

Evolving Corporate Governance and Equity Prices The Recent Evidence^{**}

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ABSTRACT

The U.S. corporate failures in 2001-2002 led to intensified and persisting public concern over corporate governance practices, increased shareholder activism, and new regulations. The 2002-2005 period serves as a rich ground for studying how firms' changes in governance practices relate to their performance. First, how corporate governance momentum, an aggregate measure of a firm's change in corporate governance quality through time, is related to stock returns is studied. Our empirical evidence indicates that firms gaining positive governance momentum outperform firms gaining negative governance momentum in stock returns, and the evidence is concentrated in large firms. Next, the interaction between governance momentum and equity mispricing is investigated. The empirical evidence that, for undervalued firms, gaining positive governance momentum shortens the time to correct equity mispricing is concentrated in relatively large firms. Furthermore the evidence that, for overvalued firms, gaining negative governance momentum shortens the time to correct equity mispricing is concentrated in relatively small firms. Our findings suggest that, for firms undervalued or overvalued by the market, pursuing or keeping the best corporate governance practices is particularly important in their quest to improve shareholder value.

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⁺ This paper can be downloaded without charge at Social Science Research Network:
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The high-profile corporate failures in the United States in 2001-2002 led to intensified and persisting public concern of corporate governance at firms as well as new governance rules.¹ The rules include the Sarbanes-Oxley Act (SOX) and amendments to the stock exchange regulations. As expected, our data set of the corporate governance practices at about 4,330 firms from 2002 to 2005 indicates that corporate governance practices have changed significantly throughout this period.² For example, in 2002 only 42% of the S&P 500 firms disclosed that the outside directors meet without the CEO and how frequently they meet, and in 2005 about 98% of the S&P 500 firms have disclosed this practice. In 2002 about 36% of the S&P 500 firms disclosed that executives are subject to stock ownership guidelines, while in 2005 about 62% of the S&P 500 firms had this practice. Therefore the 2002-2005 period is particularly useful for studying how firms' corporate governance provisions have changed and their impact on performance.

Concerning corporate governance practices and firm performance, the rich contents of the 2002-2005 period can be studied from at least two different perspectives. First, one can study the correlation between corporate governance practices and firm performance in each year and examine whether or how the correlation has changed from year to year. Secondly, one can examine the changes in corporate governance practices from year to year and study the correlation between governance changes and firm performance. Most of the prior studies of corporate governance and firm performance take the first perspective, although the research designs may not necessarily

¹ For a review, see Holmström, Bengt R. and Steven N. Kaplan, 2003, "The State of U.S. Corporate Governance: What's Right and What's Wrong?", *Journal of Applied Corporate Finance*, Vol. 15, pp. 8-20.

² For recent studies of changes in board characteristics, refer to Chhaochharia, Vidhi and Yaniv Grinstein, 2004, "The Transformation of U.S. Corporate Boards: 1997-2003", *Working Paper*, Cornell University; Available at SSRN: <http://ssrn.com/abstract=556270>.

examine the correlation year by year. There is a large volume of literature from the last two decades over a variety of corporate governance topics.^{3,4}

We take the second perspective and study how changes in firms' corporate governance practices are related to one-year total shareholder returns.

Rather than focusing on a specific corporate governance practice, we use an aggregate measure derived from a full spectrum of corporate governance issues to specify a firm's overall quality of corporate governance practices.⁵

We then construct "governance momentum," an aggregate measure of a firm's change in the overall quality of corporate governance practices through time – a measure naturally derived from the aggregate measure of a firm's corporate governance practices at different time periods. A firm's positive (negative) governance momentum refers to the improvement (deterioration) in the overall quality of corporate governance practices throughout the measurement period.

Measured through a portfolio approach, the evidence indicates that firms gaining positive governance momentum outperform firms gaining negative governance momentum as measured either by industry-adjusted one-year total shareholder returns or by raw one-year total shareholder returns.

Furthermore, the evidence is concentrated in large firms. On the other hand, the evidence from small firms is at best mixed if not contrary to the evidence from large firms. It was argued in Holmström and Kaplan (2003) that the rules of SOX might hurt small firms due to the large fixed costs for enhancing

³ For a comprehensive review, refer to Shivdasani, Anil and Marc Zenner, 2004, "Best Practices in Corporate Governance: What Two Decades of Research Reveals", *Journal of Applied Corporate Finance*, Vol. 16, pp. 29-41.

⁴ For a more recent review, see Larcker, David F., Scott A. Richardson, and A. Irem Tuna, 2005, "How Important is Corporate Governance?", *Working Paper*, Stanford University and University of Pennsylvania; Available at SSRN: <http://ssrn.com/abstract=595821>.

⁵ For the pioneering work of this aggregate approach, see Gompers, Paul A., Joy L. Ishii, and Andrew Metrick, 2003, "Corporate Governance and Equity Prices", *Quarterly Journal of Economics*, Vol. 118, pp. 107-155.

internal control mechanisms. Our evidence from small firms supports their argument that the costs of SOX are perceived to outweigh its benefits for small firms.

Next, we study two research questions concerning the interaction between governance momentum and equity mispricing. The first question is, for firms undervalued by the market, whether gaining positive governance momentum shortens the time for equity mispricing to be corrected. The second question is, for firms overvalued by the market, whether gaining negative governance momentum shortens the time for equity mispricing to be corrected.

To introduce the foundation on which our research questions will be built, a brief review of equity mispricing and contrarian investment in the context of behavioral finance is presented. The contents of equity mispricing and governance momentum in each research question are then developed through case studies: an undervalued firm gaining positive governance momentum and an overvalued firm gaining negative governance momentum respectively. Finally, to conduct empirical investigation, our research questions are formulated as hypotheses from which testable predictions are derived and tested.

The empirical evidence supporting the hypothesis that, for undervalued firms, gaining positive governance momentum shortens the time to correct equity mispricing is concentrated in relatively large firms. On the other hand, the evidence supporting the hypothesis that, for overvalued firms, gaining negative governance momentum shortens the time to correct equity mispricing is concentrated in relatively small and micro firms. Our findings suggest that, for firms undervalued or overvalued by the market, pursuing or keeping the best corporate governance practices is particularly important in their quest to improve shareholder value.

CORPORATE GOVERNANCE DATA OF INSTITUTIONAL SHAREHOLDER SERVICES

Institutional Shareholder Services (ISS) first provided Corporate Governance Quotient (CGQ) in 2002 as a means to improve the interaction between shareholders and firms. CGQ provides institutional investors with a metric for evaluating corporate governance risk within their portfolios and corporations with a benchmark to measure their corporate governance practices against best practice standards and peer group practices. Corporate governance data from 2002 to 2004 provided by ISS is used. The data set includes the constituents of the Russell 3000 index and in total consists of about 4,330 firms.

[Insert table 1 here.]

Excluding the CGQ rating issues that were obsolete in 2005, the corporate governance practices of a firm in the ISS CGQ data set are measured with respect to 57 rating criteria. These 57 attributes are classified into eight categories: board structure and composition, directors and officers ownership, anti-takeover, charter and by-laws, audit/auditor independence, executive and director compensation, progressive practices, and director education. Table 1 provides a description of the 57 corporate governance topics.

The details of how ISS rates a firm's provision for each corporate governance topic can be found in an ISS publication.⁶ Comprehensive reviews and the

⁶ Institutional Shareholder Services, 2003, "*ISS Corporate Governance: Best Practices User Guides and Glossary*".

descriptive statistics of ISS governance data have been provided in recent studies^{7,8} where the authors investigated the relationship between corporate governance and firm performance using ISS data, and we refer the readers to them. The ISS data also provide us with an aggregate measure of the overall corporate governance quality for every firm. This data item is used as the aggregate measure of the overall corporate governance quality in our study. Other data items employed in this paper are obtained from Standard & Poor's COMPUSTAT database.

HOW IS A FIRM'S GOVERNANCE MOMENTUM RELATED TO PERFORMANCE? - EVIDENCE FROM STOCK PRICE PERFORMANCE

So far most prior studies have been focused on a specific corporate governance arrangement, either individually via a single governance mechanism or collectively using an aggregate rating of corporate governance quality. A very interesting and highly important subject that waits to be explored is how changes in corporate governance practices correlate to firm performance. As discussed before, the empirical evidence from the 2002-2005 period indicates that firms' corporate governance provisions have changed significantly. Therefore the 2002-2005 period serves as a unique and particularly rich ground for studying how changes in corporate governance relate to firm performance.

⁷ Brown, Lawrence D. and Marcus L. Caylor, 2004, "Corporate Governance and Firm Performance", *Working Paper*, Georgia State University; Available at SSRN: <http://ssrn.com/abstract=586423>.

⁸ Aggarwal, Reena and Rohan G. Williamson, 2005, "Did New Regulations Target the Relevant Corporate Governance Attributes?", *Working Paper*, Georgetown University; Available at SSRN: <http://ssrn.com/abstract=859264>.

We construct “governance momentum,” an aggregate measure of a firm’s change in corporate governance through time – a measure naturally derived from the aggregate measure of a firm’s corporate governance at different time periods. The governance momentum (Y02-Y03) of a firm is an annual measure and defined specifically as the change in the aggregate measure of the firm’s corporate governance at the 2003 annual meeting from that at the 2002 annual meeting. The same definition applies to governance momentum (Y03-Y04). A positive governance momentum implies that a firm has improved its overall governance quality through time, and a negative governance momentum implies that the overall governance quality deteriorated through time.⁹

A preliminary examination of the relation of governance momentum to firm performance correlates the governance momentum (Y02-Y03) to the one-year total shareholder return measured from FY02 to FY03. The same applies to the governance momentum (Y03-Y04) and the one-year total shareholder return from FY03 to FY04. It is known that the study of aggregate abnormal stock returns involving new regulation rules has a clustering problem. To mitigate the clustering problem, prior studies¹⁰ suggested a portfolio approach. By similar considerations, a portfolio approach is adopted in our study.

Our study sample, Ω , on the average consists of 4,330 firms. To implement a control over the firm size, the sample is divided into three sub-samples: $\Omega_{S\&P}$

⁹ Note that a firm’s changes in corporate governance through time can be voluntary changes, changes catalyzed by public concern or media exposure, or changes enforced by new regulations. Our measure of governance momentum does not distinguish these various reasons behind the changes.

¹⁰ Schwert, G. William, 1981, “Using Financial Data to Measure Effects of Regulation”, *Journal of Law and Economics*, Vol. 24, pp. 121-158.

