (2003).

[65] For example, comprehensive reviews of key governance mechanisms -- boards of directors and outside blockholders -- emphasize that the theoretical modeling of these devices is extremely limited to nonexistent. See Benjamin E. Hermalin & Michael S. Weisbach, Boards of Directors as an Endogenously Determined Institution: A Survey of the Economic Literature, 9 F.R.B.N.Y. Econ. Policy Rev. 7 (2003); Clifford G. Holderness, A Survey of Blockholders and Corporate Control, 9 F.R.B.N.Y. Econ. Policy Rev. 51 (2003).

[66] If the multiple dimensions of governance the indices seek to capture cannot be combined into a single dimension, then regardless of measurement issues, an index will not fare better than a single governance device in predicting performance because the index is, of course a one dimensional construct. We thank Jeff Strnad for suggesting this point. David Larcker, Scott Richadson and Irem Tuna analyze the relation between governance and accounting performance by a principal components analysis that collapses 39 governance devices into 14 dimensions. David F. Larcker, Scott A. Richardson & Irem Tuna, Corporate Governance, Accounting Outcomes, and Organizational Performance, 82 Acct. Rev. 963 (2007). The large number of factors that remain in their analysis could suggest that it may not be possible to construct a one-dimensional governance index that has predictive power. However, most of the 14 factors are not significantly related to the accounting measures they examine, a finding that might suggest that the desire for parsimony and ease of comparability across firms that underlies the effort to create governance indices that collapse multiple dimensions into one may not be entirely off the mark.

[67] Stuart Gillan, Jay Hartzell & Laura Starks, Tradeoffs in Corporate Governance: Evidence form Board Structure and Charter Provisions (manuscript 2006), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=917544. As they note, most studies of corporate governance investigate a single governance mechanism and do not examine the interaction of different

2000 to investigate the relation between board attributes and charter provisions relating to takeover defenses, which comprise the G and E indices. Their aim was to determine whether a strong independent board is a substitute or complement for the external governance of the market for corporate control. If firms with independent boards adopt few defenses (have low G values), then internal and external governance mechanisms are functioning as complements, whereas if firms with such boards adopt many defenses (have high G values), then the mechanisms are substitutes.

In addition to univariate comparisons of board features with defenses, GHS use two statistical techniques to determine the clustering of different attributes of boards that relate to their independence, such as composition, size, committee characteristics, and separation of the positions of CEO and board chairman, in relation to defenses.[68] No matter which methodology

devices. Id. at 4. A few other papers also find different attributes of good governance are substitutes, e.g., Mehran, supra note 34 (finding blockholding substitutes for use of executive incentive compensation); David Mayers, Anil Shivdasani & Clifford W. Smith, Jr. Board Composition and Corporate Control, Evidence from the Insurance Industry, 70 J. Bus. 33 (1997) (finding mutuals employ more outside directors than stock insurance companies, consistent with independent boards being substitutes for market for control); Morris G. Danielson & Jonathan M. Karpoff, On the Uses of Corporate Governance Provisions, 4 J. Corp. Fin. 347 (1998) (finding firms with poison pills have low inside ownership, high institutional ownership and high proportion of outside directors). We only discuss the Gillan, Hartzell & Starks (GHS) paper in the text not only because it is the most recent but also because it is the most comprehensive, with the largest data set, and the most closely related to our concerns. GHS examine the interaction of the G index with governance variables not included in it, while undertaking extensive statistical analyses, including a simultaneous equations estimation that addresses the methodological concerns with the index literature that we discuss in part 3.B. concerning the endogeneity of governance choices. Larcker, Richardson and Tuma, supra note 66, find that the underlying governance components do not always load with the same sign on the 14 governance factors that they identify in their data, providing additional support for the contention that governance mechanisms are sometimes substitutes rather than complements.

[68]The two techniques identify commonalities across firms' governance characteristics: a cluster analysis that groups firms by their board and charter choices (so that within each four groups of sample firms the homogeneity of governance is maximized while across the groups heterogeneity is maximized) and a principal components analysis that groups board governance attributes into summary structure measures, whose relation to the G index across firms is then explored. Gillan et al., supra note 67, at 13, 19-20.

employed, they find that the strength of the independence of the board is positively correlated with the number of defenses (high G index values), that is, internal and external governance mechanisms are substitutes. They further find that such correlated sets of governance features are correlated with other characteristics of firms (such as firm age, institutional ownership, R&D expenditures, tangible assets, capital expenditures). Thus, a conventional metric of good corporate governance – independent boards -- is associated with a conventional measure of poor corporate governance – entrenched management -- as well as the specifics of firms' operating environment. These associations strongly suggest that evaluating firms according to how they do with respect to a specific governance index is problematic and likely to produce an inaccurate understanding of the operation of corporate governance mechanisms. Governance choices vary with specific characteristics of firms, and high quality governance on one dimension may offset a need for what are conventionally thought to be best practices on another governance dimension.

3. Is there a Relation between Governance and Performance?

Although the development of academic governance indices has given vitality to, if not sparked, the flourishing of a commercial market for indices, the academic literature which introduced indices has not satisfactorily answered the question whether there is a causal relation between governance and performance. Namely, although GIM, BCF and Brown and Caylor find positive associations with their indices' rankings of firms' governance quality and performance, correlations are, obviously, not causation, and subsequent work has even questioned whether a positive association truly exists. After reviewing key research that indicates the findings associating governance quality as measured by the academic indices with performance are not robust, we discuss econometric issues that complicate investigation of the relation between

governance and performance. We then summarize the findings of a study by two of us that shows that when those econometric issues are addressed, the relative performance of governance indices is not always superior to single governance variables in predicting corporate performance.

A. Robustness of the Relation Identified by Academic Index Creators

GIM's findings of a significant correlation between governance and performance attracted a great deal of attention,[69] at least in part because the overwhelming balance of the literature on individual governance characteristics up to then did not find a systematic relationship with performance. In addition, it appeared as though one could make money by trading on firms' publicly-disclosed governance characteristics, which would be inconsistent with market efficiency, a central concern of financial economics. Not surprisingly, financial economists sought to test the robustness of GIM's finding and of their explanation of the data. Several of these studies found that the relation and the explanation do not hold up when more closely examined. We review three of the more important studies, to convey a sense of the fragility of GIM's (and their progeny's) findings of a significant connection between governance indices and performance, and consequently, to inject an element of realism into policy discussions relating to the adoption of an index-like approach to corporate governance regulation or investment decisionmaking.

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[69] For example, although published in 2003, the article had already been cited in 50 articles in the Social Sciences Research database within three years (searched in Westlaw on June 3, 2006), and that number doubled to 104 articles 16 months later (searched in the ISI Web of Science on October 3, 2007). Another measure that it continues to be read besides the increasing rate of citation over the past year is its position on the SSRN electronic database. As of October 3, 2007, it had over 6,000 downloads and is the 63rd most downloaded paper (of over 129,000 papers available for downloading); 16 months earlier, it ranked 113th with over 4,000 downloads. The article also was awarded the 2002 Geewax, Terker & Company Prize in Investment Research for the best working paper by the Rodney L. White Center for Financial Research at the Wharton School of the University of Pennsylvania.

1. *Lehn, Patro and Zhao: Causation runs from performance to governance*

Kenneth Lehn, Sukesh Patro and Mengxin Zhao investigated the issue of causality concerning GIM's finding of a correlation between governance and performance, by examining the relation between firms' performance in the 1980s, a period before the takeover defenses comprising the G index were adopted, and performance in the 1990s, the period of performance that GIM find is correlated with the G index.[70] The idea is that because governance mechanisms preventing takeovers were not in place in the early 1980s, valuation measures from that time period could not be affected by those governance devices.

Lehn et al. find that after controlling for performance in the 1980s, the relation between governance and Tobin's Q in the 1990s identified by GIM disappears. The 1980s valuations are correlated with both the 1990s governance measures and valuation. Moreover, a regression to explain the G index is run on both lagged and leading values of Tobin's Q, and the lagged valuations from the 1980s explain the governance rating but the lead valuations from the 1990s do not. These findings are replicated if they use BCF's E index instead of the G index.

Lehn et al. interpret the data as supporting the hypothesis that causation runs from performance to governance, and not the other way around. Namely, firms with low valuations (poor performers) in the early 1980s adopted defensive tactics in the late 1980s, and continued to have low valuations thereafter in the 1990s.[71] They suggest two possible explanations for the association: low valued firms may be poorly managed and therefore more likely to become

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[70] Kenneth Lehn, Sukesh Patro & Mengxin Zhao, Governance Indices and Valuation: Which Causes Which? (2006), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=810944

[71] Id. at 12. This is the hypothesis that GIM rejected of the three hypotheses that they proposed to explain their data.

takeover targets, or low valued firms have fewer growth opportunities than other firms, and low growth firms may be more likely to become takeover targets than other firms. In either scenario, the low-valued firms would be more likely to adopt takeover defenses, which would affect the value of the G index, as opposed to an explanation working the other way around, from G index to performance.

2. *Core, Guay and Rusticus: Market anticipation of relation between governance and performance*

John Core, Wayne Guay and Tjomme Rusticus also question GIM's explanation of their findings and the issue of causation.[72] Core et al. investigated what they consider a puzzle in GIM's study, the finding of a significant relation between governance and performance as measured by stock returns but not by accounting earnings. They hypothesize that if the explanation for the findings is, as GIM suggest, that investors misperceived the relation between governance and performance at the start of the period under study, then the market should be surprised if earnings are higher (lower) than expected for good (poor) governance firms or if takeover probabilities are higher (lower) than expected for good (poor) governance firms.

Using operating return on assets, which Core et al. note the accounting literature considers to be the "more powerful measure" of operating performance,[73] rather than GIM's accounting measure of return on equity, they document a significant negative relation between

operating performance and the G index, in contrast to GIM.[74] Next, to determine whether the abnormal stock returns are due to investor surprise that firms with poor governance have lower performance, they examine the relation between the G index and analyst forecasts as well as earnings announcements. The hypothesis is that if investors misunderstand the effect of governance on performance, then they will be surprised when the earnings of poorly (well) governed firms are low (high) relative to forecasted earnings. Over a variety of intervals (one quarter to five years), they find that analysts' forecasts predict the poor performance of high G index (poor governance) firms.[75] They also find no difference in stock returns surrounding earnings announcements of both poor and well governed firms (low and high G index firms).[76] These results suggest, Core et al. contend, that neither analysts nor investors are surprised by the performance of firms in relation to their governance. They are therefore disconfirming the investor misperception hypothesis suggested by GIM in explanation of their data.

