CORPORATE GOVERNANCE AND LONG-TERM STOCK RETURNS

A Dissertation

by

THEODORE CLARK MOORMAN

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

May 2005

Major Subject: Finance

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ABSTRACT

Corporate Governance and Long-Term Stock Returns. (May 2005)

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Extant literature finds that long-term abnormal stock returns are generated by a strategy based on corporate governance index values (Gompers, Ishii, and Metrick 2003). The result is inconsistent with efficient markets and suggests that information about governance is not accurately reflected in market data. Control firm portfolios are used to mitigate model misspecification in measuring long-term abnormal returns. Using a number of different matching criteria and governance indices, no long-term abnormal returns are found to trading strategies based on corporate governance. The effect of a change in governance on firm value is mixed, but some support is found for poor governance destroying firm value. These results have a number of implications for practitioners, researchers, and policy makers.

This dissertation is dedicated to my wife, Sara. She has been an immense help. Her support through the ups and downs and in betweens of the dissertation process has been invaluable. All praise is given to the Creator and Author of Truth, Jesus Christ, who has been gracious in my struggle with cultivating intellectual virtues.

TABLE OF CONTENTS

Page

LIST OF FIGURES

LIST OF TABLES

TABLE Page

CHAPTER I

INTRODUCTION AND LITERATURE REVIEW

1.1 Effects of Governance on Firm Value

1.1.1 Introduction

Corporate governance has been a recent source of interest to investors, policy makers, and corporations. In the wake of recent corporate scandals, investors have asked what must be done to get corporations to maximize shareholder weatlh. Policy makers have responded by passing legislation requiring corporate governance standards. Corporations have been working, not always without complaint, to meet the demands of the new laws.

In Jensen and Meckling's (1976) framework, the best interest of the agent-manager is not always aligned with the principal-owner. The structure of monitoring devices to align the interests of principals and agents describes a firm's corporate governance characteristics (Farinha 2003). Researchers, corporate managers, and shareholders are interested in the relationship between corporate governance and firm value. A manager with partial ownership does not bear the full consequences of her actions and has incentives to deviate from maximizing shareholder wealth. Consequently, the value of the firm will be less than it would be if the manager had full ownership. However, separating ownership and control has a purpose. Managerial skill and wealth endowment are often mutually exclusive. Additionally, diffuse ownership allows the bearing of risk to be shared (Fama and Jensen 1983). Researching the effect

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This dissertation follows the style of *The Journal of Finance*.

of corporate governance on firm value attempts to address whether sufficient monitoring mechanisms exist. Can a manager with partial ownership act more like a manager with full ownership who is also willing to bear a large degree of risk?

1.1.2 Views of Governance and Firm Value

Researchers hold a number of views about the effect of corporate governance on firm value. The clearest dichotomy in the views is that either corporate governance affects firm value or it does not. The nuances of each view have received the majority of the attention in the literature.

The view that governance affects firm value considers the costs of agency to be significant. Governance mechanisms should be effective in reducing agency costs. One nuance is that adding a particular governance mechanism improves firm value for all firms insofar as the mechanism can be added. This could be called the no costs nuance. An example is Agrawal and Chadha's (2005) study of the effect of boards of directors arrangements on accounting earnings restatement announcements. Negative abnormal returns around earnings restatement announcement dates suggest that earnings restatements destroy firm value (Palmrose, Richardson, and Scholz 2004). Agrawal and Chadha (2005) study legislation from the Sarbanes-Oxley act. The act requires at least one financial expert on the auditing committee of the board of directors. Agrawal and Chadha (2005) find a lower likelihood of accounting earnings restatements for companies with a financial expert on the board of directors auditing committee. The simple addition of a single governance mechanism, a financial expert on the board of directors auditing committee, is found to improve firm value.