1500, $\Omega_{R3000 - S\&P 1500}$, and $\Omega_{Outside R3000}$.¹¹ For each of the sub-samples, a high-governance-momentum portfolio and a low-governance-momentum portfolio are formed by first ranking firms in the sub-sample by the governance momentum and then selecting the top and bottom deciles of firms. In table 2, the equally weighted average of one-year total shareholder return and the equally weighted average of industry-adjusted¹² one-year total shareholder return over the high-governance-momentum portfolio and the low-governance-momentum portfolio are calculated. The differential, Δ , is calculated as the average return of the high-governance-momentum portfolio less the average return of the low-governance-momentum portfolio.¹³ A one-tail t test is used to determine whether the average return of the high-governance-momentum portfolio is significantly higher than the average return of the low-governance-momentum portfolio.

[Insert table 2 here.]

For S&P 1500, $\Omega_{S\&P 1500}$, the results indicate that the high-governance-momentum portfolio earns significantly higher raw as well as industry-adjusted returns than the low-governance-momentum portfolio. A recent

¹¹ $\Omega_{S\&P 1500}$ consists of firms belonging to the S&P 1500 index. $\Omega_{R3000 - S\&P 1500}$ consists of firms belonging to the Russell 3000 index, excluding the firms in the S&P 1500 index. Lastly, $\Omega_{Outside R3000}$ consists of about 1,330 firms outside the Russell 3000 index.

¹² A firm's industry-adjusted one-year total shareholder return is calculated as the one-year total shareholder return less the equally weighted average of firms in Ω within the same industry. The four-digit code of Standard & Poor's Global Industry Classification Standard (GICS[®]) is used as the industry classification.

¹³ Δ is then interpreted as the hedge return if a long/short position is taken on the high/low-governance-momentum portfolio.

study¹⁴ of the impact of 2002 governance rules on stock returns from November 2001 to October 2002 concluded that firms that need to make more changes to comply with the rules outperform firms that need to make fewer changes. And this evidence is particularly concentrated in large firms. Note that our governance momentum measure is similar to the measure of governance changes employed by the aforementioned study, but they differ in that our governance momentum measure consists of both mandated and voluntary changes in corporate governance. Regardless of the detailed difference in research designs, our findings are consistent with the evidence in that study. Furthermore, as we shall show next, the evidence that the high-governance-momentum portfolio outperforms the low-governance-momentum portfolio is concentrated in large firms (i.e., concentrated in $\Omega_{\text{S\&P 1500}}$, but not in $\Omega_{\text{R3000 - S\&P 1500}}$ or $\Omega_{\text{Outside R3000}}$).

The evidence from $\Omega_{\text{R3000 - S\&P 1500}}$ is at best mixed if not contrary to the evidence from $\Omega_{\text{S\&P 1500}}$. In particular, the study of governance momentum (Y02-Y03) indicates that the high-governance-momentum portfolio actually underperforms the low-governance-momentum portfolio. Holmström and Kaplan (2003) argued that the rules of SOX might hurt small firms due to the large fixed costs for enhancing internal control mechanisms. Our evidence from $\Omega_{\text{R3000 - S\&P 1500}}$, where the costs of SOX are perceived to outweigh its benefits for small firms, supports their argument. Furthermore, similar evidence was also reported in a recent study.¹⁵

If the argument of Holmström and Kaplan (2003) were extended naively to micro firms (i.e., $\Omega_{\text{Outside R3000}}$), one would expect the high-governance-

¹⁴ Chhaochharia, Vidhi and Yaniv Grinstein, 2005, "Corporate Governance and Firm Value - The Impact of the 2002 Governance Rules", *AFA 2006 Boston Meetings Paper*, Cornell University; Available at SSRN: <http://ssrn.com/abstract=556990> .

¹⁵ Chhaochharia and Grinstein (2005), cited earlier.

momentum portfolio to underperform the low-governance-momentum portfolio in $\Omega_{\text{Outside R3000}}$, at least for governance momentum (Y02-Y03). To the contrary, the evidence from $\Omega_{\text{Outside R3000}}$ indicates that the high-governance-momentum portfolio neither outperforms nor underperforms the low-governance-momentum portfolio significantly. This issue can be reconciled with the argument of Holmström and Kaplan (2003) by noting that the costly rules of SOX are more likely to apply only to a small portion of firms in $\Omega_{\text{Outside R3000}}$. In late 2004, the Securities and Exchange Commission (SEC) set up an advisory committee to examine the impact of SOX on small businesses. In late 2005, the committee recommended that micro firms with market capitalization of less than about \$100 million to \$125 million and annual revenue below \$125 million should be exempt from SOX 404.¹⁶ Furthermore, small firms with market capitalization of less than about \$750 million and sales below \$250 million should be exempt from the external audit requirement of SOX 404. According to the advisory committee's recommendation, only about 4% of the firms in $\Omega_{\text{R3000} - \text{S\&P 1500}}$ would be exempt from SOX 404, and only about 10 percent of the firms in $\Omega_{\text{R3000} - \text{S\&P 1500}}$ would be exempt from the external audit requirement. On the other hand, about 68 percent of the firms in $\Omega_{\text{Outside R3000}}$ would be exempt from SOX 404, and about 87 percent of the firms in $\Omega_{\text{Outside R3000}}$ would be exempt from the external audit requirement.

We conclude this section with a comment on the methodology. Our portfolio approach to the relation of governance momentum to stock price performance

¹⁶ Section 404 of Sarbanes-Oxley Act requires each annual report of an issuer to contain an internal control report. The report shall (1) state the responsibility of management for establishing and maintaining an adequate internal control structure and procedures for financial reporting; and (2) contain an assessment, as of the end of the issuer's fiscal year, of the effectiveness of the internal control structure and procedures of the issuer for financial reporting.

does not control for important firm characteristics such as the price-to-book multiple (P/B). On the other hand, there are reasons to believe that the common linear regression approach in controlling for P/B may not be a proper or effective approach. As we shall argue later, the interaction between governance momentum and equity mispricing cannot be ignored. Such non-trivial interaction is particularly important among overvalued and undervalued firms, which can be specified by groups of firms with relatively high P/B and low P/B respectively. These non-linear effects are not properly accounted for in the linear regression approach.

In addition to controlling for P/B in our prior study, we would like to investigate the non-trivial interaction between governance momentum and equity mispricing among overvalued and undervalued firms. For these purposes, the two-stage portfolio approach employed by Barth and Hutton¹⁷ is adopted. At the first stage, firms are ranked by P/B and divided into quintiles. At the second stage, firms in each P/B quintile from the first stage are ranked by governance momentum and further divided into ten deciles. There are a total of 50 portfolios, each specified by a P/B ranking followed by a governance momentum ranking.

The research question above comprises the main theme for the rest of this paper. However, the prior discussion reflects only the methodological motivation. Before we study this question and the research design, it is helpful to explain systematically the significance of and the motivation for the research question in the language of financial markets. We start with a brief review of equity mispricing, its behavioral-finance explanation, and the contrarian investment using the P/B multiple as the measure of equity mispricing. Then the research question of whether governance momentum

¹⁷ Barth, Mary E. and Amy P. Hutton, 2004, "Analyst Earnings Forecast Revisions and the Pricing of Accruals", *Review of Accounting Studies*, Vol. 9, pp. 59-96.

may shorten the time for equity mispricing to be corrected is motivated through two case studies: an undervalued firm gaining positive governance momentum and an overvalued firm gaining negative governance momentum.

EQUITY MISPRICING AND CONTRARIAN INVESTMENT

It has been long known to scholars and investment professionals that the contrarian investment strategies are profitable. A contrarian strategy takes a long position on value stocks (e.g., stocks of low P/B multiple) and a short position on glamour stocks (e.g., stocks of high P/B multiple).¹⁸ There is mounting empirical evidence^{19,20} for the profitability of contrarian strategies.

¹⁸ Other popular contrarian indicators of value and glamour stocks include price to earnings, price to cash flow, price to dividends, and historical price performance.

¹⁹ The important empirical evidence of contrarian anomaly in the U.S. market is summarized by the following studies:

- Basu, Sanjoy, 1977, “Investment Performance of Common Stocks in Relation to Their Price Earnings Ratios: A Test of the Efficient Market Hypothesis”, *Journal of Finance*, Vol. 32, pp. 663-682.
- Rosenberg, Barr, Kenneth Reid, and Ronald Lanstein, 1984, “Persuasive Evidence of Market Inefficiency”, *Journal of Portfolio Management*, Vol. 11, pp. 9-17.
- Jaffe, Jeffrey, Donald B. Keim, and Randolph Westerfield, 1989, “Earnings Yield, Market Values, and Stock Returns”, *Journal of Finance*, Vol. 44, pp. 135-148.
- Fama, Eugene F. and Kenneth R. French, 1992, “The Cross-Section of Expected Stock Returns”, *Journal of Finance*, Vol. 46, pp. 427-466.
- Chopra, Navin, Josef Lakonishok, and Jay R. Ritter, 1992, “Measuring Abnormal Performance: Do Stocks Overreact?”, *Journal of Financial Economics*, Vol. 31, pp. 235-268.
- Lakonishok, Josef, Andrei Shleifer, and Robert W. Vishny, 1994, “Contrarian Investment, Extrapolation, and Risk”, *Journal of Finance*, Vol. 49, pp. 1541-1578.
- La Porta, Rafael, 1996, “Expectations and the Cross-Section of Stock Returns”, *Journal of Finance*, Vol. 51, pp. 1715-1742.
- La Porta, Rafael, Josef Lakonishok, Andrei Shleifer, and Robert W. Vishny, 1997, “Good News for Value Stocks: Further Evidence on Market Efficiency”, *Journal of Finance*, Vol. 52, pp. 859-874.
- Barberis, Nicholas, Andrei Shleifer, and Robert W. Vishny, 1998, “A Model of Investor Sentiment”, *Journal of Financial Economics*, Vol. 49, pp. 307-343.

²⁰ The empirical evidence of contrarian anomaly in the non-U.S. market was reported in the following studies:

- Chan, Louis, Yasushi Hamano, and Josef Lakonishok, 1991, “Fundamentals and Stock Returns in Japan”, *Journal of Finance*, Vol. 46, pp. 1739-1764.

The profitability of contrarian strategies represents an anomaly to market efficiency. The prevailing explanation by behavioral finance²¹ is that irrational investors get excessively optimistic about stocks that have performed well in the past (i.e., glamour stocks), and glamour stocks become overvalued due to irrational investors' purchasing behavior. Similarly, irrational investors get excessively pessimistic about stocks that have performed poorly in the past (i.e., value stocks), and value stocks become undervalued due to irrational investors' selling behavior. Therefore a contrarian strategy against irrational investors is profitable. Consistent with the explanation of behavioral finance, Lakonishok, Shleifer and Vishny (1994)²² provided evidence that investors extrapolate past performance of a firm (measured in past growth in sales, earnings and cash flow) too far into the future, and a contrarian strategy bet against those extremely unsustainable expectations are profitable. Similar evidence was also reported in La Porta (1996) and in La Porta, Lakonishok, Shleifer and Vishny (1997).