Core et al. further conclude that differences in the probability of takeover, based on completed takeovers for their sample firms, do not explain the abnormal returns in GIM's study across the two extreme G index portfolios (the Democracy and Dictatorship portfolios). In fact, the Dictatorship portfolio firms have a higher takeover probability in the mid 1990s than the Democracy portfolio firms, which have a higher takeover probability in the early and late 1990s.[77] Moreover, the differences in annualized probabilities over the entire period are too small to explain the difference in abnormal returns that GIM report. Lastly, eliminating the

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[72] John E. Core, Wayne R. Guay & Tjomme O. Rusticus, Does Weak Governance Cause Weak Stock Returns? An Examination of Firm Operating Performance and Investors' Expectations, 61 J. Fin. 655 (2006).

[73] Id. at 656.

[74] Id. at 668.

[75] Id. at 671.

[76] Id. at 674-76.

[77] Id. at 677.

acquired firms from the analysis does not eliminate the return differential across the two

portfolios.

What do they propose, then, as the explanation? They provide data suggesting that the

GIM result might be time-specific. In examining the returns on the investment strategy hedging

the two extreme portfolios (shorting the poor governance firms and buying the good governance

ones) both over the period studied by GIM (1990s) and four subsequent years (2000-04), they

find that all of the significant abnormal returns to the trading strategy occur from 1997-99, and

that the relation does not hold up in the later interval, 2000-04. In fact, the value of the hedge

portfolio sharply declines in that period (compared to its increase in GIM's period of study).

This is because the returns to the Democracy portfolio (good governance firms) decreased in the

four later years. Core et al. therefore conclude that the data do not support the hypothesis that

poor (good) governance causes poor (good) performance.[78]

3. *Cremers and Nair: Effect of interaction of governance mechanisms on performance*

Finally, Martijn Cremers and Vinay Nair also find that the relation between the G index

and performance is not robust. They study the relation between the G index, which they

emphasize is a score of external governance mechanisms (exposure to the market for corporate

control) and internal governance represented by institutional block ownership, building on the

governance literature that considers blockholding to be an important monitoring mechanism.[79]

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[78] Id. at 685.

[79] K. J. Martijn Cremers & Vinay B. Nair, Governance Mechanisms and Equity Prices, 60 J. Fin. 2859 (2005). Block ownership is measured as either the percentage of shares held by the largest institutional blockholder, or the percentage of shares held by public pension funds considered to be activist investors. They also construct an alternative takeover index ("ATI") that consists of a subset of G index factors that are the takeover defenses they consider the more effective mechanisms for preventing hostile bids from their reading of the legal literature (blank check preferred, staggered boards, and either restrictions on shareholders' right to call shareholder meetings or to act by written consent), in order to

They construct portfolios of firms sorted according to their rank on the G index as well as their

rank with regard to block ownership, and examine the relationship between firms' governance

and their performance. Cremers and Nair find that the relation between governance and

performance identified by GIM is no longer independently significant when the internal

governance variable related to block ownership is included in the analysis.

In particular, they find that neither governance mechanism alone affects performance but

specific combinations do, an interaction effect implying that the mechanisms are complements

not substitutes.[80] Namely, blockholder ownership is important only for firms without takeover

defenses (lowest quartile G index firms), and the absence of takeover defenses is important only

for firms with an active blockholder (highest quartile of block ownership); those complementary

portfolios are the only portfolios that can be used to create trading strategies that generate

abnormal profits. With more years of performance data, in contrast to GIM, they find no effect

on performance from takeover defenses alone (the G index), and conclude that both forms of

corporate governance matter for future performance.

They consider several explanations for their finding in addition to the investor learning

explanation offered by GIM, that investors did not understand the impact of corporate

governance in 1990, at the outset of their data period. The alternatives include whether the

trading strategy's abnormal returns are (i) unrelated to fundamental performance and instead

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minimize any concern that the G index is not properly characterized as solely proxying for external governance. The results are unchanged when firms are ranked by the ATI index rather than the G index.

[80] It should be recalled that as discussed in the text and accompanying note 67 supra, GHS find that a different internal governance mechanism, the board of directors, substitutes for the market for control, as opposed to the internal governance device examined by Cremers and Nair and found to be a complement, institutional blockholding.

derived from the market's view of corporate governance; (ii) due to abnormal returns accruing to future targets or acquirers on the acquisition announcement dates; (iii) or the premium associated with an omitted risk factor that may or may not be related to governance.[81] To test these hypotheses, they examine the relation between their two governance variables and other performance measures (accounting measures and Tobin's Q). The findings using the accounting measures duplicate those for stock returns, which they view as inconsistent with the first alternative, that governance is unrelated to changes in performance, although they note that this does not demonstrate causality. They also reject the second hypothesis because when targets and acquirers are removed from the portfolios the findings are unchanged.

The results involving Tobin's Q are somewhat different. While they find that firms with only one high quality governance mechanism (high block ownership or low takeover defenses) do not exhibit abnormal stock returns, they find that those firms have higher Tobin's Q valuations. Cremers and Nair interpret these findings as evidence that investors "price the importance of individual governance mechanisms correctly," and hence as the explanation for why there are no abnormal returns.[82] Considering the findings regarding trading strategies of the complementary portfolios and the Tobin's Q valuations, they winnow down the plausible explanations of the data to two, GIM's learning hypothesis, or the third alternative involving unspecified risk factors. To shed some light on which alternative hypothesis might be correct, they examine the relation between the different combinations of governance portfolios and the variability of performance, as a proxy for risk. They find that the complementary portfolios

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[81] Id. at 2883-89.

[82] Id. at 2889.

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(those comprised of firms with high quality governance on both dimensions) are indeed associated with more variable performance measures than portfolios where only one such mechanism of good governance is present.[83]

Cremers and Nair interpret these data as providing support for the omitted risk factor explanation of their results, that is, that the abnormal returns from trading on the governance portfolios are an artifact of the higher discount rate investors applied to these firms because of their greater risk. They conclude that it is the combination of the quality of a firm's internal and external governance devices that is associated with superior performance, and not a firms' defenses alone (what GIM's and BCF's indices measure), a finding, as previously noted, replicated in Caylor and Brown's comparative analysis of the Gov-Score and Gov-7 indices.

B. Econometric Issues: Performance and Governance are Endogenous

A core and knotty econometric problem in the literature examining the relation between governance quality and performance is that the two are not independent. Some governance features may be motivated by incentive-based economic models of managerial behavior, which also affect performance. Broadly speaking, these models fall into two categories, agency (also referred to as moral hazard) and adverse selection models. In agency models, a divergence in the interests of managers and shareholders causes managers to take actions that are costly to shareholders. Such actions are most often characterized as the consumption of perquisites on the job (such as lavish office equipment), but also refer to other means by which managers may exercise discretion to benefit themselves at the shareholders' expense, such as shirking (lack of effort) or selecting inferior projects from among those available (i.e., projects with too little

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[83] Id. at 2888-89.

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risk). Contracts cannot preclude this activity if shareholders are unable to observe managerial behavior directly, but ownership by the manager may be used to induce managers to act in a manner that is consistent with the interest of shareholders.[84]

Adverse selection models are motivated by the hypothesis of differential ability across managers that cannot be observed by shareholders. In this setting, ownership may be used to induce revelation of the manager's private information about cash flow or her ability to generate cash flow, which the shareholders cannot observe. Performance provides information to the principal about the ability of the manager, and is therefore reflected in managerial payoffs, which may include dismissal for poor performance.[85]

In both settings, a manager has information that shareholders do not possess, although shareholders are aware of their informational disadvantage. The contracting problem, similarly, is to write a contract that mitigates the information asymmetry. In either of the two scenarios, some features of corporate governance may be interpreted as a characteristic of the contract governing shareholder-manager relations. Governance is affected by the same unobservable features of managerial behavior or ability that are linked to ownership and performance; it is in this sense that governance and performance are endogenous. Different statistical techniques are necessary to analyze the relation between governance and performance if the variables are endogenously related, than if they are exogenous (that is, than if the relation is one-way, with

governance affecting performance, and not bi-directional), the shared assumption of the literature on governance indices that we have reviewed.

In order to lay out the alternative methodology, we need to better specify the potential two-way relationships between different governance attributes, firm characteristics and performance. At least since Adolph Berle and Gardiner Means' classic 1932 work identifying the potential agency problem in U.S. public corporations, economists have emphasized the costs of diffused share ownership; that is, the impact of ownership structure on performance.[86] But as Harold Demsetz argues, because we observe many successful public companies with diffused share ownership, clearly there must be offsetting benefits, such as, better risk-bearing, rendering it difficult to assert that concentrated ownership should be positively associated with performance.[87] Moreover, performance could determine ownership for reasons related to performance-based compensation and insider information. For example, superior firm performance leads to an increase in the value of stock options owned by management which, if exercised, would increase their share ownership. Further, if there are serious divergences between insider and market expectations of future firm performance then insiders have an incentive to adjust their ownership in relation to the expected future performance. Finally, Charles Himmelberg, Glenn Hubbard and Darius Palia contend that ownership structure may be endogenously determined by the firm's contracting environment which differs across firms in

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[84] For a classic discussion of the agency problem see Sanford Grossman & Oliver D. Hart, An Analysis of the Principal-Agent Problem, 51 Econometrica 7 (1983).

[85] For a classic treatment of the adverse selection problem see Roger Myerson, Incentive Compatibility and the Bargaining Problem, 47 Econometrica 61 (1987).

[86] Adolph A. Berle & Gardiner Means, The Modern Corporation and Private Property (1932).

[87] Harold Demsetz, The Structure of Ownership and the Theory of the Firm, 26 J. Law & Econ. 375 (1983). Investors' preference for liquidity would lead to smaller blockholdings given that larger blocks are less liquid in the secondary market. In addition, the public policy bias in the U.S. towards protecting minority shareholder rights increases the costs of holding large blocks. See Bernard Black, Shareholder Passivity Reexamined, 89 Mich. Law Rev. 2550 (1990); Mark J. Roe, Strong Managers, Weak Owners: The Political Roots of American Corporate Finance (1994).

observable and unobservable ways. [88] For example, if the scope for perquisite consumption is low in a firm then a low level of management ownership may be the optimal incentive contract.