Another nuance consistent with governance affecting firm value is that governance mechanisms have costs and benefits. All corporations can trade off the costs and benefits of a governance mechanism to maximize firm value. The costs and benefits nuance is consistent with Stulz's (1988) model of how the extent of managerial ownership affects takeover premiums and takeover likelihood. As an inside manager's ownership share increases, an outside bidder must offer a higher premium to make a successful bid; however, the gain for a bidder from a takeover decreases with the bid price. If a takeover bid price is too high, no bid will take place. Managers will be entrenched and will have fewer reasons to maximize shareholder wealth. An optimal level of managerial ownership trades off the premium obtained from a higher bid and the value destruction from entrenched management in the case of low takeover probability. Morck, Shleifer, and Vishny (1988) test Stulz's (1988) theory. Firm value, as approximated by Tobin's Q, increases in board ownership of zero to five percent, decreases in board ownership of five to twenty five percent, and increases in board ownership above twenty five percent. Morck, Shleifer, and Vishny (1988) interpret the non-linear relationship between ownership and firm value as supporting Stulz's (1988) theory of an optimal level of ownership over most of the ownership level range. The highest levels of ownership reflect close alignment of principal-agent interests because of less separation of ownership and control. For firms with relatively diffuse ownership, this evidence implies that the marginal benefits of increased incentive alignment must equal the marginal costs of increased entrenchment when determining the best ownership level for the firm.

A few differences can be seen immediately in the implications of the no costs and the costs and benefits nuances. The no costs nuance implies that if the addition of a certain governance mechanism increases firm value, firm value should be improving insofar as one can keep adding that governance mechanism. I will illustrate why the no costs nuance is extreme and suggest that most of the governance literature has not argued for the no costs nuance. Yermack (1996) in a study on board size finds that smaller boards are associated with greater firm value. Small boards improving firm value supports arguments made by Jensen (1993) that large boards are ineffective. To the extent that a smaller board size causes greater firm value, the no costs nuance implies that board members continually be taken away to increase firm value. The problem with following such advice is that only a board of made up of management or no board at all (a legal impossibility) would remain. Management would be unmonitored and unrestrained. From the outset, the governance literature has not taken the no costs view. Jensen and Meckling's (1976) seminal work focuses on the costs of diffuse ownership. They also point out that diffuse ownership creates value since entrepreneur managers are often wealth constrained. The costs and benefits nuance is at least more realistic than the no costs nuance.

Governance may affect firm value significantly. However, most firms may have optimal governance structures. In this case, a relationship between any single governance mechanism and firm value cannot be detected by a researcher. This could be called the optimality nuance. Demsetz and Lehn (1985) provide some of the economic intuition behind the optimality nuance. In finding no relationship between ownership

structure and firm performance they conclude that no relationship should be expected. When shareholders make conscious decisions about ownership structure, they understand the costs and benefits of a particular ownership structure on firm value. Controlling for the other determinants of firm value and accounting for the way ownership concentration varies with firm characteristics, no relationship between ownership concentration and firm value should be expected.

Governance may affect firm value significantly and no relationship can be observed empirically for a number of reasons. First, a number of governance mechanisms may be close substitutes or complements for each other. In this case, no single governance mechanism would be necessary to solve agency conflicts. Any optimal combination of governance mechanisms would be sufficient. After controlling for the interdependence among a number of governance mechanisms, Agrawal and Knoeber (1996) detect only a negative effect of board outsiders on firm performance. Governance mechanisms included in the study are the use of debt, the market for managers, and the market for corporate control, inside shareholding, institutional shareholding, block shareholding, and board outsiders. A second reason for observing no empirical relationship between governance and firm value may be that amenity potential and severity of agency costs may vary from firm to firm and by industry. In this case, the unique situation that each firm faces plays an important role in choosing governance. There can be no single governance standard improving value for all firms. Kole and Lehn (1999) argue that firms change their governance structure in response to a change in the underlying firm environment. Deregulation in the airline industry

appears to cause a change in a number of governance mechanisms. Finally, since all firms have incentives to choose the best form of governance no empirical relationship may be observed between firm value and governance. Shareholders desire the maximization of firm value. If inadequate governance is chosen and high agency costs are unrestrained, investors would move capital to better forms of governance. Firms with high agency costs and poor governance structures may have difficulty surviving competitive product markets with insufficient capital.