One of the empirical challenges to behavioral finance is how to gauge the amount of equity mispricing (i.e., the amount of undervaluation or overvaluation) contained in value or glamour stocks. Although imperfect, the P/B multiple has frequently been employed by researchers to gauge equity mispricing. For example, in Lakonishok, Shleifer and Vishny (1994), firms were ranked by P/B and then divided into deciles. The decile of the highest P/B defined glamour stocks or overvalued firms, and the decile of the lowest P/B defined value stocks or undervalued firms. Their evidence indicates that

– Brouwer, Iwan, Jeroen van der Put, and Chris H. Veld, 1997, "Contrarian Investment Strategies In A European Context", *Journal of Business Finance and Accounting*, Vol. 24, pp. 1353-1366.

²¹ For a review of the irrational investors approach to the contrarian anomaly in behavioral finance, see Baker, Malcolm P., Richard S. Ruback, and Jeffrey A. Wurgler, "Behavioral Corporate Finance: A Survey", forthcoming in Eckbo, B., Ed., *Handbook in Corporate Finance: Empirical Corporate Finance* (Amsterdam: Elsevier, 2006).

²² Lakonishok, Shleifer and Vishny (1994), cited earlier.

the contrarian strategy using the P/B multiple is profitable and the correction of equity mispricing can take up to five years.

We conclude this brief review by presenting similar empirical evidence obtained from our data set. Firms are ranked by P/B and divided into quintiles. The quintile of the highest P/B comprises glamour stocks and the quintile of the lowest P/B comprises value stocks. For P/B of FY02 (FY03), the one-year total shareholder return from FY02 to FY03 (FY03 to FY04) is measured.

[Insert table 3 here.]

To implement a control over various firm sizes, seven sub-samples are defined out of the study sample Ω : $\Omega_{\text{S\&P 1500}}$, $\Omega_{\text{S\&P 500}}$, $\Omega_{\text{S\&P 400}}$, $\Omega_{\text{S\&P 600}}$, $\Omega_{\text{R3000 - S\&P 1500}}$, Ω_{R3000} , and $\Omega_{\text{Outside R3000}}$.²³ For each sub-sample, the contrarian strategy is applied and the equally weighted average of one-year total shareholder returns is calculated. As in Lakonishok, Shleifer and Vishny (1994), in table 3 both the calculation based on industry-adjusted stock returns and the calculation based on raw stock returns are presented for completeness. The differential, Δ , in table 3 is the hedge return. A one-tail t test is used to determine whether the average return of value stocks is significantly higher than the average return of glamour stocks.

²³ $\Omega_{\text{S\&P 1500}}$ consists of firms belonging to the S&P 1500 index. $\Omega_{\text{S\&P 500}}$ consists of firms belonging to the S&P 500 index. $\Omega_{\text{S\&P 400}}$ consists of firms belonging to the S&P 400 index. $\Omega_{\text{S\&P 600}}$ consists of firms belonging to the S&P 600 index. $\Omega_{\text{R3000 - S\&P 1500}}$ consists of firms belonging to the Russell 3000 index while outside the S&P 1500 index. Ω_{R3000} consists of firms belonging to the Russell 3000 index. Lastly, $\Omega_{\text{Outside R3000}}$ consists of firms outside the Russell 3000 index.

Consistent with Lakonishok, Shleifer and Vishny (1994), our evidence in table 3 for equity mispricing and the contrarian anomaly as gauged by the P/B multiple is strong, regardless of firm size. It is interesting to note that, compared to Lakonishok, Shleifer and Vishny (1994), our data set is much more recent and still the evidence remains strong. This further confirms the persisting nature of contrarian anomaly and the continuing existence of equity mispricing.²⁴

CASE STUDY: AN UNDERVALUED FIRM GAINING POSITIVE GOVERNANCE MOMENTUM

Our prior study of governance momentum versus stock price performance indicates that the market generally applauds firms making improvements in corporate governance practices if the benefits outweigh the costs. Compared to an average firm making governance improvements, the same positive governance momentum gained by an undervalued firm should have more impact on the market. Intuitively, for an undervalued firm, making governance improvements should also help restore investors' confidence. In the language of behavioral finance, gaining positive governance momentum for an undervalued firm should help remove excessive investors' pessimism and correct the equity mispricing contained in the stock price.

Furthermore, gaining positive governance momentum for an undervalued firm should also help correct the amount of equity mispricing caused by unreliable financial reporting/earnings management or information

²⁴ The persistence of equity mispricing and contrarian anomaly is known as "limits to arbitrage" in behavioral finance. Lakonishok, Shleifer and Vishny (1994) suggested that such limits to arbitrage can be explained by the preference of both individual and institutional investors for glamour strategy and by their avoidance of value strategy. For a review of limits to arbitrage, also see Barberis, Nicholas and Richard H. Thaler, "A Survey of Behavioral Finance", in Constantinides, George M., Milton Harris, and René M. Stulz, Ed., *Handbook of the Economics of Finance* (Amsterdam: Elsevier, 2003).

asymmetry. Indeed, prior empirical studies show that many corporate governance topics related to board structure, audit committee structure, executive and director compensation have influence on earnings management or the informativeness of earnings. For topics related to board characteristics and audit committee, one study²⁵ found that audit committee independence is negatively related to earnings management and CEO sitting on the compensation committee is positively related to earnings management. Similar findings are also reported²⁶ that earnings are more informative when the board of directors is more independent²⁷, the board is more active (measured in number of board meetings), the audit committee is more independent and active, CEO and chairman of the board are separated. For related party transactions, there is empirical evidence²⁸ that it is associated with earnings management. For multiple classes of stocks with differential voting rights, it is found²⁹ that earnings are less informative when voting rights and cash flow rights are separated in firms with dual-class stock. For executive compensation, several prior studies^{30,31,32} found that high incentive

²⁵ Klein, April, 2002, "Audit Committee, Board of Director Characteristics, and Earnings Management", *Journal of Accounting and Economics*, Vol. 33, pp. 375-400.

²⁶ Anderson, Kirsten L., Daniel N. Deli, and Stuart L. Gillan, 2003, "Boards of Directors, Audit Committees, and the Information Content of Earnings", *Weinberg Center for Corporate Governance Working Paper No. 2003-04*, Georgetown University and Arizona State University; Available at SSRN: <http://ssrn.com/abstract=444241>.

²⁷ For evidence from UK firms, see Peasnell, Ken V., Peter F. Pope, and Steven Young, 2005, "Board Monitoring and Earnings Management: Do Outside Directors Influence Abnormal Accruals?", *Journal of Business Finance and Accounting*, Vol. 32, pp. 1311-1346.

²⁸ Gordon, Elizabeth A. and Elaine Henry, 2005, "Related Party Transactions and Earnings Management", *Working Paper*, The State University of New Jersey at Rutgers and University of Miami; Available at SSRN: <http://ssrn.com/abstract=612234>.

²⁹ Francis, Jennifer, Katherine Schipper, and Linda Vincent, 2005, "Earnings and Dividend Informativeness When Cash Flow Rights Are Separated From Voting Rights", *Journal of Accounting and Economics*, Vol. 39, pp. 329-360.

³⁰ Peng, Lin and Ailsa A. Röell, 2004, "Executive Pay, Earnings Manipulation and Shareholder Litigation", *AFA 2005 Philadelphia Meetings*, City University of New York and Princeton University; Available at SSRN: <http://ssrn.com/abstract=488148>.

³¹ Cheng, Qiang and Terry D. Warfield, 2005, "Equity Incentives and Earnings Management", *The Accounting Review*, Vol. 80, pp. 441-476.

³² For a comprehensive review, see Jensen, Michael C., Kevin J. Murphy, and Eric G. Wruck, 2004, "Remuneration: Where We've Been, How We Got to Here, What are the Problems, and

pay is related to earnings management. For director compensation, there is evidence³³ that incentive compensation of outside directors is positively related to the reliability of financial reporting.

Similarly, corporate governance topics related to antitakeover can influence equity mispricing through the reduction of information asymmetry. A recent study³⁴ of the interaction between takeover protections and equity mispricing argued that, for undervalued firms with ample takeover protections, the empowered managers will not worry much about the firm being taken over and losing their job, and therefore have little incentive to correct the undervaluation by sharing the information with the market. Hence it takes more time for equity mispricing to be corrected. On the other hand, for undervalued firms with few takeover protections, the managers have incentive and are pressured to share the information with the market. Hence it takes less time for equity mispricing to be corrected. The same study further provided supporting evidence through the mean reversion of stock returns.

The prior discussions suggest that it is important to conduct empirical investigation on whether gaining positive governance momentum for an undervalued firm shortens the time to correct equity mispricing. Below a case study of an undervalued firm gaining positive momentum is presented to better illustrate this research question.

How to Fix Them”, *Harvard NOM Working Paper No. 04-28*, Harvard University; Available at SSRN: <http://ssrn.com/abstract=561305>.

³³ Boumosleh, Anwar Samir, 2005, “Director Compensation and Board Effectiveness”, *Working Paper*, University of Alabama; Available at SSRN: <http://ssrn.com/abstract=674161>.

³⁴ Chae, Joon and Dong Wook Lee, 2005, “Corporate Governance and Equity Mispricing”, *Working Paper*, University at Buffalo and University of Kentucky; Available at SSRN: <http://ssrn.com/abstract=805327>.

[Insert figure 1 here.]

The firm, United Rentals Inc., is a member of the S&P 400 index, belongs to the GICS 2010 industry group (industry description: capital goods), and its fiscal year ends in December. The P/B multiple as of the 2002 fiscal year end is 0.62, which is low relative to other members of the S&P 400 index.

Therefore United Rentals Inc. as of the 2002 fiscal year end is classified as an undervalued firm. In figure 1, the historical prices of United Rentals Inc., the S&P 400 index, and the sub-index that comprises of the S&P 400 members in the same industry group are presented from 1/1/2003 to 12/31/2003. The interpretation of figure 1 is that \$1.00 is invested in United Rentals Inc., the S&P 400 index and the sub-index respectively on the first trading day of January 2003. Therefore, the price at any time less \$1.00, in percentage notation, is interpreted as the year-to-date stock return.

In figure 1, the time of United Rentals' annual shareholder meeting in 2003 and the time of the associated proxy statement filed at SEC are also specified. To illustrate the corporate governance improvements made by United Rentals Inc., the changes in corporate governance practices from its 2002 annual shareholder meeting to 2003 annual shareholder meeting are detailed in table 4. It is evident that United Rentals Inc. has gained significant positive governance momentum as of its 2003 annual shareholder meeting. Although imperfect, it is a good approximation to assume that much of the positive governance momentum gained by United Rentals Inc. was perceived/absorbed by the market roughly around the time period between the proxy filing date and the annual shareholder meeting as defined in figure 1.

[Insert table 4 here.]