In addition to ownership, leverage (debt in the capital structure) is a firm characteristic, related to governance in the form of monitoring by creditors,[89] that may be endogenously determined with performance. In a seminal paper, Sanford Grossman and Oliver Hart considered the ex ante efficiency perspective to derive predictions about a firm's financing decisions in an agency setting.[90] An initial entrepreneur seeks to maximize firm value with some disciplinary mechanism forcing the entrepreneur to choose the value-maximizing level of debt. Extending that idea, Walter Novaes and Luigi Zingales show that the optimal choice of debt from the viewpoint of shareholders differs from the optimal choice of debt from the managers' perspective.[91]

The conflict of interest between managers and shareholders over financing policy arises because of three reasons. First, shareholders are much better diversified than managers who

besides having stock and stock options on the firm have their human capital tied to the firm.[92] Second, as suggested by Michael Jensen, a larger level of debt pre-commits the manager to working harder to generate and pay off the firm's cash flows to outside investors.[93] Third, Milton Harris and Artur Raviv and Rene Stulz hypothesize that managers may increase leverage beyond what might be implied by some "optimal capital structure" in order to increase the voting power of their equity stakes, and thereby reduce the likelihood of a takeover and the resulting possible loss of employment.[94]

While the above research focuses on capital structure and managerial entrenchment, a different strand of the literature has focused on the relation between ownership and capital structure. Grossman and Hart and Oliver Hart and John Moore consider an incomplete contracting environment – where it is difficult to specify all possible future states of nature and relevant decisions in a contract that can be enforced in a court.[95] In such an incomplete contracting environment, the allocation to management of control rights through stock ownership, rather than provision of contractual payments under compensation agreements, can be used to provide incentives to the managers to make necessary investments (such as investing in firm-specific human capital) that maximize the value of the firm.

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[88] Charles P. Himmelberg, R.Glenn Hubbard & Darius Palia, Understanding the Determinants of Managerial Ownership and the Link between Ownership and Performance, 53 J. Fin. Econ. 353 (1999). The endogeneity of management ownership has also been noted by many others. E.g., Michael Jensen & Jerold B. Warner, The Distribution of Power among Corporate Managers, Shareholders and Directors, 20 J. Fin. Econ. 3 (1988).

[89] Michael Jensen provides another explanation of how debt reduces agency problems: because it must be repaid to avoid the threat of bankruptcy and loss of control of the firm, debt reduces free cash flow – cash in excess of the projects available to the firm that generate positive net present value transactions -- that managers would otherwise waste on negative present value projects rather than return to shareholders, as they would prefer. Michael C. Jensen, Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers, 76 Amer. Econ. Rev. 323 (1986).

[90] Grossman & Hart, supra note 84.

[91] Walter Novaes & Luigi Zingales, Capital Structure Choice under a Takeover Threat, University of Chicago working paper (1999).

[92] Eugene F. Fama, Agency Problems and the Theory of the Firm, 88 J. Pol. Econ. 288 (1980).

[93] Jensen, supra note 89.

[94] Milton Harris & Artur Raviv, Corporate Control Contests and Capital Structure, 20 J. Fin. Econ. 55 (1988); Rene M Stulz, Managerial Control of Voting Rights: Financing Policies and the Market for Corporate Control, 20 J. Fin. Econ. 25 (1988).

[95] Sanford Grossman & Oliver D. Hart, The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration, 94 J. Pol. Econ. 691 (1986); Oliver D. Hart & John Moore, Property Rights and the Theory of the Firm, 98 J. Pol. Econ. 1119 (1990).

This brief overview of the inter-relationships among corporate governance, including capital and ownership structure, and corporate performance, suggests that, from an econometric viewpoint, to study the relationship between corporate governance and performance, one would need to formulate a system of simultaneous equations that specifies the relationships among the above mentioned variables. In recent work, two of us have specified and estimated the following system of four simultaneous equations that capture the interrelationships among these variables that have been proposed in the literature:[96]

$$\text{Performance} = f_1(\text{Ownership, Governance, Capital Structure}, Z_1, \varepsilon_1), \qquad (1a)$$

$$\text{Governance} = f_2(\text{Performance, Ownership, Capital Structure}, Z_2, \varepsilon_2), \qquad (1b)$$

$$\text{Ownership} = f_3(\text{Governance, Performance, Capital Structure}, Z_3, \varepsilon_3), \qquad (1c)$$

$$\text{Capital Structure} = f_4(\text{Governance, Performance, Ownership}, Z_4, \varepsilon_4), \qquad (1d)$$

where the Z_i are vectors of control variables and instruments influencing the dependent variables and the ε_i are the error terms associated with exogenous noise and the unobservable features of managerial behavior or ability that explain cross-sectional variation in performance, ownership, capital structure and governance.[97]

Most of the extant literature that we have discussed, such as GIM's and BCF's studies, that has analyzed the relation between governance and performance, has just considered the first equation in the above system. This is equivalent to estimating the above system using ordinary least squares (OLS), instead of two-stage least squares (2SLS) or three-stage least squares

[96] Bhagat & Bolton, supra note 34.

[97] Id.

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(3SLS), which are econometrically more appropriate for estimating a system of simultaneous equations.

What happens if one estimates a system of simultaneous equations using OLS? Let us assume for the sake of exposition, that the truth is that there is no relationship between (a certain measure of) governance and (a certain measure of) performance. It is possible for the OLS estimates of the relationship between governance and performance to be statistically insignificant, significantly positive, *or* significantly negative. On the other hand, if the truth is that there is, say, a positive relationship between governance and performance, it is also possible for the OLS estimates of the relationship between governance and performance to be statistically insignificant, significantly positive, *or* significantly negative.[98] In other words, OLS estimates of the above system of equations cannot allow us to make any econometrically defensible inferences about the relationship between governance and performance.[99]

[98] This is a fundamental econometrics point; for example, Kennedy notes, "In a system of simultaneous equations, all the endogenous variables are random variables – a change in any disturbance term changes all the endogenous variables since they are determined simultaneously…As a consequence, the OLS estimator is biased, even asymptotically." Peter Kennedy, A Guide to Econometrics 180 (5th ed 2003). In addition, Maddala observes, "…the simultaneity problem results in inconsistent estimators of the parameters, when the structural equations are estimated by ordinary least squares (OLS)." G.S. Maddala, Introduction to Econometrics 383 (2d ed. 1992).

[99] The economics literature has numerous examples of the inappropriateness of using OLS when the underlying set of relationships suggest a need to estimate a system of simultaneous equations. A good example is a study by Allyn Strickland & Leonard Weiss, Advertising, Concentration, and Price-Cost Margins, 84 J. Pol. Econ. 1109 (1976). This research attempted to address the concern of regulators and policy-makers whether companies in more concentrated industries enjoyed higher profit margins. Like previous researchers they first estimate the impact of industry concentration (C) on price/cost margin in that industry (M) using the following equation where A denotes advertising expenditures.
  $M = h_1$ (C, A, control variables). When this equation was estimated using OLS, the coefficient on C was significant and positive giving credence to the notion that companies in more concentrated industries enjoyed higher profit margins. However, these authors correctly pointed out that the above equation was but one equation in a system of simultaneous equations. The other two equations in the system are:
  $A = h_2$ (C, M, control variables).
  $C = h_3$ (A, control variables).

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In the next section we illustrate that this general econometric wisdom is correct in the context of estimating the relation between governance and performance: findings regarding the relationship between various governance measures and performance identified in the literature using OLS are not always robust when those relationships are estimated in a system of simultaneous equations. But it should be noted that estimating simultaneous equation systems has its own problems. To estimate a system of simultaneous equations, the researcher must identify exogenous instrumental variables that explain one of the endogenous variables but not the other(s), and with multiple endogenous variables as in the system of equations represented by 1a-1d, an instrument is needed for each of the endogenous variables in an equation.[100] Identification of such instruments can be exceedingly difficult, because when two variables' values are integrally connected, it is likely that most explanatory variables affecting one will also directly affect the other. Thus researchers might use OLS rather than the more appropriate simultaneous equation technique on the rationale that the latter system cannot be estimated properly either.

C. Comparing the Relative Performance of Governance Indices and Single Attributes of Governance in Predicting Future Performance

Bhagat and Bolton undertook a comprehensive comparative analysis of the relationship between governance indices, single attributes of governance, and performance, using the simultaneous equation setup described in equations 1a-1d. Table 1 summarizes their results

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When the above three equations were estimated as a system of equations, there was no significant relation between concentration and profit margin.

[100] E.g., Kennedy, supra note 98, at 188. Technically, an instrument is an explanatory variable that is uncorrelated with the residual or error term of the regression, but correlated with the endogenous variable for which it is an instrument. Id. at 159.

regarding the relationship between governance and performance.[101] While previous studies have used both stock market- and accounting-based measures of performance, Bhagat and Bolton rely on accounting performance measures, and consider a sample of the largest 1500 U.S. corporations over the period 1998-2002. They emphasize accounting measures rather than stock returns as the appropriate performance measure for this analysis because, if investors anticipate the effect of corporate governance on performance, then long-term stock returns will not be significantly correlated with governance even if a significant correlation between performance and governance indeed exists.[102] Accounting measures, by contrast, do not suffer from an anticipation problem.

Table 1 here

Table 1 does not include Tobin's Q as a performance measure although prior studies, notably those by GIM and BCF, have treated it as a key performance measure.[103] This is because Tobin's Q has two serious shortcomings, even though it does not suffer from the anticipation problem of stock returns. First, if a firm has a high fraction of its assets as intangibles rather than tangible assets, and if monitoring intangible assets is difficult for shareholders, then shareholders are likely to require a higher level of managerial ownership to align incentives in

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[101] Bhagat & Bolton, supra note 34. The instruments used to estimate the system of equations (1a-d) are: in equation (1a), the ratio of treasury stock to assets; (1b), the percentage directors who are active CEOs and the percentage of firm stock owned by directors; (1c), the ratio of CEO tenure to CEO age, which is interpreted as a measure of CEO quality; and (1d), the modified Altman's Z-score, which is a considered to be a proxy for financial distress. Id. at 11-12.

[102] For a detailed discussion of the advantages and disadvantages of using stock market and accounting based measures of performance see Sanjai Bhagat & Richard H. Jefferis, The Econometrics of Corporate Governance Studies (2002).

[103] Bhagat and Bolton (2007) also consider the relationship between Tobin's Q and the seven governance measures examined in the tables. They do not find any significant or consistent relationship between any governance measure (including the G and E indices) and future Tobin's Q.

such a firm. Because the firm has a high fraction of its assets as intangibles it will have a high Tobin's Q as the numerator (market price) will impound the present value of the cash flows generated by the intangible assets, but the denominator usually does not include the investments a firm may have made in intangible assets. (This is because, under current accounting conventions, the denominator will not include the replacement value of these intangible assets.) As a consequence, these intangible assets will generate a positive correlation between ownership and performance, but this relation is spurious – due to the calculation of Tobin's Q -- not causal.