United Rentals Inc. as specified in figure 1 and table 4 fits the description of an undervalued firm gaining positive governance momentum. The details of figure 1 further suggest that United Rentals' stock performance was distinctly better after gaining positive governance momentum. During the time period between Jan. 1, 2003 and the proxy filing date, United Rentals' stock performance just met that of the S&P 400 index or the sub-index defined by GICS 2010. During the time period between annual shareholder meeting and Dec. 31, 2003, United Rentals Inc. outperformed both the S&P 400 index and the sub-index.

More insights about equity mispricing can be gained by extending the tracking of historical prices to a three-year horizon. Figure 2 is the expansion of figure 1 from Jan. 1, 2003 to Dec. 31, 2005. Several interesting observations are in order. In the first year of the three-year horizon (i.e., Jan. 1 – Dec. 31, 2003), United Rentals' stock price almost reached the maximum price that was achieved throughout the three-year horizon. Furthermore, after reaching the peak in the first year, United Rentals' stock price simply fluctuated steadily between \$1.50 and \$2.00 throughout the last two years out of the three-year horizon (i.e., Jan. 1, 2004 – Dec. 31, 2005). On the other hand, it took more than three years for both the S&P 400 index and the sub-index to reach the same level of performance achieved by United Rentals Inc. in just one year.

[Insert figure 2 here.]

The observations drawn from figure 2 suggest that, while United Rentals Inc. was undervalued as of Jan. 1, 2003, much of the equity mispricing was corrected in the first year out of the three-year horizon. Compared with the evidence from Lakonishok, Shleifer and Vishny (1994) where the correction of equity mispricing can take up to five years, figure 2 suggests that the time for United Rentals' equity mispricing to be corrected seems shorter than that of an average undervalued firm without gaining significant governance momentum.

In summary, the observations from figures 1 and 2 suggest that the time for United Rentals' equity mispricing to be corrected is shorter than expected, and United Rentals' gaining positive governance momentum may be the cause. To further develop the research question, note that United Rentals' abnormal one-year stock return in figure 1 should in principle include both the intrinsic³⁵ value creation perceived by the market in the corporate governance improvements and the correction of equity mispricing over time according to the contrarian anomaly. Furthermore, the amount of contrarian profit contained in United Rentals' abnormal one-year stock return should be greater than expected because the time for equity mispricing to be corrected is shortened by gaining positive governance momentum. Later on, this research question will be formulated more precisely and a research design adopting a two-stage portfolio approach will be used to examine empirical evidence from our data set.

CASE STUDY: AN OVERVALUED FIRM GAINING NEGATIVE GOVERNANCE MOMENTUM

³⁵ The word, "intrinsic", emphasizes the amount of value creation perceived by the market as if equity mispricing does not exist.

Similar to the previous section, the case study of an overvalued firm gaining negative governance momentum is presented. Compared to an average firm of deteriorating corporate governance, the same negative governance momentum gained by an overvalued firm should have more impact on the market. Intuitively, for an overvalued firm, revealing corporate governance deterioration could damage investors' confidence and force irrational investors out of extremely unreasonable expectations about the firm. In the language of behavioral finance, gaining negative governance momentum for an overvalued firm should reduce excessive investors' optimism and help correct the equity mispricing contained in the stock price. For example, after the disclosure of a high-profile related party transaction involving the CEO or directors, over-optimistic investors become worried of the extent of value destruction and have strong incentive to re-value the firm based on rational expectations.

As reviewed earlier, deteriorating corporate governance practices related to board structure, audit committee structure, executive and director compensation in general have negative influence on financial reporting quality, and therefore could worsen the amount of equity mispricing caused by unreliable financial reporting/earnings management. However, in the case of overvalued firms, we assume that this influence is negligible compared to the impact of gaining negative governance momentum on irrational investors.³⁶ Similarly, deteriorating antitakeover provisions (i.e., stronger takeover protections) in general could worsen equity mispricing through the influence of information asymmetry. However, for overvalued firms, it is expected that this effect is also negligible. In fact, there is empirical evidence³⁷ that, regarding overvalued firms, takeover protections have a

³⁶ If this assumption were not valid, we would expect to find no empirical evidence for the research question later on.

³⁷ Chae and Lee (2005), cited earlier.

much weaker role in correcting equity mispricing through the diffusion of information.

We would like to conduct empirical investigation on whether gaining negative governance momentum for an overvalued firm shortens the time to correct equity mispricing. Below a case study of an overvalued firm gaining negative momentum is presented to better illustrate our second research question.

This section is similar to the previous section in certain contents and therefore redundancy will be avoided when appropriate.

The firm, Magic Lantern Group Inc. belongs to the GICS 2550 industry group (industry description: retailing), and its fiscal year ends in December. The P/B multiple as of the 2003 fiscal year end is 8.99, which is high relative to members of the Russell 3000 index while outside the S&P 1500 index (i.e., the “R3000 – S&P1500” index). Therefore Magic Lantern Group Inc. as of the 2003 fiscal year end is classified as an overvalued firm. In figure 3, the historical prices of Magic Lantern Group Inc., the “R3000 – S&P1500” index, and the sub-index that comprises of the “R3000 – S&P1500” members in the same industry group are presented from Jan. 1, 2004 to Dec. 31, 2004. The interpretation of figure 3 is that \$1.00 is invested in Magic Lantern Group Inc., the “R3000 – S&P1500” index and the industry sub-index respectively on the first trading day of January 2004.

[Insert figure 3 here.]

In figure 3, the time of Magic Lantern Group’s annual shareholder meeting in 2004 and the time of the proxy statement filed at SEC are also specified. To illustrate the corporate governance deteriorations associated with Magic

Lantern Group Inc., the changes in corporate governance practices from its 2003 annual shareholder meeting to 2004 annual shareholder meeting are detailed in table 5. Magic Lantern Group Inc. has gained notable negative governance momentum as of its 2004 annual shareholder meeting. It is a good approximation to assume that much of the negative governance momentum gained by Magic Lantern Group Inc. was perceived/absorbed by the market roughly around the time period between the proxy filing date and the annual shareholder meeting as defined in figure 3.

[Insert table 5 here.]

Magic Lantern Group Inc. as specified in figure 3 and table 5 fits the description of an overvalued firm gaining negative governance momentum. Figure 3 suggests that Magic Lantern Group's stock performance significantly worsened shortly after gaining negative governance momentum. During the time period between Jan. 1, 2004 and the proxy filing date, Magic Lantern Group's stock performance was about the same as that of the industry sub-index defined by GICS 2550. During the time period between annual shareholder meeting and Dec. 31, 2004, Magic Lantern Group Inc. underperformed the industry sub-index (and the "R3000 – S&P1500" index).

The three-year horizon of historical prices is not presented. In fact, Magic Lantern Group Inc. was delisted from the American Stock Exchange in mid-2005. In summary, the observations from figure 3 and table 5 highly motivate us to study whether the time for Magic Lantern Group's equity mispricing to be corrected is shorter than expected, and Magic Lantern Group's gaining negative governance momentum could be the cause. To further develop our second research question, note that Magic Lantern Group's abnormal one-

year stock return in figure 3 should include both the intrinsic value destruction perceived by the market in the corporate governance deteriorations and the correction of equity mispricing over time according to the contrarian anomaly. Furthermore, the amount of contrarian profit contained in Magic Lantern Group's abnormal one-year stock return would be greater than expected because the time to correct equity mispricing is shortened by gaining negative governance momentum.

GOVERNANCE MOMENTUM MATTERS DURING EQUITY MISPRICING – MODELED VIA A CONTRARIAN PORTFOLIO APPROACH

In this section, the two-stage portfolio approach described before is adopted to conduct empirical investigation on the two research questions developed in prior case studies. To study the interaction between governance momentum and equity mispricing, first a way to specify equity mispricing among firms is required. For this purpose, the contrarian portfolio approach using the P/B multiple from Lakonishok, Shleifer and Vishny (1994) is adopted. This contrarian portfolio thus constitutes the first portfolio in the two-stage portfolio approach.

The quintile of the lowest P/B from our contrarian portfolio specifies the set of undervalued firms. We formulate the first research question as the following hypothesis from which testable predictions are derived.

Hypothesis I For undervalued firms gaining positive governance momentum, the improvements in corporate governance shorten the time for equity mispricing to be corrected.

According to Lakonishok, Shleifer and Vishny (1994), the correction of equity mispricing can take up to five years. By taking a long position and measuring the one-year stock return³⁸ covering the period where positive governance momentum occurs, hypothesis I implies that the abnormal one-year profit should be greater than the sum of the intrinsic³⁹ abnormal profit associated with the contrarian anomaly and the intrinsic⁴⁰ value creation associated with positive governance momentum. This greater-than-expected profit is associated with the stock's finding its way upward to true value at a faster-than-expected pace after the firm gains positive governance momentum.

In terms of the two-stage portfolio approach, this greater-than-expected profit can be formulated as a testable prediction. Denote $\mathbf{L}_{\text{Contrarian}}$ as the abnormal one-year stock return from taking a long position on the portfolio of undervalued firms by applying the contrarian strategy to the firm sample. Denote \mathbf{L}_{GM} as the abnormal one-year stock return from taking a long position on the portfolio of the highest governance momentum by applying the governance momentum strategy to the firm sample. Denote $\mathbf{L}_{\text{Combined}}$ as the abnormal one-year stock return from taking a long position on the portfolio from the two-stage portfolio approach by first applying the contrarian strategy to the firm sample and then selecting the sub portfolio of the highest governance momentum by applying the governance momentum strategy to the portfolio of undervalued firms from the first stage. The testable prediction⁴¹ is: $\mathbf{L}_{\text{Combined}} > \mathbf{L}_{\text{Contrarian}} + \mathbf{L}_{\text{GM}}$.

Similarly, the quintile of the highest P/B from our contrarian portfolio specifies the set of over-valued firms. We formulate the second research

³⁸ One-year stock return is a short-run measure relative to a five-year horizon.

³⁹ It refers to the contrarian profit in a long position as if positive governance momentum does not occur.

⁴⁰ It refers to the value perceived by the market in a long position as if no equity mispricing exists.

⁴¹ Also see Barth and Hutton (2004), cited earlier.

question as the following hypothesis from which testable predictions are derived.

Hypothesis II For overvalued firms gaining negative governance momentum, the deteriorations in corporate governance shorten the time for equity mispricing to be corrected.

Similarly, by taking a short position and measuring the one-year stock return covering the period where negative governance momentum occurs, hypothesis II implies that the abnormal one-year profit should be greater than the sum of the intrinsic⁴² abnormal profit associated with the contrarian anomaly and the intrinsic⁴³ value destruction associated with negative governance momentum. This greater-than-expected profit is associated with the stock's finding its way downward to true value at a faster-than-expected pace after the firm gains negative governance momentum.