Second, a higher Tobin's Q might be reflective of a firm's greater market power (which is an intangible asset that affects the numerator and not the denominator of the ratio). Shareholders, cognizant of the fact that this market power shields the management from the discipline of the product market, will, in all probability, require managers of such a company to own more stock. That is because greater managerial ownership will be expected to tend to align managers' incentives better and offset the effect of the reduced discipline of the product market. In that scenario we would again observe a spurious relation between performance as measured by Tobin's Q and managerial ownership. Because ownership is inextricably related to governance, as represented by the system of equations 1a-1d, the problematic use of Tobin's Q to analyze the relation between performance and ownership cannot be avoided by analyzing the relation between performance and governance features that exclude ownership (e.g., analyses of GIM and BCF).

The results in Table 1 suggest a significant negative correlation between the G index and next year's return on assets (ROA).[104] Given that lower G index numbers reflect fewer defenses

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[104] The accounting measure of performance in Table 1 is return on assets because a comprehensive study comparing accounting performance measures by Brad Barber and John Lyon

and thus more exposure to the external governance mechanism of the market for control, these findings are consistent with a positive relation between good governance, as measured by GIM, and operating performance. Results using the contemporaneous operating performance are similar. However, this relation is insignificant, albeit the sign is still negative, when we consider the operating performance of the next two years. These findings are consistent with GIM's finding of a positive relation between good governance and performance for the period 1990-99, and extends their findings to 2000-04.

However, it is important to note that GIM's finding of a positive relation between good governance and performance is based on long-term stock returns as the measure of performance, and their analysis does not take into account the endogeneity of the relationships among corporate governance, performance, capital structure, and corporate ownership structure.[105] As previously noted, if investors anticipate the effect of corporate governance on performance, long-term stock returns will not be significantly correlated with governance even if a significant correlation between performance and governance exists. Indeed, as documented by Bhagat and Bolton and summarized in Table 2, there is no significant or consistent relation between GIM's measure of governance or any other measure of governance and contemporaneous, next year's or the next two years' stock returns.[106]

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provides evidence favoring its use. Brad M. Barber & John D. Lyon, "Detecting Abnormal Operating Performance: The Empirical Power and Specification of Test Statistics," 41 J. Fin. Econ. 359 (1996).

[105] Consistent with the findings reported here, Core et al., supra note 74, also find a positive relation between the G index and next year's ROA, although they also do not take into account the endogeneity of the relationships among corporate governance, performance, capital structure, and corporate ownership structure.

[106] These findings are consistent with those of John Core, Robert Holthausen and David Larcker, who conclude that their governance measures related to board structure (size, director composition, age and tenure, and identity of chairman) and ownership structure (blockholdings) "more consistently predict

Table 2 here

Table 1 indicates that there is a significant negative correlation between the E index and next year's ROA. Similar to the G index, lower E index numbers reflect better governance; hence, these results are consistent with a positive relation between good governance, as measured by BCF, and operating performance. Results using the contemporaneous and next two years' operating performance are similar. But, again, paralleling GIM's analysis, BCF's finding of a positive relation between good governance and performance is based on long-term stock returns, and Table 2 indicates that there is no significant relation between BCF's measure of governance and contemporaneous, next year's or the next two years' stock returns.

Single governance variables related to the board of directors also exhibit significant relationships with accounting performance. There is a significant and positive relation between the dollar value of the median director's stock ownership and contemporaneous, next year's and next two years' operating performance. Table 3 and Figure 1 provide additional characterizations of the univariate relationship between board ownership and future operating performance.

Table 3 and Figure 1 here

Similarly, the separation of the positions of CEO and board Chairman (referred to in the literature as CEO-Chair duality) is negatively and significantly related to contemporaneous, next year's and next two years' operating performance.[107] This finding, along with the results for the

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future accounting operating performance than future stock market performance." John E. Core, Robert W. Holthausen & David F. Larcker, Corporate Governance, Chief Executive Officer Compensation, and Firm Performance, 51 J. Fin. Econ. 371 (1999).

[107] Having an independent (i.e., non-CEO) chairman is frequently included as one of the components indicating the strength of a board's independence. The governance variable CEO-Chair

G and E indices, suggests that greater managerial control may lead to worse future operating performance. It is also in sharp contrast to the previous literature that has generally found no significant relation between CEO-Chair duality and future performance.[108] Board independence, however, is negatively and significantly related to contemporaneous, next year's and next two years' operating performance. This result is surprising, especially considering the recent emphasis that has been placed on board independence by the stock exchanges' amended listing requirements post-Enron; however, it is consistent with prior literature on boards.[109]

Table 1 also contains some evidence probative on commercial indices. The TCL compliance rating is unrelated to next year's and next two years' operating performance, and its relation with contemporaneous operating performance is negative but only marginally significant.[110] Furthermore, Brown and Caylor's Gov-Score (which uses ISS's assessment of acceptable governance practices) is unrelated to contemporaneous and next year's operating

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duality equals 1 if the CEO is Chair and 0 otherwise. Hence, a negative relation between CEO-Chair duality and performance is equivalent to a positive relation between separation of the positions of CEO and Chair and performance.

[108] E.g., Ram Baliga, Charles Moyer, & Ramesh Rao, CEO Duality and Firm Performance: What's The Fuss? 17 Strategic Mgmt J. 41 (1996); James A. Brickley, Coles & Greg Jarrell, Leadership Structure: Separating the CEO and Chairman of the Board, 3 J. Corp. Fin. 189 (1997); Maria Carapeto, Meziane Lasfer, & Katerina Machera, Does Duality Destroy Value? Cass Business School working paper (2005). One possible explanation for the disparity may be that these earlier studies did not control for the endogeneity of performance and governance. In addition the sample sizes in those studies are much smaller than that in Bhagat and Bolton.

[109] The NYSE and NASDAQ required independent nominating and compensation committees, and majority board independence after the enactment of SOX, see note 6, supra. Hermalin & Weisbach, supra note 65, review the literature suggesting a negative, and not positive, relation between the proportion of a board that is independent and performance, in addition to the earlier literature reviews cited in note 21.

[110] Bhagat and Bolton analyze TCL's benchmark compliance rating and not its effectiveness rating in their study. The compliance rating is more comparable to the other indices they study, but TCL does not consider it to be an appropriate measure of governance quality, see text and accompanying note 63, supra.

performance. These findings highlight the problems of constructing a governance index using multiple indicators of board structure and processes, charter provisions, and management compensation structure. As noted earlier, while these features do characterize a company's governance, construction of a governance index requires the extremely difficult task of properly weighting the variable components. The failure to find a relation between these multiple dimension indices and performance may well be a function of inapposite weights on the components, rather than the true absence of a relation between performance and governance.

Finally, Bhagat and Bolton find that the G-index and median director ownership are uncorrelated. This suggests that a composite measure of governance that combines the information contained in the G-index and median director ownership might be a more powerful predictor of operating performance than either measure by itself. For each year, all firms are ranked from best to worst governed with respect to each of the two governance variables, and the sum of these two ranks provides a composite governance score (Composite G-Ownership index) for each year for each sample firm. Consistent with their hypothesis, the combined measure of governance outperforms either of the two measures taken separately. They find that a 1 percent improvement in governance as measured by the composite index leads to a 1.874 percent change in operating performance in the current period, a 1.567 percent change in next year's operating performance, and a 1.520 percent change in the next two years' operating performance. (The respective changes per 1 percent governance improvement for the G index alone are 0.854 percent, 0.763 percent and 0.287 percent.)

In summary, these findings suggest that certain complex measures of corporate governance – the G and E indices – and certain simple measures – director ownership and CEO-chair separation – are positively associated with current and future operating performance. This

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further suggests that there is not an obvious benefit to using those more complex measures. Indeed, governance indices that are comprised of more dimensions than the G and E indices and are therefore closer in form to indices marketed by commercial vendors such as TCL and ISS, are not even related to future performance. The combination of only one of those dimensions, outside director ownership, with the G index appears to have a greater impact on future operating performance than any of the governance indices alone.

D. Comparing the Relative Performance of Governance Indices and Single Attributes of Governance in Predicting Management Turnover after Poor Performance

Although the analysis up to now has focused on the relation between governance and overall performance, it is possible that governance matters most, or only, for a firm experiencing a crisis, or needing to make a critical decision, such as the decision to change senior management. In this regard, governance may be more important for imposing discipline and providing fresh leadership when the corporation is performing poorly than in the ordinary course of events.[111]

To investigate this possibility, Bhagat and Bolton examined the impact on management turnover following poor performance of the academic governance indices and single board governance attributes. They estimate a multinomial logit regression in which the dependent variable is equal to 0 if no turnover occurred in a firm-year, 1 if the turnover was disciplinary,

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[111] See, e.g., Hermalin & Weisbach, supra note 65, at 17.

<div align="center">55</div>

and 2 if the turnover was non-disciplinary.[112] Using the past two years' stock return as the

performance measure, they estimate the following baseline equation:

Type of CEO Turnover = g_1(Past 2 years' stock return, Z_1, ϵ_1)   (2a)

The Z_1 vector of controls includes CEO ownership, CEO age, CEO tenure, firm size, industry

return and year dummy variables.[113] The baseline results indicate that a firm's stock market

returns during the previous two years, CEO stock ownership, and CEO tenure are significantly

negatively related to disciplinary CEO turnover; these findings are consistent with the prior

literature. Bhagat and Bolton further find that the prior two years' returns of firms in the

industry is significantly positively related to disciplinary CEO turnover. In other words, if the

prior industry performance has been good this increases the probability of disciplinary CEO

turnover, regardless of the particular company's performance. Similarly, if the prior industry

performance has been poor this decreases the probability of disciplinary CEO turnover,

regardless of the particular company's performance.

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[112] Bhagat and Bolton's criteria for classifying a CEO turnover as disciplinary or non-disciplinary is similar to that of Stuart C. Gilson, Management Turnover and Financial Distress, 25 J. Fin. Econ. 241 (1989); Mark R. Huson, Robert Parrino & Laura T. Starks, Internal Monitoring Mechanisms and CEO Turnover: A Long-Term Perspective, 56 J. Fin. 2265 (2001); and Kathleen A. Farrell & David A. Whidbee, Impact of Firm Performance Expectations on CEO Turnover and Replacement Decisions, 36 J. Accounting & Econ. 165 (2003). CEO turnover is classified as "non-disciplinary" if the CEO died, if the CEO was older than 63, if the change was the result of an announced transition plan, or if the CEO stayed on as chairman of the board for more than a year. CEO turnover is classified as "disciplinary" if the CEO resigned to pursue other interests, if the CEO was terminated, or if no specific reason is given. Additionally, to address endogeneity concerns involving management turnover and performance (and ownership) they estimate a system of five equations: 1a, 1b, 1c, 1d, and 2b. Results from taking turnover endogeneity into account are entirely consistent with the results noted below.

[113] These control variables are motivated by a substantial literature on performance and CEO turnover. See, e.g., Huson, Parrino & Starks, supra note 113 (CEO age and year dummies); Ellen Engel, Rachel M. Hayes & Xue Wang, CEO Turnover and Properties of Accounting Information, 36 J. Accounting & Econ. 197 (2003) (CEO age, industry adjusted returns); Farrell & Whidbee, supra note 111 (CEO age, CEO tenure, firm size, industry adjusted performance); Michael S. Weisbach, Outside Directors and CEO Turnover, 20 J. Fin. Econ. 432 (1988) (CEO share ownership).

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To determine the role that governance plays in CEO turnover, Bhagat and Bolton create an

interactive variable that is the product of the past two years' stock return and the governance

variable. The reasoning behind this construct is that if the firm is performing adequately, good

governance should not lead to CEO turnover; only when performance is poor would we expect

to find better governed firms to be more likely to replace the CEO. To measure this effect, they

estimate the following modified version of equation 2a:

Type of CEO Turnover = g_2(Past 2 years' stock return, Governance,
              (Past 2 years' stock return x Governance), Z_1, ϵ_2)   (2b)

As summarized in Tables 4 and 5, Bhagat and Bolton find that when the governance

variables are included, the prior return variable is not significant in five of the seven cases,

suggesting that poor performance alone is not enough to lead to a change in senior management.

In addition, the governance variable by itself is statistically not significant in most cases.[114] This

suggests that good governance *per se* is not related to disciplinary turnover (or that the

literature's definition of good governance is misplaced, at least with respect to disciplinary

turnover).

Tables 4 and 5 here

However, the key variable for determining whether governance is related to disciplinary

turnover for poorly performing firms is the interactive term. The interactive term when

governance is measured by either the percentage of the board that is independent or the dollar

value of the median outside director's stock ownership is negative and significant. These

findings suggest that good governance as measured by those single board attributes increases the

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[114] The exception is that when the CEO is also the Chairman, he is less likely to experience disciplinary turnover.

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probability of disciplinary turnover for poorly performing firms.[115] The interactive term is significantly negative for CEO-Chair duality, which means that when the CEO is also the Chairman, he is more likely to experience disciplinary turnover given poor firm performance.[116] Moreover, both the GIM and BCF measures of good governance are negatively related to the probability of disciplinary turnover for poorly performing firms. This suggests that better governed firms as measured by the G and E indices are less likely to experience disciplinary management turnover in spite of their poor performance.

Finally, both the TCL compliance rating and Gov-Score measures of good governance are unrelated to the probability of disciplinary turnover for poorly performing firms. These findings would again appear to underscore the hazard of constructing a governance index using multiple indicators of board structure and processes, charter provisions, and management compensation structure. Accordingly, of all of the measures of governance quality evaluated by Bhagat and Bolton, only the outside directors' stock ownership measure is related to both measures of performance, firms' future accounting profitability and disciplinary management turnover upon poor performance.   This indicates more convincingly than the findings regarding accounting

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[115] The finding that the probability of disciplinary CEO turnover (given poor prior firm performance) increases with greater board independence is consistent with similar findings in Weisbach, supra note 113.

[116] This result is counterintuitive, given that a CEO-Chairman is thought to be more powerful, hence more entrenched, than a CEO who is not Chairman. One speculative explanation of this finding is that if the board is actively engaged in policy-making when the CEO is not the chair, it is possible that it does not have to replace the CEO to implement a new strategy to improve performance. This result would also seem to be contrary to the implication of the prior finding that CEO-Chair duality is negatively related to overall performance, or, at least, to indicate that the prior analysis may obscure nonlinearities in the relation between performance and governance, or that the relation between board independence and structure, as represented by the identity of the chairman, and CEO entrenchment is more subtle than that suggested by the governance literature or than the relation captured by the system of equations 1a-1d.

performance that the more complex measures of firms' governance quality generated by index construction need not be superior to a single governance variable. It also provides some support for proposals to compensate directors with stock.[117]

4. More General Lessons Gleaned from the Literature

The initial lesson that should be drawn from the corporate governance literature is that there is at present no best governance index with which to identify a firm's governance quality. The best measure of governance varies with the context for which it is to be used, as different measures of good governance are correlated with different performance measures. It is, as a consequence, not a simple or straightforward matter to provide investors who wish to use governance to predict performance with an appropriate proxy.   For example, if accounting measures of performance are of concern, then the G and E indices could be sensible measures to use. However, those measures are inappropriate if the performance criterion is whether top management will be replaced following poor performance. Indeed, the single governance variable of outside directors' stock ownership is related to both of those performance measures and thus that governance measure would serve investors better than any of the indices.

Moreover, if future stock returns (the conventional performance measure of concern to investors) are the focus, then none of the academic indices, nor the related commercial ones, are helpful. In short, consumers of indices need to be aware of the indices' considerable limitations, as most consumers' investment purposes will, no doubt, not be as narrowly focused as any one index's possible value-added. The danger for investors, particularly the more poorly informed,

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[117] Charles Elson has been a persistent proponent of outside director stock compensation as a solution to governance problems, e.g., Charles M. Elson, Executive Overcompensation – A Board-Based Solution, 34 B.C.L. Rev. 937 (1993); Charles M. Elson & Christopher J. Gyves, The Enron Failure and Corporate Governance Reform, 38 Wake Forest L.Rev. 855 (2003)..

is that indices can create the illusion of certainty regarding an assessment of firms' governance quality, when reality is, in fact, quite muddy.

A further important implication of contextually-valuable governance measures concerns the appropriate form of governance regulation: it should be selected so as to maximize the flexibility afforded to adoption of standards. That is because, when the benefits from a particular governance mechanism are dependent upon the context, regulation must be sufficiently flexible to permit variation in governance requirements to suit the situation. Governance regulations that are mandates decidedly do not meet such a criterion.

In particular, the research we have summarized on the relation between corporate governance and performance most definitely does not support a "one-size-fits-all" approach to governance, which has been the preferred approach post-Enron to governance by Congress with the passage of SOX, and by the stock exchanges, whose rules are adopted under the aegis of the SEC, in their implementation and expansion of SOX requirements. Because there is no one best governance index -- as we have discussed, none of the indices are correlated with many relevant measures of performance and by construction they do not take into account the complex relations among governance institutions -- shoe-horning firms into a uniform set of governance institutions would generate potentially serious costs for investors.

More specifically, the data indicating that good governance measures are substitutes suggest that what is good governance for one firm need not be good governance for another. Given such a relationship, it would not be desirable for all firms to fulfill all components in a good governance index, since for some firms the provisions will be working at cross purposes. Yet governance mandates do precisely that. For example, the independent director mandates of SOX and the stock exchanges permit no exceptions, and this requirement prevents firms from

adapting their governance institutions to fit their needs. Namely, firms can no longer engage in the governance tradeoff identified by GHS that firms often chose before the adoption of those mandates, replacing independent boards with the market for corporate control as the monitor of management and thereby presumably obtaining operational benefits from the expertise provided by non-independent (affiliated) directors.

The same issue arises when activist institutional investors and their advocacy organizations, such as the CII, advance the adoption of uniform governance institutions by their advocacy of conformance to a best practices list. The objective of a "best practices" approach is equivalent to that of a regulatory mandate, in that the aim is to have all firms adopt identical governance institutions (which are characterized as "best practices"). Of course there is a difference: best practice advocates can only seek their preferred governance regime's effectuation by shareholder proposals and other forms of pressure on individual firms (such as withholding votes from directors or engaging in media campaigns against management), versus attain compliance across the board by fiat, as is done by a government mandate. But that difference does not make the approach much less troubling.

An example of the problematic aspect of this private sector version of governance mandates is the policy position of many activist investors that firms should repeal defensive tactics. GHS' finding that firms with strong, independent boards adopt numerous takeover defenses suggests that efforts to remove defenses may well be misguided by disregarding the need for governance tradeoffs: for some firms board monitoring would appear to substitute for the market for control, with takeover defenses being adopted, as GHS speculate, to obtain the benefit of avoiding myopic behavior, such as underinvestment, by managers concerned about

takeover threats.[118]

The parallelism noted between regulatory mandates and institutional investor activists' best practices approach leads to a further question regarding the efficacy of "comply or explain" governance regimes, which are usually characterized in the literature as the alternative to the United States' mandatory approach.[119] Comply or explain is the approach to governance taken by regulators in Canada, the United Kingdom, and many nations of the European Union. Under this regulatory approach, firms must either comply with a list of best practices or disclose the reason for any noncompliance.

The best practices lists underlying a comply or explain regime are, in essence, governance indices, in which each item on the list is equivalent to one of the components in an equally-weighted index. This is because the regulator expects firms to comply with all of the approved practices on its list, and full compliers are considered firms with the best governance, just as the constructor of an index considers it desirable for all firms to have all index components, such that the firm with the maximum sum (highest value of the index) is identified as the one with the highest quality governance. That is the meaning of requiring firms to explain a failure to comply: the presumption is that firms should comply, for otherwise there would be no reason to require an explanation for non-conformance.

Because non-compliers in a comply or explain regime have the burden of explaining away their decisions, noncompliance can have a chilling effect, dissuading management from

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[118] Gillan et al., supra note 67. For a model of managerial myopia in response to takeovers see Jeremy C. Stein, Takeover Threats and Managerial Myopia, 96 J. Pol. Econ. 61 (1988).

[119] See, e.g., George S. Dallas & Hal S. Scott, Mandating Corporate Behavior: Can One Set of Rules Fit All? 18 (2006) (identifying the U.K./European comply or explain model as "viable" "alternative" or "rival" to the United States' prescriptive approach), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=907346.

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adopting governance mechanisms that would otherwise be beneficial (i.e., the requirement of an explanation for noncompliance could imply that something is awry). But if no one index is associated with better governance objectives in all contexts – as we have seen, for instance, in the reversal of the effectiveness rankings of the G and E indices going from operating performance to disciplinary management turnover as the performance measure under consideration – then that is no doubt also true of adherence to any one best practices list. Accordingly, requiring firms to justify noncompliance is inappropriate and may be imposing needless costs. Consistent with this view, the bulk of the empirical studies investigating whether firms in compliance with the best practices of comply or explain regimes are superior performers than non-fully compliant firms find that compliers do not outperform noncompliers.[120]

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[120] See N. Vafeas & E. Theodorou, The Association between Board Structure and Firm Performance in the UK, 30 Brit. Accounting Rev. 383 (1998) (no relation between compliance and performance, measured by Tobin's Q); C. Weir, D. Laing & P.J. McKnight, Internal and External Governance Mechanisms: Their Impact on the Performance of Large UK Companies, 29 J. Bus., Fin. & Accounting 579 (2002) (same); Carol Padgett & Amama Shabbir, The UK Code of Corporate Governance: Link between Compliance and Firm Performance, University of Reading ICMA Centre Discussion Papers in Finance DP2005-17 (2005) (positive relation between compliance and performance measured by capital gains and dividends, using GIM-like constructed index of what authors consider to be the "spirit" of compliance, and not simply "formal"compliance used in other studies; but no relation between compliance index and accounting measures of performance); Jochen Zimmermann, Igor Goncharov & Joerg-Richard Werner, Does Compliance with the German Corporate Governance Code Have an Impact on Stock Valuation? An Empirical Analysis, 14 Corp. Governance: An Int'l Rev. 432 (2006) (compliance by German firms, defined by deviations from the governance code numbering less than the median positively related to non-market adjusted stock returns and prices). Moreover, the literature investigating the impact of key governance mechanisms included in the best practices lists of the major comply or explain regimes is consistent with those results: independent boards are consistently not associated with superior performance, nor are firms with separate CEOs and board Chairs. See notes 21 and 108, supra, collecting references to studies on independent boards and board duality, respectively, and Elisabeth Dedman, The Cadbury Committee Recommendations on Corporate Governance – A Review of Compliance and Performance Impacts, 4 Int'l J. Mgmt Rev. 335 (2002) (reviewing those studies to evaluate whether the United Kingdom's comply or explain regime has improved performance).