This greater-than-expected profit can be formulated as a testable prediction. Denote $S_{\text{Contrarian}}$ as the abnormal one-year stock return from taking a short position on the portfolio of overvalued firms by applying the contrarian strategy to the firm sample. Denote S_{GM} as the abnormal one-year stock return from taking a short position on the portfolio of the lowest governance momentum by applying the governance momentum strategy to the firm sample. Denote S_{Combined} as the abnormal one-year stock return from taking a short position on the portfolio from the two-stage portfolio approach by first applying the contrarian strategy to the firm sample, and then selecting the sub-portfolio of the lowest governance momentum by applying the governance

⁴² It refers to the contrarian profit in a short position as if negative governance momentum does not occur.

⁴³ It refers to the value perceived by the market in a short position as if no equity mispricing exists.

momentum strategy to the portfolio of overvalued firms from the first stage. The testable prediction⁴⁴ is: $\mathbf{S}_{\text{Combined}} > \mathbf{S}_{\text{Contrarian}} + \mathbf{S}_{\text{GM}}$.

If both a long position is taken on the portfolio from each strategy of hypothesis I and a short position is taken on the portfolio from the respective strategy of hypothesis II, the hedge returns from each pair of long and short portfolios are: $\mathbf{H}_{\text{Contrarian}} = \mathbf{L}_{\text{Contrarian}} + \mathbf{S}_{\text{Contrarian}}$, $\mathbf{H}_{\text{GM}} = \mathbf{L}_{\text{GM}} + \mathbf{S}_{\text{GM}}$, $\mathbf{H}_{\text{Combined}} = \mathbf{L}_{\text{Combined}} + \mathbf{S}_{\text{Combined}}$. Therefore another testable prediction of assuming both hypotheses is: $\mathbf{H}_{\text{Combined}} > \mathbf{H}_{\text{Contrarian}} + \mathbf{H}_{\text{GM}}$.

In this section, the prediction, $\mathbf{H}_{\text{Combined}} > \mathbf{H}_{\text{Contrarian}} + \mathbf{H}_{\text{GM}}$, is tested. To implement a control over various firm sizes, seven sub-samples are defined out of the study sample Ω . Both the calculation based on industry-adjusted stock returns and the calculation based on raw stock returns are presented for completeness.

[Insert table 6 here.]

In table 6, hedge returns calculated based on industry-adjusted stock returns are presented for each sub-sample. For each sub-sample, two tests are performed due to data availability of governance momentum. One test is based on the P/B of FY02, governance momentum (Y02-Y03), and the one-year total shareholder return measured from FY02 to FY03. The second test is based on the P/B of FY03, governance momentum (Y03-Y04), and the one-year total shareholder return measured from FY03 to FY04. The hedge returns listed on columns A, B, and C refer to $\mathbf{H}_{\text{Contrarian}}$, \mathbf{H}_{GM} , and $\mathbf{H}_{\text{Combined}}$,

⁴⁴ Also see Barth and Hutton (2004), cited earlier.

respectively.⁴⁵ In addition, two differential measures, Δ_{Combined} and Δ_{Abnormal} , are calculated. Δ_{Combined} is defined as $\Delta_{\text{Combined}} = \mathbf{H}_{\text{Combined}} - \mathbf{H}_{\text{Contrarian}}$. The measure Δ_{Combined} does not test the prediction; it simply displays the extent to which the combined investment strategy outperforms the contrarian investment strategy. Δ_{Abnormal} is defined as $\Delta_{\text{Abnormal}} = \mathbf{H}_{\text{Combined}} - \mathbf{H}_{\text{Contrarian}} - \mathbf{H}_{\text{GM}}$. This measure, Δ_{Abnormal} , tests the prediction and $\Delta_{\text{Abnormal}} > 0$ would confirm the prediction.

In table 6, there are 14 tests of $\Delta_{\text{Abnormal}} > 0$ in total performed over the seven sub-samples. Eleven out of the 14 tests confirm the prediction, $\Delta_{\text{Abnormal}} > 0$ (i.e., $\mathbf{H}_{\text{Combined}} > \mathbf{H}_{\text{Contrarian}} + \mathbf{H}_{\text{GM}}$). Furthermore, eight out of the 11 confirmations for $\Delta_{\text{Abnormal}} > 0$ have $\Delta_{\text{Abnormal}} > 10\%$. Except for the two tests in $\Omega_{\text{S\&P 400}}$ and one test in $\Omega_{\text{R3000 - S\&P 1500}}$, all the tests in $\Omega_{\text{S\&P 1500}}$, $\Omega_{\text{S\&P 500}}$, $\Omega_{\text{S\&P 600}}$, Ω_{R3000} , and $\Omega_{\text{Outside R3000}}$ confirm $\Delta_{\text{Abnormal}} > 0$. These observations suggest that the evidence supporting our two hypotheses is concentrated in relatively large or small firms. For example, within the scope of $\Omega_{\text{S\&P 1500}}$, the evidence of $\Delta_{\text{Abnormal}} > 0$ is concentrated in $\Omega_{\text{S\&P 500}}$ and $\Omega_{\text{S\&P 600}}$, but not in $\Omega_{\text{S\&P 400}}$. Within the scope of Ω , the evidence of $\Delta_{\text{Abnormal}} > 0$ is concentrated in $\Omega_{\text{S\&P 1500}}$ and $\Omega_{\text{Outside R3000}}$, but the evidence is weak in $\Omega_{\text{R3000 - S\&P 1500}}$.

[Insert table 7 here.]

⁴⁵ In tables 6 and 7, a one-tail t test is used to determine whether the equally weighted average return from the long portfolio is significantly higher than the equally weighted average return from the short portfolio.

Table 7 displays the same measures calculated based on raw returns for informative purpose. The evidence of $\Delta_{\text{Abnormal}} > 0$ is qualitatively the same as the evidence from table 6. On the other hand, it is observed that $\Delta_{\text{Combined}} = \mathbf{H}_{\text{Combined}} - \mathbf{H}_{\text{Contrarian}} > 0$ in all sub-samples except for one test in $\Omega_{\text{S\&P 400}}$ and one test in $\Omega_{\text{R3000 - S\&P 1500}}$. It indicates that the combined investment strategy generally outperforms the contrarian investment strategy.

Note that $\mathbf{H}_{\text{Combined}} > \mathbf{H}_{\text{Contrarian}} + \mathbf{H}_{\text{GM}}$ implies $\mathbf{L}_{\text{Combined}} > \mathbf{L}_{\text{Contrarian}} + \mathbf{L}_{\text{GM}}$ or $\mathbf{S}_{\text{Combined}} > \mathbf{S}_{\text{Contrarian}} + \mathbf{S}_{\text{GM}}$, but not necessarily both. To better understand the interaction between governance momentum and equity mispricing among undervalued firms and among overvalued firms, $\mathbf{L}_{\text{Combined}} > \mathbf{L}_{\text{Contrarian}} + \mathbf{L}_{\text{GM}}$ and $\mathbf{S}_{\text{Combined}} > \mathbf{S}_{\text{Contrarian}} + \mathbf{S}_{\text{GM}}$ will be tested separately in the next two sections.

POSITIVE GOVERNANCE MOMENTUM – AN EFFECTIVE DEVICE TO UNLOCK SHAREHOLDER VALUE OUT OF UNDERVALUED FIRMS

To provide empirical evidence for hypothesis I regarding the interaction between governance momentum and equity mispricing for undervalued firms, we test the prediction, $\mathbf{L}_{\text{Combined}} > \mathbf{L}_{\text{Contrarian}} + \mathbf{L}_{\text{GM}}$. For each sub-sample, each strategy is applied and the return from the long portfolio of each strategy is calculated.

[Insert table 8 here.]

In table 8, returns from the long portfolios calculated based on industry-adjusted stock returns are presented for each sub-sample. The returns listed on columns A, B, and C refer to $\mathbf{L}_{\text{Contrarian}}$, \mathbf{L}_{GM} , and $\mathbf{L}_{\text{Combined}}$, respectively.⁴⁶ In addition, two differential measures, Δ_{Combined} and Δ_{Abnormal} , are calculated. Δ_{Combined} is defined as $\Delta_{\text{Combined}} = \mathbf{L}_{\text{Combined}} - \mathbf{L}_{\text{Contrarian}}$. The measure Δ_{Combined} does not test the prediction; it simply displays the extent to which the combined investment strategy outperforms the contrarian investment strategy. Δ_{Abnormal} is defined as $\Delta_{\text{Abnormal}} = \mathbf{L}_{\text{Combined}} - \mathbf{L}_{\text{Contrarian}} - \mathbf{L}_{\text{GM}}$. This measure, Δ_{Abnormal} , tests the prediction and $\Delta_{\text{Abnormal}} > 0$ would confirm the prediction.

In table 8, there are 14 tests of $\Delta_{\text{Abnormal}} > 0$ performed over the seven sub-samples. The evidence of $\Delta_{\text{Abnormal}} > 0$ is concentrated in $\Omega_{\text{S\&P 500}}$ and $\Omega_{\text{S\&P 1500}}$, but is at best mixed in other sub-samples. Furthermore, for $\Omega_{\text{S\&P 500}}$, $\mathbf{L}_{\text{Combined}} - \mathbf{L}_{\text{Contrarian}} - \mathbf{L}_{\text{GM}} = 40.3\%$ and 16.8% for the two tests, respectively. It suggests that the evidence supporting hypothesis I is concentrated in relatively large firms. For example, within the scope of $\Omega_{\text{S\&P 1500}}$, the evidence of $\Delta_{\text{Abnormal}} > 0$ is concentrated in $\Omega_{\text{S\&P 500}}$, but not in $\Omega_{\text{S\&P 400}}$ and $\Omega_{\text{S\&P 600}}$. Within the scope of Ω , the evidence of $\Delta_{\text{Abnormal}} > 0$ is concentrated in $\Omega_{\text{S\&P 1500}}$ and $\Omega_{\text{Outside R3000}}$, but not in $\Omega_{\text{R3000} \cdot \text{S\&P 1500}}$ and $\Omega_{\text{Outside R3000}}$.

[Insert table 9 here.]

⁴⁶ In tables 8 and 9, one-tail t test is used to determine whether the equally weighted average return from the long portfolio is significantly higher than the equally weighted average return from the sub sample.

Table 9 displays the same measures calculated based on raw returns for informative purposes. Δ_{Abnormal} is not calculated because it is a biased measure and therefore table 9 is not intended for testing the hypothesis. On the other hand, it is observed that $\Delta_{\text{Combined}} = \mathbf{L}_{\text{Combined}} - \mathbf{L}_{\text{Contrarian}} > 0$ in all sub-samples except for $\Omega_{\text{R3000} \cdot \text{S\&P 1500}}$ and Ω_{R3000} . The outperformance of the combined investment strategy over the contrarian investment strategy is stronger among large firms.