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The upshot is that, in selecting a governance regulatory regime, a disclosure regime without reference to a comparative benchmark would appear to be a more appropriate regulatory framework than a comply or explain, let alone a mandatory governance, regime, as it would be most consistent with the spirit of the findings of the governance literature.[121] That is because a straightforward disclosure approach of a firms' governance features does not attempt to identify best practices, and thus avoids the illusion that we are in possession of knowledge that we obviously do not have. In a governance disclosure regime, firms do not have to explain why they follow a specific governance practice whether or not it differs from that of other firms. They disclose their governance structures and investors are left to make of it what they will. Such a regime would, in all likelihood, impose some informational costs on investors compared to a comply or explain regime, since it is altogether conceivable that it would be more difficult to compare firms on governance dimensions as the disclosures will not reference a benchmark, the hallmark of the "comply or explain" approach. But that is the precise advantage of a disclosure-only regime. It would eliminate the false promise that is embodied in a best practices list or governance index, that a set of known practices exists against which all firms should be benchmarked.

It is possible that a disclosure regime might have a minor chilling effect on firms, as disclosing practices that deviate from the disclosed practices of a majority of firms might cause

some investors to question a firm for nonconformance. In such a scenario, firms whose governance regimes were nonconforming to most other firms or some prominent investors' or proxy advisory services' governance check lists might feel pressed to explain their institutional arrangements. We think that such a scenario is far fetched, but were that to be the case, in contrast to a mandated comply or explain regime, such pressure to conform is being generated by the financial market, which is the appropriate source of give and take in the pricing of stock, as opposed to a regulatory authority.[122]

Are there any further lessons to be drawn by institutional investors who, at present, are the primary consumers of proprietary governance indices? Stock ownership of directors appears to offer a more effective method of ranking firms' governance quality than the more complex governance indices, and it is cheaper to acquire (it can be identified by self-help without much difficulty). Because investors purchasing governance services are sophisticated, and often for-profit, institutions, it would not be sensible to conclude that they have been unduly persuaded by the marketers of the indices (although we do think that some marketers are far too optimistic regarding the value added of their products[123]). Rather, it might be a relatively inexpensive way of handling fiduciary obligations to be able to refer to an externally-generated governance index

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[121] We do not in this paper address the normative question concerning the appropriate level of governance regulation in a federal political system such as the United States. As one of us has maintained, see Roberta Romano, The Advantage of Competitive Federalism for Securities Regulation (2003), if a disclosure regime was the preferable governance regime, as we advocate here, then a competitive regulatory system in which firms choose their regulator would generate that mode of regulation, given regulatory competition's alignment of incentives and interests among issuers, investors and regulators.

[122] Iain MacNeil and Xiao Li provide some evidence that explanations offered by noncompliers in the U.K.'s comply or explain regime are not of concern to investors, at least when the firm's stock is performing well. Iain MacNeil & Xiao Li, "Comply or Explain": Market Discipline and Non-Compliance with the Combined Code, 14 Corp. Governance: An Int'l Rev. 486 (2006). They find that the share prices of noncompliers with the U.K. combined code outperformed the market, but those firms' explanations of their noncompliance were, in the authors' view, completely uninformative and they therefore hypothesize that it is simpler for investors to not seek to understand the reasons for noncompliance but rather to require proof that noncompliance "works," that is, to use stock performance as a proxy for the merits of noncompliance with code features.

[123] Both Glass Lewis and ISS, for example, assert that their indices are positively correlated with performance, see note 47 supra (quoting Glass Lewis' website) and ISS Overview, supra note 56.

for investment or, more importantly, proxy voting decisions, even if its use might lead to incorrect decisions in a sizeable number of cases.[124] In our view, the information gleaned about a firm from its ranking on an index should be treated as merely one of many potential pieces of information that might be relevant for fiduciaries' investing or voting decisions.

Finally, we offer the following cautionary note for courts. We are not aware of governance indices having been a subject of judicial notice. But it would seem plausible to expect the plaintiff's bar in shareholder litigation in due course to seek to employ the evidentiary power of low governance ratings (given marketers' emphasis on a link between indices and performance). Plaintiffs, that is, could attempt to bolster fiduciary breach claims with reference to firms' governance failures as identified by commercial indices, and scholarly articles that find some relation between performance and an index.

In that eventuality, we would suggest that courts should evaluate such claims with more than a few grains of salt, and to consider, for instance, whether the alleged breach can be related to a context in which the governance measure to which the plaintiff refers is associated with better performance, or whether the firm rates low on all governance indices, including single dimensions that have been found to be of equal or superior value to an index. Such considerations might make for a more plausible claim that the firm's quality of governance is poor. But even then, we do not think that it should be probative for determining directors'

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[124] For data suggestive of such an explanation see Martijn Cremers & Roberta Romano, Institutional Investors and Proxy Voting: The Impact of the 2003 Mutual Fund Voting Disclosure Requirement, Yale ICF Working Paper No. 07-10 (2007) (finding mutual funds' voting support for management equity incentive compensation plan proposals increased after their votes had to be disclosed in firms with higher stock ownership of outside directors. They offer as a possible explanation that the funds began keying on this good governance feature – it is one of ISS' index components -- as a defensive strategy to deflect criticism against their supporting management in what has become an increasingly controversial voting context.

negligence or trumping the applicability of the business judgment rule. Rather, we think it would be more appropriate for a court to require the plaintiff to be able to establish a nexus between the governance failure (the low score's source) and some action or inaction of the board producing the harm at issue.

5. Conclusion

The renewed focus on corporate governance following the collapse of Enron and other financial scandals has hastened the creation of governance indices, marketed primarily to institutional investors, as measures of firms' governance quality that can be used to inform investment and proxy voting decisions. The notion animating index construction is that because corporate governance operates on many dimensions, it is of value to combine the numerous elements of a firm's governance system into one number representing the quality of the firms' governance. The effort to construct a good index – by academics as well as commercial providers of governance services – is considered urgent by many in the belief that corporate performance is a function of good governance.

While identifying a measure of governance quality is a commendable idea in theory, in practice, the existing indices fail to capture the diverse ways in which governance operates in firms for two reasons. First, no one index can predict a firm's performance on all of the performance measures that are thought to be important to investors. Indeed, a simple single governance variable, outside directors' stock ownership, performs better than the leading academic indices, as it is positively correlated with more performance measures. Second, indices are constructed so as to treat all component governance mechanisms as complements, when the data suggest that several such mechanisms are actually substitutes for, and not complements to, each other and the relation appears to vary across firm characteristics and

industry sectors. In short, one size does not fit all. Good governance is therefore best understood as highly context-specific, something that even the best-constructed index simply cannot capture and convey.

These serious limitations on the effectiveness of an index have two broad policy implications. First, the most widespread forms of governance regulation need to be rethought because they mimic the approach of indices: both prescriptive mandates (the U.S. approach post-Enron) and comply or explain regimes (most other developed economies', including the Canadian, U.K. and European approach) identify governance institutions that all firms are expected to adopt. A more appropriate regulatory approach, in our view, is a straightforward governance disclosure regime, which is fully cognizant of the costs and benefits of disclosure. Such a regime acknowledges that there is no one best benchmark or set of best practices that is appropriate for all, or even most, firms. Second, investors should treat indices for what they are, one of a multitude of pieces of information of interest about firms' quality, that cannot predict future stock market performance.

Appendix

1. Gompers, Ishii & Metrick (GIM) Governance or "G" Index

Groupings of the governance provisions in the index:

1. "Delay": four provisions for delaying hostile takeover bidders (the presence of blank check preferred stock, a classified board, restrictions on shareholders' ability to call special meetings, and restrictions on shareholders' ability to act by written consent).

2. "Voting": six provisions involving shareholder voting rights (the presence of cumulative voting, confidential voting, supermajority voting for business combinations, dual class stock, and limitations to shareholders' ability to amend the bylaws or certificate of incorporation).

3. "Protection": six provisions protecting directors and officers from legal liability or compensating them for termination (limited liability provisions, indemnification provisions in charters or bylaws, indemnification contracts, golden parachutes, severance contracts not conditioned on control changes, and compensation plans with changes-in-control provisions).

4. "Other": six other takeover defenses (the presence of antigreenmail charter provisions, fair price provisions, other constituent provisions, poison pills, silver parachutes, and pension parachutes).

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5. "State": incorporation in a state with one of six state takeover laws (antigreenmail, business combination freeze, control share acquisition, fair price, other constitutencies and redemption rights statutes).

Because of overlap between some of the tracked firm-level provisions and state takeover laws, the 28 tracked provisions are collapsed into 24 unique provisions. Note that the groupings can be questioned for lack of internal coherence. For example, blank check preferred is classified in the "delay" category but it is used in the creation of poison pills, which are placed in the "other" category.