NEGATIVE GOVERNANCE MOMENTUM – FURTHER DETERIORATION OF SHAREHOLDER VALUE FOR OVERVALUED FIRMS

Similarly, to provide empirical evidence for hypothesis II regarding the interaction between governance momentum and equity mispricing for overvalued firms, we test the prediction $\mathbf{S}_{\text{Combined}} > \mathbf{S}_{\text{Contrarian}} + \mathbf{S}_{\text{GM}}$. For each sub-sample, each strategy is applied and the return from the short portfolio of each strategy is calculated.

[Insert table 10 here.]

In table 10, returns from the short portfolios calculated based on industry-adjusted stock returns are presented for each sub-sample. The returns listed on columns A, B, and C refer to $\mathbf{S}_{\text{Contrarian}}$, \mathbf{S}_{GM} , and $\mathbf{S}_{\text{Combined}}$, respectively.⁴⁷ In addition, two differential measures, Δ_{Combined} and Δ_{Abnormal} , are calculated.

⁴⁷ In tables 10 and 11, a one-tail t test is used to determine whether the equally weighted average return of the short portfolio is significantly lower than the equally weighted average return of the sub sample.

Δ_{Combined} is defined as $\Delta_{\text{Combined}} = \mathbf{S}_{\text{Combined}} - \mathbf{S}_{\text{Contrarian}}$. The measure, Δ_{Combined} , does not test the prediction; it simply displays the extent to which the combined investment strategy outperforms the contrarian investment strategy. Δ_{Abnormal} is defined as $\Delta_{\text{Abnormal}} = \mathbf{S}_{\text{Combined}} - \mathbf{S}_{\text{Contrarian}} - \mathbf{S}_{\text{GM}}$. This measure, Δ_{Abnormal} , tests the prediction and $\Delta_{\text{Abnormal}} > 0$ would confirm the prediction.

In table 10, there are 14 tests of $\Delta_{\text{Abnormal}} > 0$ performed over the seven subsamples. Eleven out of the 14 tests confirm the prediction, $\Delta_{\text{Abnormal}} > 0$ (i.e., $\mathbf{S}_{\text{Combined}} > \mathbf{S}_{\text{Contrarian}} + \mathbf{S}_{\text{GM}}$). Furthermore, nine out of the 11 confirmations for $\Delta_{\text{Abnormal}} > 0$ have $\Delta_{\text{Abnormal}} > 10\%$. Except for $\Omega_{\text{S\&P 1500}}$, $\Omega_{\text{S\&P 500}}$, and $\Omega_{\text{S\&P 400}}$, all the tests in $\Omega_{\text{S\&P 600}}$, $\Omega_{\text{R3000} \cdot \text{S\&P 1500}}$, Ω_{R3000} , and $\Omega_{\text{Outside R3000}}$ confirm $\Delta_{\text{Abnormal}} > 0$. These observations suggest that the evidence for hypothesis II is concentrated in relatively small and micro firms. For example, within the scope of $\Omega_{\text{S\&P 1500}}$, the evidence of $\Delta_{\text{Abnormal}} > 0$ is concentrated in $\Omega_{\text{S\&P 600}}$, but the evidence is weak in $\Omega_{\text{S\&P 500}}$ and $\Omega_{\text{S\&P 400}}$. Within the scope of Ω , the evidence of $\Delta_{\text{Abnormal}} > 0$ is concentrated in $\Omega_{\text{R3000} \cdot \text{S\&P 1500}}$ and $\Omega_{\text{Outside R3000}}$, but the evidence is weak in $\Omega_{\text{S\&P 1500}}$.

[Insert table 11 here.]

Table 11 displays the same measures calculated based on raw returns for informative purpose. Δ_{Abnormal} is not calculated because it is a biased measure, and therefore table 6 is not intended for testing the hypothesis. On the other hand, it is observed that $\Delta_{\text{Combined}} = \mathbf{S}_{\text{Combined}} - \mathbf{S}_{\text{Contrarian}} > 0$ in all

sub-samples except for one test in $\Omega_{S\&P\ 400}$. It indicates that the combined investment strategy generally outperforms the contrarian investment strategy.

CONCLUSION

Our findings facilitate firms in their quest to improve shareholder value through the adoption of governance practices that serve to make management accountable to shareholders, improve communication and transparency, and safeguard firms from conflicts of interest. Furthermore, for firms undervalued or overvalued by the market, pursuing or keeping the best corporate governance practices is particularly important.

A straightforward extension of this study is to construct more specific measures of governance momentum for different corporate governance mechanisms, such as “board-monitoring” momentum, “shareholder-rights” momentum, or “corporate-transparency” momentum. Through these measures, it is expected that the interaction between each type of corporate governance mechanism and equity mispricing can be understood better.

The dependence on firm sizes in our evidence for the interaction between governance momentum and equity mispricing warrants more in-depth investigation. These extensions of our study are left for future works.

Similar to many studies of corporate governance that suffered from either a limited size of the study sample or a limited time horizon covered, our study is limited by the time horizon of the governance data. On the other hand, the evidence and conclusions drawn from our study sample should be of great interest to investors, corporations, and policymakers.

TABLE 1

TABLE 1 Corporate Governance Quotient – Institutional Shareholder Services

Board Structure and Composition	Anti-takeover Provisions	Audit / Auditor Independence
Board Composition	State Antitakeover Provisions	Audit Committee
Nominating Committee	Control Share Acquisition Provision	Audit Fees
Compensation Committee	Control Share Cashout Provision	Auditor Ratification
Governance Committee	Freezout Provision	
Board Structure	Fair Price Provision	Executive and Director Compensation
Board Size	Stakeholder Law	Cost of Option Plans
Changes in Board Size	Poison Pill Endorsement	Option Repricing
Cumulative Voting		Shareholder Approval of Option Plans
Boards Served On – CEO	Charter and Bylaw Provisions	Compensation Committee Interlocks
Boards Served On – Other than CEO	Poison Pill Adoption	Director Compensation
Former CEOs	Poison Pill – Shareholder Approval	Option Burn Rate
Chairman/CEO Separation	Poison Pill – TIDE Provision	Option Expensing
Governance Guidelines	Poison Pill – Sunset Provision	
Response to Shareholder Proposals	Poison Pill – Qualified Offer Clause	Progressive Practices
Board Attendance	Poison Pill – Trigger	Board Performance Reviews
Board Vacancies	Vote Requirements – Charter/Bylaw Amendments	Meetings of Outside Directors
Related Party Transactions – CEO	Vote Requirements – Mergers	CEO Succession Plan
	Written Consent	Outside Advisors Available to Board
Directors and Officers Ownership	Special Meetings	Directors Resign Upon Job Changes
Director Ownership	Board Amendments	
Executive Stock Ownership Guidelines	Capital Structure – Dual Class	Director Education
Director Stock Ownership Guidelines	Capital Structure – Blank Check Preferred	Director Education
Officer & Director Stock Ownership		

TABLE 2

TABLE 2 One-year Total Shareholder Returns from High & Low Governance Momentum Portfolios

	One-year Total Shareholder Return			Industry-adjusted One-year Total Shareholder Return		
	Top GM Decile	Bottom GM Decile	Δ	Top GM Decile	Bottom GM Decile	Δ
S&P 1500						
Governance Momentum (Y02–Y03)	47.8%	37.3%	10.6%**	-8.8%	-23.0%	14.2%**
Governance Momentum (Y03–Y04)	23.4%	13.9%	9.5%***	5.6%	-0.6%	6.2%**
Russell 3000 excluding S&P 1500						
Governance Momentum (Y02–Y03)	58.6%	82.8%	-24.2%	-0.9%	22.0%	-22.9%
Governance Momentum (Y03–Y04)	30.4%	18.0%	12.4%**	12.4%	6.4%	6.0%
Outside Russell 3000						
Governance Momentum (Y02–Y03)	71.9%	74.1%	-2.2%	6.2%	8.8%	-2.6%
Governance Momentum (Y03–Y04)	13.3%	13.3%	0.0%	0.1%	-1.4%	1.5%

*, **, *** represent significance at 10%, 5%, and 1% levels of confidence respectively.

TABLE 3

TABLE 3 One-year Total Shareholder Returns from Value and Glamour Stock Portfolios

	One-year Total Shareholder Return			Industry-adjusted One-year Total Shareholder Return		
	Value Stocks	Glamour Stocks	Δ	Value Stocks	Glamour Stocks	Δ
S&P 1500						
Contrarian Portfolio (Y02-Y03)	65.6%	38.5%	27.1%***	7.9%	-28.1%	36.1%***
Contrarian Portfolio (Y03-Y04)	27.8%	14.5%	13.4%***	9.1%	4.4%	4.7%**
S&P 500						
Contrarian Portfolio (Y02-Y03)	57.6%	29.0%	28.6%***	3.1%	-38.6%	41.6%***
Contrarian Portfolio (Y03-Y04)	23.2%	12.8%	10.4%***	5.8%	3.0%	2.8%
S&P 400						
Contrarian Portfolio (Y02-Y03)	68.2%	37.9%	30.3%***	5.3%	-27.3%	32.7%***
Contrarian Portfolio (Y03-Y04)	21.9%	10.0%	12.0%***	4.2%	2.0%	2.2%
S&P 600						
Contrarian Portfolio (Y02-Y03)	67.7%	50.3%	17.5%**	14.0%	-16.7%	30.7%***
Contrarian Portfolio (Y03-Y04)	35.4%	16.9%	18.5%***	16.0%	5.5%	10.5%**
Russell 3000 excluding S&P 1500						
Contrarian Portfolio (Y02-Y03)	122.7%	81.3%	41.4%***	56.4%	11.0%	45.4%***
Contrarian Portfolio (Y03-Y04)	37.8%	12.8%	25.0%***	21.3%	6.0%	15.3%***
Russell 3000						
Contrarian Portfolio (Y02-Y03)	96.1%	55.3%	40.8%***	33.4%	-13.5%	46.9%***
Contrarian Portfolio (Y03-Y04)	32.3%	13.2%	19.2%***	14.3%	5.0%	9.4%***
Outside Russell 3000						
Contrarian Portfolio (Y02-Y03)	108.0%	51.6%	56.4%***	42.7%	-16.3%	59.1%***
Contrarian Portfolio (Y03-Y04)	32.9%	2.7%	30.2%***	16.2%	-5.3%	21.5%***

*, **, *** represent significance at 10%, 5%, and 1% levels of confidence respectively.

TABLE 4

TABLE 4 Changes of Corporate Governance Provisions at United Rentals, Inc.