2. Bebchuk, Cohen & Ferrell (BCF) Entrenchment or "E" Index

Subset of provisions in the G index used (GIM's grouping in parentheses):

1. Classified boards (Delay)

2. Limitations to shareholders' ability to amend the bylaws (Voting)

3. Supermajority voting for business combinations (Voting)

4. Supermajority requirements for charter amendments (Voting)

5. Poison pills (Other)

6. Golden parachutes (Protection)

3. Brown and Caylor Gov-Score

Groupings of ISS minimally acceptable corporate governance standards comprising Gov-Score (factors also in the G index are in italics):

1. "Audit" (four factors): audit committee consists solely of independent outside directors; auditors ratified by shareholders at most recent annual meeting; consulting fees paid to auditors less than audit fees paid; company has formal policy on auditor rotation

2. "Board of directors" (17 factors): managers respond to shareholder proposals within 12 months of meeting; CEO serves on no more than two other public corporation boards; all directors attended at least 75% of board meetings or had valid excuse for non-attendance; size of board between six and 15; no former CEO is a director; no CEO related-party transactions listed in proxy; board has more than 50% independent outside directors; compensation committee comprised solely of independent outside directors; CEO and Chairman positions are separated or lead director is specified; shareholders vote on directors selected to fill vacancies; *annual director elections*; shareholder approval to change board size; nominating committee comprised solely of independent outside directors; governance committee meets at least once a year**;** *cumulative voting rights*; board guidelines in proxy statement; policy requiring outside directors to serve on no more than five additional boards

3. "Charter/bylaws" (seven factors): *majority vote for merger; no poison pill or shareholder approved pill; shareholders can call special meetings; majority vote to amend charter or bylaws; shareholders may act by nonunanimous written consent; no blank check preferred stock; board cannot amend bylaws without shareholder approval or can do so only under limited circumstances*

4. "Director education" (one factor): at least one director has participated in ISS-accredited director education program

5. "Executive and director compensation" (ten factors): no interlocking directors on compensation committee; non-employees do not participate in pension plans; no option repricing in past three years; shareholder approval of stock incentive plans; directors receive all or part of fees in stock; no corporate loans to executives to exercise options; last time shareholders voted on a pay plan ISS did not deem the cost to be excessive; average options granted in past three years as percentage of basic shares outstanding no more than 3% ("option burn rate"); prohibition on option repricing; expenses stock options

6. "Ownership" (four factors): all directors with more than one year of service own stock; officers' and directors' stock ownership at least 1% and not over 30%; executives subject to stock ownership guidelines; directors subject to stock ownership guidelines

7. "Progressive practices" (seven factors): mandatory retirement age for directors; board performance regularly reviewed; board-approved CEO succession plan in place; board has outside advisors; directors must submit resignation upon change in job status; outside directors meet without CEO and disclose number of times they meet; director term limits

8. "State of incorporation" (one factor): incorporation in state with no takeover statutes

All of the factors in ISS's "charter/bylaw" grouping are also in the G index; the remaining G index components included in Gov-Score are in the "board of directors" category. In addition, although Brown and Caylor do not identify the state of incorporation factor as in the G index, it is essentially a composite of the four components in that index's "state" grouping.

Subset of factors in Gov-7 (ISS grouping in parentheses; factors also in the E index are in italics):

1. *Annual director elections* (Board of directors)

2. *No poison pill or shareholder approved pill* (Charter/bylaws)

3. No option repricing in past three years (Executive and director compensation)

4. Directors subject to stock ownership guidelines (Ownership)

5. All directors attended at least 75% of board meetings or had valid excuse for non-attendance (Board of directors)

6. Average options granted in past three years as percentage of basic shares outstanding no more than 3% (Executive and director compensation)

7. Board guidelines are in each proxy statement (Board of directors)

Gov-7 was created by selecting the factors that were significant in two of three statistical approaches used to determine which of the 51 factors in Gov-Score drove the relation identified between that index and firm value: (1) a regression of Tobin's Q on the 51 factors and controls; (2) BCF's methodology, which separately regresses Tobin's Q on each factor, Gov-Score minus the factor, and controls; and (3) stepwise regression using a forward-selection technique in which variables are retained if they are significant at 10 percent (two-tailed test).

4. Proprietary Governance Indices

a. The Corporate Library Board Effectiveness Rating

The Corporate Library (TCL), an investor research firm established by Nell Minow, an investor activist and that produces research reports and commentary on corporate governance, has developed a proprietary measure of the quality of firms' governance, called the "Board Effectiveness" rating, which is a letter grade from A to F, representing a weighted average of an

assessment of the effectiveness of seven governance components and an eighth personal assessment of the TCL analyst of the company's governance quality.

Components in the rating:

1. Board Composition. Described as the only component not based primarily on board actions and decision-making, and related to an analysis of the historical governance patterns of firms that experienced governance failures, it consists of screens on director tenure, age, and independence, the number of active or former CEOs on the board, and whether a past CEO is chairman, and director "over-commitment" (sitting on more than four other boards)

2. CEO Compensation. Depends on the balance of fixed and variable pay, how much variable pay is in the form of stock, with numerical red flags, such as base salary over $1 million, "excessive" options and high perquisite payments, and disclosure practices.

3. Shareholder Responsiveness. History of board's response to successful shareholder proposals (those receiving a majority of the votes).

4. Litigation & Regulatory Problems. Based on the incidence of litigation and assessed fines, includes an evaluation of the amount of disclosure of current or potential liability exposure, and the existence of repeated regulatory infractions or fines,.

5. Takeover Defenses. Detailed information provided on defenses, with better ratings assigned for unidentified "more shareholder friendly" defenses.

6. Accounting. Screen compares current quarter reports against prior four quarters for indicators of potential earnings management or other accounting concerns.

7. Strategic Decisionmaking. Focuses on board approval of mergers and acquisitions (with lower ratings assigned to approvals of mergers resulting in significant loss of shareholder value).

8. Analyst Adjustment. Analyst may adjust the board rating up or down for reasons that fall outside the regular scoring system.

The first two components, board composition and CEO composition, comprise half of the overall rating, with equal weights applied to the other five governance components. The analyst adjustment is described as "determined on an individual basis."

TCL also reports a Best Practices Compliance score or benchmark, developed from other organizations' guidelines, that ranges from 0 to 100. It considers the effectiveness rating, and not the compliance score, as the preferable metric of a company's governance quality. TCL's Best Practices Compliance Score is based on the following factors: whether the firm has a classified board, majority outside directors, independent chairman or lead director, audit committee of only independent directors, formal governance policy, and the number of directors who are over 70 years old, serve on more than 4 other boards and have more than 15 years of service.

b. GovernanceMetrics International (GMI) Martket and Industry Indices

GovernanceMetrics International is an international governance rating organization, founded by individuals experienced in the investor relations and advising industry, that markets research and analyses principally to institutional investors. It provides advisory services to a variety of

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nonprofit organizations, such as stock exchanges, as well as to investors, but it does not provide proxy voting advisory services. Its "overall rating" governance score, which ranges from 1 to 10 and is derived from a statistical algorithm assigning numerical values to individual metrics falling within six general governance areas, is computed as a comparative score based on the governance practices and policies of other firms in the rated company's home state or region (the "home market" rating) or all firms in GMI's universe (the "global" rating).

Governance Areas ("Research Categories"):

1. Board Accountability

2. Financial Disclosure and Internal Controls

3. Shareholder Rights

4. Executive Compensation

5. Market for Control and Ownership Base

6. Corporate Behavior and Corporate Social Responsibility Issues

6. Institutional Shareholder Services (ISS) Corporate Governance Quotient

ISS is the market leader in the provision of proxy advisory and corporate governance services to institutional investors. It also provides governance and proxy consulting services to issuers. It has been in the advisory business for over two decades, during which it acquired competitors and expanded its services (acquiring most recently the proxy research firm, IRRC, in 2005, before it was itself acquired in 2006.) ISS rates companies according to a "Corporate Governance Quotient," which is derived from 63 governance factors (also referred to as governance criteria) that are grouped into four key governance areas, combining eight governance categories on which companies are evaluated. The weights assigned to the individual components are a function of their correlations with performance measures. The ratings are calculated as

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percentages indicating where a firm stands in relation to other firms in its industry or market. (For example, a value of 97.5 means that the company outperformed 97.5% of firms in its industry or stock market index, according to ISS' statistical algorithm combining governance factors.)

Governance Areas and Weights

1. Board of directors - 40%

2. Compensation - 30%

3. Takeover defenses - 20%

4. Audit - 10%

The eight most important governance variables that enter into the rating, in order of their weighting are:

audit committee with all independent outside directors; average options granted in past three years as percentage of basic shares outstanding no more than 2 percent or less or within one standard deviation of industry mean ("option burn rate"); all audit committee members are financial experts; board controlled by supermajority (over 90%) of independent outside directors; board has only one non-independent director; directors subject to stock ownership requirements; board controlled by supermajority (between 75 - 90%) of independent outsiders; incorporation in state with no takeover statutes

The sixteen performance measures ISS used to test its governance rating factors, which are divided into four categories of performance, are as follow:

1. Risk. Two measures: Volatility; Altman's Z score (probability of bankruptcy)

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2. Market. Two measures: Total Shareholder Return; Tobin's Q

3. Valuation. Three ratio measures: Price to Book; Price to Cash Flow; Price to Earnings

4. Profitability. Nine measures: Dividend; Return on Invested Capital; Return on Equity;

Return on Investment; Cash Flow Return in Investment; Net Profit Margin; EBITDA

Margin; Sales Growth; Free Cash Flow to Sales

The factors that ISS use change over time, reflecting changing trends in corporate governance.

For example, it no longer includes a factor for whether firms expense options, because that

accounting treatment is now required and no longer voluntary. In addition, it now includes a

factor for whether the company has majority vote director elections, a governance issue that first

appeared on activist institutional investors agenda in any serious form in 2005, and a factor for

whether the company has backdated options, an accounting issue – some would call it a scandal

-- that first came to light in 2006.

d. Egan-Jones Proxy Services Corporate Governance Ratings

Egan-Jones Proxy Services provides assistance in proxy voting, offering research,

recommendations and voting services (such as automated vote execution, recordkeeping and

vote disclosure reporting). Although its affiliated business has provided credit rating analysis

for many years, it began to offer proxy recommendations commercially in 2003 (in conjunction

with the increased emphasis on corporate governance and particularly the new SEC regulations

regarding disclosure of mutual funds' voting). In addition to offering general voting evaluating

the impact on "shareholder value," it provides voting guidelines tailored to certain labor union

funds' needs, that ensure that "the rights and interests of labor are respected." Egan-Jones

provides an "overall" rating and specific ratings on the following five factors:

1. Voting process

2. Board independence

3. Board skills

4. Financial performance

5. Disclosure/controls

How, if at all, it combines the five factors into an overall rating is not publicly disclosed. All six

ratings are in the form of letter grades (with pluses and minuses).

e. Glass Lewis & Company

Glass Lewis & Company, which provides research and advisory services to institutional

investors, was established in 2003 by Lynn Turner, chief accountant of the Securities and

Exchange Commission during Arthur Levitt's chairmanship. It markets a governance ranking,

termed the "Board Accountability Index," that is derived from BCF's research, and which it

considers a "governance-enhanced" S&P 500 index. It uses a "modified market-cap weighting

algorithm" that adjusts an S&P 500 index company's weight by the presence or absence of five

of the six components of BCF's entrenchment index. The component that Glass Lewis excludes

is the supermajority requirement for charter amendments.