Industry Classification: GICS 2010, Capital Goods

Price-to-Book Multiple (P/B) = 0.62 as of Y02 Fiscal Year End

Corporate Governance Topic	Provision as of Y02 Annual Meeting	Provision as of Y03 Annual Meeting
Nominating Committee	No Committee	Nominating Committee Comprises Solely of Independent Outside Directors
Chairman/CEO Separation	Chairman and CEO Are Not Separated and There Is No Lead Director	Chairman and CEO Are Separated
Corporate Governance Committee	No Governance Committee or Panel	Governance Committee Comprises Solely of Independent Outside Directors
Governance Guidelines	Board Guidelines Are Not Included in Each Release of The Proxy	Board Guidelines Are Included in Each Release of The Proxy
Audit Committee	Audit Committee Comprises Solely of Independent Outside Directors	Audit Committee Comprises Solely of Independent Outside Directors and The Board Can Hire Its Own Advisors
Audit Fees	Consulting (Audit-Related and Other) Fees Exceed Audit Fees	Consulting (Audit-Related and Other) Fees Are Less Than Audit Fees
Board Performance Reviews	Performance of The Board Is Not Reviewed Regularly	Performance of The Board Is Reviewed Regularly
Meetings of Outside Directors	Outside Directors Do Not Meet Without The CEO Present	Outside Directors Meet Without The CEO and Disclosed The Number of Times They Met
Outside Advisors Available to Board	Board Does Not Have Its Own Outside Advisors	Board Has Its Own Outside Advisors
CEO Succession Plan	Board-Approved Succession Plan Not in Place for The CEO	Board-Approved Succession Plan in Place for The CEO
Executive Stock Ownership Guidelines	Executives Are Not Subject to Stock Ownership Guidelines	Executives Are Subject to Stock Ownership Guidelines
Officer & Director Stock Ownership	Officers + Directors Ownership as % of Shares Outstanding Is Greater Than 30%	Officers + Directors Ownership as % of Shares Outstanding Is between 5% and 30%

TABLE 5

TABLE 5 Changes of Corporate Governance Provisions at Magic Lantern Group Inc.

Industry Classification: GICS 2550, Retailing
Price-to-Book Multiple (P/B) = 8.99 as of Y03 Fiscal Year End

Corporate Governance Topic	Provision as of Y03 Annual Meeting	Provision as of Y04 Annual Meeting
Board Composition	Board Controlled by A Supermajority of Independent Outside Directors	Board Controlled by A Majority of Insiders and Affiliated Outside Directors
Former CEOs	No Former CEO on The Board	Former CEO on The Board
Director Ownership	All Directors with More Than One Year of Service Own Stock	Director(s) with More Than One Year of Service Own No Stock
Option Burn Rate	The Average Options Granted in The Past Three Years as % of Common Shares Outstanding Is Greater Than 1% But Less Than or Equal to 3%	The Average Options Granted in The Past Three Years as % of Common Shares Outstanding Is Greater Than 3%

TABLE 6

TABLE 6 Hedge Return (Industry-adjusted One-year Total Shareholder Return) from Each Strategy's Long and Short Portfolios					
	A: Contrarian Strategy by P/B	B: Governance Momentum Strategy	C: Combined Strategy	Δ_{combined} = C - A	Δ_{abnormal} = C - (A + B)
S&P 1500					
P/B (FY02), Governance Momentum (Y02-Y03)	36.1%***	14.2%**	73.0%***	36.9%	22.7%
P/B (FY03), Governance Momentum (Y03-Y04)	4.7%**	6.1%**	17.7%**	13.0%	6.9%
S&P 500					
P/B (FY02), Governance Momentum (Y02-Y03)	41.6%***	14.2%	86.6%**	45.0%	30.8%
P/B (FY03), Governance Momentum (Y03-Y04)	2.8%	3.6%	33.3%*	30.5%	26.9%
S&P 400					
P/B (FY02), Governance Momentum (Y02-Y03)	32.7%***	11.3%	34.5%*	1.8%	-9.5%
P/B (FY03), Governance Momentum (Y03-Y04)	2.2%	6.1%	-11.1%	-13.3%	-19.4%
S&P 600					
P/B (FY02), Governance Momentum (Y02-Y03)	30.7%***	9.0%	91.8%***	61.1%	52.1%
P/B (FY03), Governance Momentum (Y03-Y04)	10.5%***	11.3%**	29.2%*	18.7%	7.4%
Russell 3000 excluding S&P 1500					
P/B (FY02), Governance Momentum (Y02-Y03)	45.4%***	-22.9%	42.4%*	-3.0%	19.9%
P/B (FY03), Governance Momentum (Y03-Y04)	15.3%***	6.0%	15.5%	0.2%	-5.8%
Russell 3000					
P/B (FY02), Governance Momentum (Y02-Y03)	46.9%***	-9.3%	63.5%***	16.6%	25.9%
P/B (FY03), Governance Momentum (Y03-Y04)	9.4%***	7.0%**	18.1%**	8.7%	1.7%
Outside Russell 3000					
P/B (FY02), Governance Momentum (Y02-Y03)	59.1%***	-2.6%	87.2%***	28.1%	30.7%
P/B (FY03), Governance Momentum (Y03-Y04)	21.5%***	1.5%	38.6%***	17.1%	15.6%

*, **, *** represent significance at 10%, 5%, and 1% levels of confidence respectively.

TABLE 7

TABLE 7 Hedge Return (One-year Total Shareholder Return) from Each Strategy's Long and Short Portfolios					
	A: Contrarian Strategy by P/B	B: Governance Momentum Strategy	C: Combined Strategy	Δ_{combined} = C - A	Δ_{abnormal} = C - (A + B)
S&P 1500					
P/B (FY02), Governance Momentum (Y02-Y03)	27.1%***	10.6%**	68.5%***	41.4%	30.8%
P/B (FY03), Governance Momentum (Y03-Y04)	13.4%***	9.5%***	28.5%***	15.1%	5.6%
S&P 500					
P/B (FY02), Governance Momentum (Y02-Y03)	28.6%***	11.6%	80.3%**	51.7%	40.1%
P/B (FY03), Governance Momentum (Y03-Y04)	10.4%***	9.1%*	43.0%**	32.6%	23.5%
S&P 400					
P/B (FY02), Governance Momentum (Y02-Y03)	30.3%***	8.7%	49.4%***	19.1%	10.4%
P/B (FY03), Governance Momentum (Y03-Y04)	12.0%***	8.1%	0.8%	-11.2%	-19.3%
S&P 600					
P/B (FY02), Governance Momentum (Y02-Y03)	17.5%**	4.4%	57.4%**	39.9%	35.5%
P/B (FY03), Governance Momentum (Y03-Y04)	18.5%***	17.1%**	46.5%**	28.0%	10.9%
Russell 3000 excluding S&P 1500					
P/B (FY02), Governance Momentum (Y02-Y03)	41.4%***	-24.2%	40.4%	-1.0%	23.2%
P/B (FY03), Governance Momentum (Y03-Y04)	25.0%***	12.4%**	31.2%**	6.2%	-6.2%
Russell 3000					
P/B (FY02), Governance Momentum (Y02-Y03)	40.8%***	-10.9%	55.8%***	15.0%	25.9%
P/B (FY03), Governance Momentum (Y03-Y04)	19.2%***	11.4%***	30.4%***	11.2%	-0.2%
Outside Russell 3000					
P/B (FY02), Governance Momentum (Y02-Y03)	56.4%***	-2.2%	73.4%**	17.0%	19.2%
P/B (FY03), Governance Momentum (Y03-Y04)	30.2%***	0.0%	50%***	19.8%	19.8%

*, **, *** represent significance at 10%, 5%, and 1% levels of confidence respectively.

TABLE 8

TABLE 8 Industry-adjusted One-year Total Shareholder Return from Each Strategy's Long Portfolio

	A: Contrarian Strategy by P/B	B: Governance Momentum Strategy	C: Combined Strategy	Δ_{combined} = C - A	Δ_{abnormal} = C - (A + B)
S&P 1500					
P/B (FY02), Governance Momentum (Y02-Y03)	7.9%***	-8.8%	26.3%**	18.4%	27.2%
P/B (FY03), Governance Momentum (Y03-Y04)	9.1%**	5.6%	15.7%	6.6%	1.0%
S&P 500					
P/B (FY02), Governance Momentum (Y02-Y03)	3.1%***	-9.1%	34.3%*	31.2%	40.3%
P/B (FY03), Governance Momentum (Y03-Y04)	5.8%	5.0%	27.6%*	21.8%	16.8%
S&P 400					
P/B (FY02), Governance Momentum (Y02-Y03)	5.3%***	-8.9%	-14.9%	-20.2%	-11.3%
P/B (FY03), Governance Momentum (Y03-Y04)	4.2%	3.9%	3.3%	-0.9%	-4.8%
S&P 600					
P/B (FY02), Governance Momentum (Y02-Y03)	14.0%***	-7.4%	45.0%**	31.0%	38.4%
P/B (FY03), Governance Momentum (Y03-Y04)	16.0%**	10.0%	23.4%	7.4%	-2.6%
Russell 3000 excluding S&P 1500					
P/B (FY02), Governance Momentum (Y02-Y03)	56.4%***	-0.9%	42.5%	-13.9%	-13.0%
P/B (FY03), Governance Momentum (Y03-Y04)	21.3%***	12.4%	11.2%	-10.1%	-22.5%
Russell 3000					
P/B (FY02), Governance Momentum (Y02-Y03)	33.4%***	-8.9%	33.2%**	-0.2%	8.7%
P/B (FY03), Governance Momentum (Y03-Y04)	14.3%***	8.6%	12.7%	-1.6%	-10.2%
Outside Russell 3000					
P/B (FY02), Governance Momentum (Y02-Y03)	42.7%***	6.2%	60.3%**	17.6%	11.4%
P/B (FY03), Governance Momentum (Y03-Y04)	16.2%***	0.1%	14.8%	-1.4%	-1.5%

*, **, *** represent significance at 10%, 5%, and 1% levels of confidence respectively.

TABLE 9

TABLE 9 One-year Total Shareholder Return from Each Strategy's Long Portfolio				
	A: Contrarian Strategy by P/B	B: Governance Momentum Strategy	C: Combined Strategy	Δ_{combined} = C - A
S&P 1500				
P/B (FY02), Governance Momentum (Y02-Y03)	65.6%***	47.8%	88.9%***	23.3%
P/B (FY03), Governance Momentum (Y03-Y04)	27.8%***	23.4%	37.3%**	9.5%
S&P 500				
P/B (FY02), Governance Momentum (Y02-Y03)	57.6%***	48.6%	96.7%**	39.1%
P/B (FY03), Governance Momentum (Y03-Y04)	23.2%**	22.8%	50.9%*	27.7%
S&P 400				
P/B (FY02), Governance Momentum (Y02-Y03)	68.2%***	49.4%	72.7%**	4.5%
P/B (FY03), Governance Momentum (Y03-Y04)	21.9%*	21.1%	26.6%**	4.7%
S&P 600				
P/B (FY02), Governance Momentum (Y02-Y03)	67.7%***	47.3%	86.7%*	19.0%
P/B (FY03), Governance Momentum (Y03-Y04)	35.4%***	30.4%*	47.0%*	11.6%
Russell 3000 excluding S&P 1500				
P/B (FY02), Governance Momentum (Y02-Y03)	122.7%***	58.6%	102.6%	-20.1%
P/B (FY03), Governance Momentum (Y03-Y04)	37.8%***	30.4%**	33.0%	-4.8%
Russell 3000				
P/B (FY02), Governance Momentum (Y02-Y03)	96.1%***	49.4%	95.3%**	-0.8%
P/B (FY03), Governance Momentum (Y03-Y04)	32.3%***	26.6%**	34.7%**	2.4%
Outside Russell 3000				
P/B (FY02), Governance Momentum (Y02-Y03)	108.0%***	71.9%	115.2%**	7.2%
P/B (FY03), Governance Momentum (Y03-Y04)	32.9%***	13.3%	34.3%*	1.4%

*, **, *** represent significance at 10%, 5%, and 1% levels of confidence respectively.