Table 1: Performance-Governance Relationship, Performance Measured by Return on Assets

This table presents the coefficients on the governance variable from equation (1a) estimated from the following system (p-values are in parentheses):

(1a) Performance = f_1(Ownership, Governance, Leverage, Log(Assets), Industry Performance, (R&D and Advertising Expenses) / Assets, Board Size, Stock Volatility, Treasury Stock / Assets, ϵ_1),

(1b) Governance = f_2 (Performance, Ownership, Leverage, (R&D and Advertising Expenses) / Assets, Board Size, Stock Volatility, Median Director Ownership Percentage, Percentage Independent Directors, ϵ_2)

(1c) Ownership = f_3 (Performance, Governance, Leverage, Log(Assets), Leverage, (R&D and Advertising Expenses) / Assets, Board Size, Stock Volatility, CEO Tenure / CEO Age, ϵ_3)

(1d) Leverage = f_4 (Performance, Governance, Ownership, Industry Leverage, Log(Assets), (R&D and Advertising Expenses) / Assets, Board Size, Stock Volatility, Altman's Z-Score, ϵ_4)

Operating performance ("ROA") is considered for three time periods: contemporaneous (ROA$_t$), next year (ROA$_{t+1}$), and next two years (ROA$_{t+1 \text{ to } t+2}$). The following governance variables are considered: the Gompers, Ishii and Metrick (2003) G-Index, the Bebchuk, Cohen and Ferrell (2004) E-Index, The Corporate Library (TCL) Benchmark score, the Brown and Caylor (2004) GovScore (data is available only for 2002), the dollar value of the median director's stock holdings, a dummy variable equal to 1 if the CEO is also the Chair of the board, 0 otherwise, and, the percent of directors who are independent. The sample consists of about 1500 of the largest U.S. corporations for the period 1998-2002; in some cases data constraints allow for consideration of only a shorter period.

Performance Measure	Governance Measure						
	GIM G-Index	BCF E-Index	TCL Benchmark Score	Brown & Caylor GovScore	$ Value of Median Director's Holdings	CEO-Chair Duality (=1 if Dual)	% of Directors Independent
ROA$_t$	-.013 (.01)	-.034 (.01)	-.005 (.05)	-.004 (.60)	.006 (.01)	-.029 (.00)	-.131 (.00)
ROA$_{t+1}$	-.011 (.03)	-.031 (.02)	-.003 (.27)	-.005 (.61)	.005 (.04)	-.029 (.00)	-.121 (.00)
ROA$_{t+1 \text{ to } t+2}$	-.004 (.16)	-.015 (.07)	-.002 (.21)	-	.002 (.16)	-.017 (.00)	-.068 (.01)

Table 2: Performance-Governance Relationship, Performance Measured by Stock Return

This table presents the coefficients on the governance variable from equation (1a) estimated from the following system (p-values are in parentheses):

(1a) Performance = f_1(Ownership, Governance, Leverage, Log(Assets), Industry Performance, (R&D and Advertising Expenses) / Assets, Board Size, Stock Volatility, Treasury Stock / Assets, ϵ_1),

(1b) Governance = f_2 (Performance, Ownership, Leverage, (R&D and Advertising Expenses) / Assets, Board Size, Stock Volatility, Median Director Ownership Percentage, Percentage Independent Directors, ϵ_2)

(1c) Ownership = f_3 (Performance, Governance, Leverage, Log(Assets), Leverage, (R&D and Advertising Expenses) / Assets, Board Size, Stock Volatility, CEO Tenure / CEO Age, ϵ_3)

(1d) Leverage = f_4 (Performance, Governance, Ownership, Industry Leverage, Log(Assets), (R&D and Advertising Expenses) / Assets, Board Size, Stock Volatility, Altman's Z-Score, ϵ_4)

Stock return ("RETURN") is considered for three time periods: contemporaneous (RETURN$_t$), next year (RETURN$_{t+1}$), and next two years (RETURN$_{t+1 \text{ to } t+2}$). The following governance variables are considered: the Gompers, Ishii and Metrick (2003) G-Index, the Bebchuk, Cohen and Ferrell (2004) E-Index, The Corporate Library (TCL) Benchmark score, the Brown and Caylor (2004) GovScore (data is available only for 2002), the dollar value of the median director's stock holdings, a dummy variable equal to 1 if the CEO is also the Chair of the board, 0 otherwise, and, the percent of directors who are independent. The sample consists of about 1500 of the largest U.S. corporations for the period 1998-2002; in some cases data constraints allow for consideration of only a shorter period.

Performance Measure	Governance Measure						
	GIM G-Index	BCF E-Index	TCL Benchmark Score	Brown & Caylor GovScore	$ Value of Median Director's Holdings	CEO-Chair Duality (=1 if Dual)	% of Directors Independent
RETURN$_t$	-.010 (0.75)	-.044 (0.59)	-.018 (0.12)	.011 (0.73)	.012 (0.44)	-.024 (0.70)	-.157 (0.53)
RETURN$_{t+1}$	-.013 (0.71)	-.021 (0.81)	.000 (0.97)	-.049 (0.41)	.008 (0.64)	-.064 (0.29)	-.250 (0.33)
RETURN$_{t+1 \text{ to } t+2}$	-.007 (0.64)	-.001 (0.97)	.003 (0.64)	--	.003 (0.72)	-.025 (0.30)	-.092 (0.40)

Table 3: Relationship Between Dollar Board Ownership And Return on Assets for the Subsequent Two Years

The sample consists of about 1500 of the largest U.S. corporations for 2002.

| Ownership Quartile	Mean Dollar Value of Median Director's Ownership	Industry-Adjusted Return on Assets for the Subsequent Two Years
Lowest Ownership Quartile	$94,366	-0.4%
Second	$462,758	-0.1%
Third	$1,267,629	0.2%
Highest Ownership Quartile	$7,185,716	0.3%

Table 4: Multinomial Logit Model for Disciplinary CEO Turnover

This table presents the results from multinomial logistic regressions estimating the probability of CEO Turnover. The dependent variables are type of CEO turnover: 1 = Disciplinary turnover, 2 = Non-disciplinary turnover, 0 = no turnover. No turnover is the baseline category. The following control variables are included but not shown in the table: Firm's stock market returns during the previous two years, CEO stock ownership, CEO tenure, firm size, industry returns during the previous two years, year dummy variables. p-values are in parentheses.

Dependent Variable: Disciplinary turnover

	GIM G-Index	BCF E-Index	TCL Benchmark Score	BC GovScore	$ Value of Median Director's Holdings	CEO-Chair Duality (=1 if Dual)	% of Directors Independent
				Governance Variable			
Governance	-0.040	-0.009	0.018	-0.064	-0.062	-0.790	-0.911
	(0.38)	(0.92)	(0.24)	(0.21)	(0.26)	(0.00)	(0.09)
(Return, Last 2 years x Governance)	-0.480	-0.877	0.033	0.038	-0.284	-1.381	-4.416
	(0.00)	(0.00)	(0.49)	(0.84)	(0.00)	(0.04)	(0.00)
Control Variables	Included	Included	Included	Included	Included	Included	Included
Years Included	2000-2002	2000-2002	2001-02	2002	2000-02	2000-02	2000-02
Sample Size	2,036	2,036	2,195	788	3,166	3,228	3,228

Table 5: Multinomial Logit Model for Non-disciplinary CEO Turnover

This table presents the results from multinomial logistic regressions estimating the probability of CEO Turnover. The dependent variables are type of CEO turnover: 1 = Disciplinary turnover, 2 = Non-disciplinary turnover, 0 = no turnover. No turnover is the baseline category. The following control variables are included but not shown in the table: Firm's stock market returns during the previous two years, CEO stock ownership, CEO tenure, firm size, industry returns during the previous two years, year dummy variables. p-values are in parentheses.

Dependent Variable: Non-disciplinary turnover

	Baseline Performance	GIM G-Index	BCF E-Index	TCL Benchmark Score	BC GovScore	$ Value of Median Director's Holdings	CEO-Chair Duality (=1 if Dual)	% of Directors Independent
				Governance Variable				
Governance	-	0.014	0.078	0.002	-0.067	-0.028	-1.133	0.236
		(0.70)	(0.26)	(0.87)	(0.13)	(0.55)	(0.00)	(0.57)
(Return, Last 2 years x	-	0.017	0.034	0.006	0.045	0.084	-0.152	-0.875
Governance)		(0.88)	(0.88)	(0.82)	(0.79)	(0.27)	(0.68)	(0.37)
Control Variables	Included	Included	Included	Included	Included	Included	Included	
Years Included	2000-02	2000, 2002	2000, 2002	2001-02	2002	2000-02	2000-02	2000-02
Sample Size	3,364	2,036	2,036	2,195	788	3,166	3,228	3,228

Figure 1: Relationship Between Dollar Board Ownership By Quartiles And Return on Assets for the Subsequent Two Years

Adjusted ROA $_{t+1 \text{ to } t+2}$ – **Sorted by Governance**

Director Dollar Ownership Quartiles
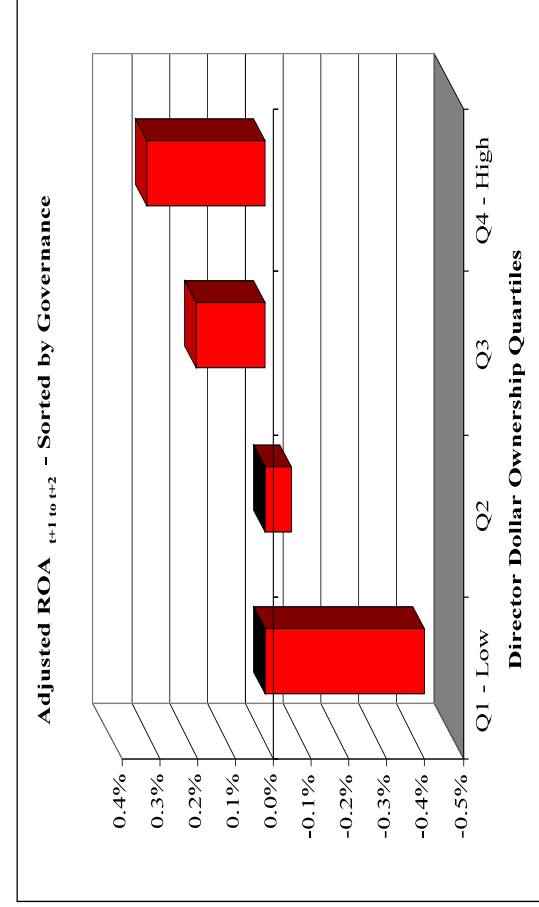
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