TABLE 10

TABLE 10 Industry-adjusted One-year Total Shareholder Return from Each Strategy's Short Portfolio					
	A: Contrarian Strategy by P/B	B: Governance Momentum Strategy	C: Combined Strategy	Δ_{combined} = C - A	Δ_{abnormal} = C - (A + B)
S&P 1500					
P/B (FY02), Governance Momentum (Y02-Y03)	28.1%***	23.0%**	46.7%***	18.6%	-4.4%
P/B (FY03), Governance Momentum (Y03-Y04)	-4.4%	0.6%**	2.0%*	6.4%	5.8%
S&P 500					
P/B (FY02), Governance Momentum (Y02-Y03)	38.6%***	23.4%	52.3%**	13.7%	-9.7%
P/B (FY03), Governance Momentum (Y03-Y04)	-3.0%	-1.4%	5.6%	8.6%	10.0%
S&P 400					
P/B (FY02), Governance Momentum (Y02-Y03)	27.3%**	20.2%	49.4%**	22.1%	1.9%
P/B (FY03), Governance Momentum (Y03-Y04)	-2.0%	2.1%	-14.4%	-12.4%	-14.5%
S&P 600					
P/B (FY02), Governance Momentum (Y02-Y03)	16.7%	16.4%	46.8%***	30.1%	13.7%
P/B (FY03), Governance Momentum (Y03-Y04)	-5.5%	1.3%**	5.9%	11.4%	10.1%
Russell 3000 excluding S&P 1500					
P/B (FY02), Governance Momentum (Y02-Y03)	-11.0%*	-22.0%	-0.1%*	10.9%	32.9%
P/B (FY03), Governance Momentum (Y03-Y04)	-6.0%	-6.4%	4.4%*	10.4%	16.8%
Russell 3000					
P/B (FY02), Governance Momentum (Y02-Y03)	13.5%***	-0.4%	30.3%***	16.8%	17.2%
P/B (FY03), Governance Momentum (Y03-Y04)	-5.0%	-1.6%**	5.4%**	10.4%	12.0%
Outside Russell 3000					
P/B (FY02), Governance Momentum (Y02-Y03)	16.3%***	-8.8%	26.8%**	10.5%	19.3%
P/B (FY03), Governance Momentum (Y03-Y04)	5.3%***	1.4%	23.8%***	18.5%	17.1%

*, **, *** represent significance at 10%, 5%, and 1% levels of confidence respectively.

TABLE 11

TABLE 11 One-year Total Shareholder Return from Each Strategy's Short Portfolio				
	A: Contrarian Strategy by P/B	B: Governance Momentum Strategy	C: Combined Strategy	Δ_{combined} = C - A
S&P 1500				
P/B (FY02), Governance Momentum (Y02-Y03)	-38.5%**	-37.3%**	-20.4%***	18.1%
P/B (FY03), Governance Momentum (Y03-Y04)	-14.5%**	-13.9%**	-8.8%**	5.7%
S&P 500				
P/B (FY02), Governance Momentum (Y02-Y03)	-29.0%**	-37.0%	-16.3%***	12.7%
P/B (FY03), Governance Momentum (Y03-Y04)	-12.8%*	-13.8%	-7.8%	5.0%
S&P 400				
P/B (FY02), Governance Momentum (Y02-Y03)	-37.9%	-40.8%	-23.3%*	14.6%
P/B (FY03), Governance Momentum (Y03-Y04)	-10.0%**	-13.0%	-25.7%	-15.7%
S&P 600				
P/B (FY02), Governance Momentum (Y02-Y03)	-50.3%	-42.9%	-29.3%**	21.0%
P/B (FY03), Governance Momentum (Y03-Y04)	-16.9%*	-13.4%**	-0.5%**	16.4%
Russell 3000 excluding S&P 1500				
P/B (FY02), Governance Momentum (Y02-Y03)	-81.3%	-82.8%	-62.2%	19.1%
P/B (FY03), Governance Momentum (Y03-Y04)	-12.8%**	-18.0%	-1.8%**	11.0%
Russell 3000				
P/B (FY02), Governance Momentum (Y02-Y03)	-55.3%**	-60.3%	-39.4%***	15.9%
P/B (FY03), Governance Momentum (Y03-Y04)	-13.2%**	-15.2%**	-4.3%***	8.9%
Outside Russell 3000				
P/B (FY02), Governance Momentum (Y02-Y03)	-51.6%**	-74.1%	-41.9%*	9.7%
P/B (FY03), Governance Momentum (Y03-Y04)	-2.7%***	-13.3%	15.7%***	18.4%

*, **, *** represent significance at 10%, 5%, and 1% levels of confidence respectively.

FIGURE 1

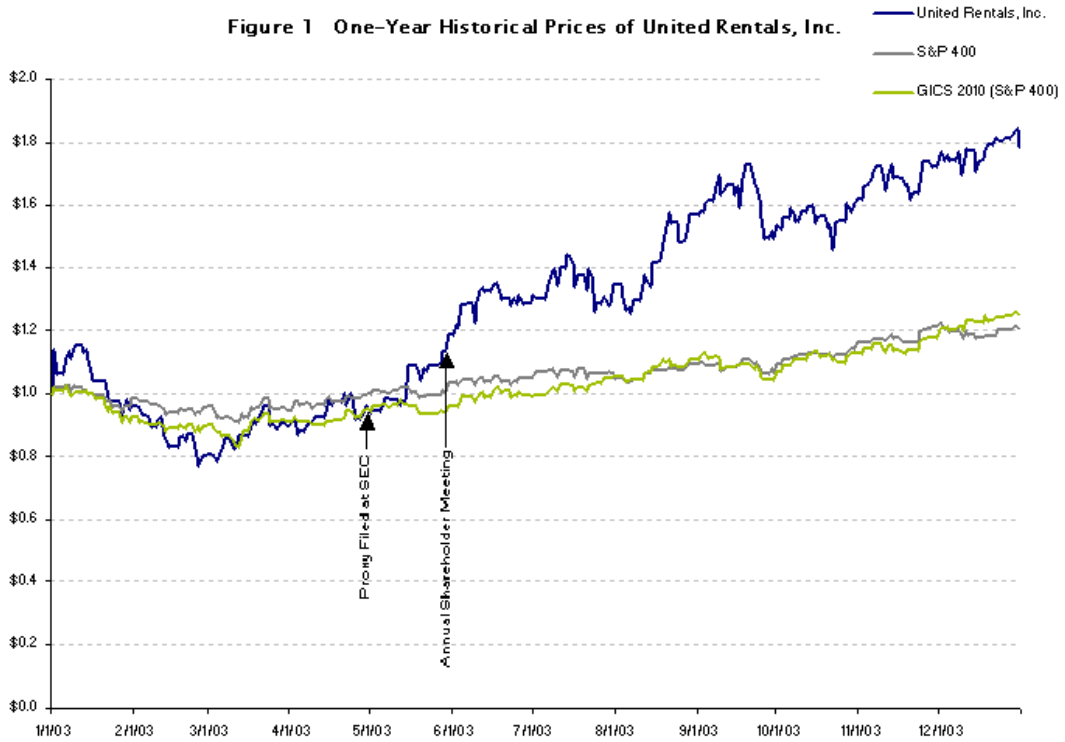


FIGURE 2

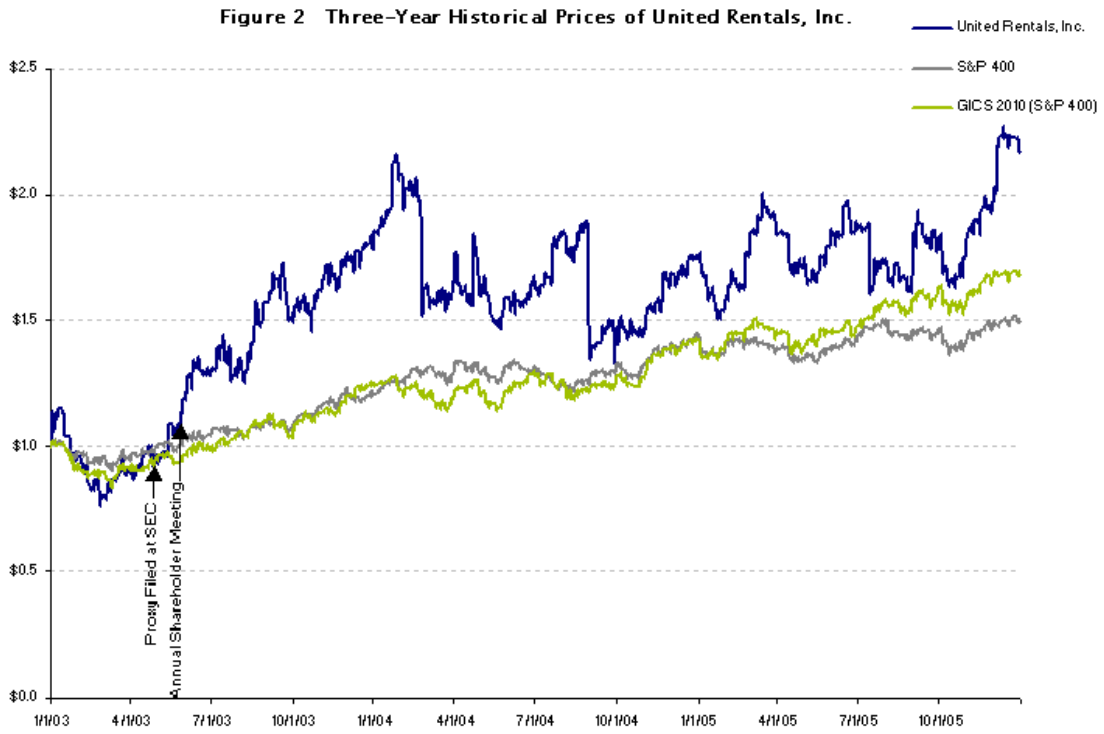


FIGURE 3

Figure 3 One-Year Historical Prices of Magic Lantern Group Inc.