Differences and similarities between the costs and benefits nuance and the optimality nuance should be noted. The costs and benefits nuance implies that a relationship between governance and firm value can be observed empirically for all firms. If such a relationship is detected, many firms are not choosing governance optimally. Hermalin and Weisbach (2003) suggest that this is an out-of-equilibrium phenomenon that calls for a particular governance standard to be encouraged or mandated. In this instance, some firms are not choosing an optimal form of governance. Both nuances fall under the heading of governance affecting firm value. In the case of the optimality nuance, firms are on average choosing the optimal solution to agency problems. Governance is not ineffective. On the contrary, governance is effective – so effective that most firms have made sure their governance structures are optimal.

In direct contrast to governance having an important and material effect on firm value is the view that governance has no effect on firm value. Two related nuances are worth mentioning. First, governance may have no effect on firm value because governance is powerless or ineffective in curbing agency costs. This could be called the

ineffectiveness nuance. Jensen (1993) could come close to this view in citing the failure or shutdown of a number of governance mechanisms. Jensen's suggestions for reforming governance mechanisms indicate that governance mechanisms could be effective but are not effective currently.

A second nuance to governance having no affect on firm value is that agency costs are minimal at best. This could be called the no agency costs nuance. Literature declaring that no agency costs exist is scant. With billions of dollars destroyed in the wake of the most recent corporate scandals, agency costs seem to be substantial. Perhaps voicing this view would suggest something counter to what seems obvious about human nature. When humans are given the opportunity to use corporate resources according to their own preferences and without bearing large costs of doing so, they will.

Finally, a third view may bridge a gap between views arguing for the effectiveness or complete ineffectiveness of governance. This could be called the trivial effect view. Governance may affect firm value and agency costs may be real, but the impact of governance on firm value could be viewed as trivial in comparison with other economic factors. A recent paper questions the importance of corporate governance. Larcker, Richardson, and Tuna (2004) use principal components analysis to construct common governance factors. Governance explains only a small portion of the variation in a number of dependent variables related to firm value or firm performance. In addition, many of the governance variables often have unexpected signs. Larcker, Richardson, and Tuna interpret the relatively weak explanatory power of corporate

governance as inconsistent with claims often made by academics and consultants regarding corporate governance.

1.1.3 Methodological Issues in Studying the Effect of Governance on Firm Value

The difficult task for a researcher involves distinguishing between the many different views of the effect of governance on firm value. The methodological hurdles are many. The most severe methodological hurdle may be the problem of endogeneity. Least squares estimation assumes independent variables are non-stochastic or are uncorrelated with regression error terms. Violations of this assumption result in biased coefficient estimates. Endogeneity is econometrically defined in this manner.

A primary manifestation of endogeneity in governance studies arises because explanatory governance variables are often determined simultaneously with dependent variables related to firm value. A third omitted variable might determine both governance and firm value (Hermalin and Weisbach 2003). As a result, researchers may detect a spurious correlation between governance and firm value. The simultaneous equations bias proves troubling in examining a cross section of firms because one is unable to see how adjustments are made to shocks in the system. Because variables of importance are determined simultaneously, the researcher faces the problem of determining the direction of causality. A related question in the governance literature has been whether board composition determines firm performance or firm performance determines board composition. A portion of the literature studying this question in a simultaneous equations framework has concluded that firm performance determines board composition (see Agrawal and Knoeber 1996 and Bhagat and Black 2002).

Among proposed solutions to the problem of endogeneity, two econometric methodologies have received attention in the literature. One solution has been to search for instrumental variables for the endogenous or predetermined variables of interest in a system of equations. Instrumental variables are to be an exogenous set of variables that come close to approximating the endogenous variables in the system of equations. The new approximated variable of interest should be exogenous and uncorrelated with the error term in a set of equations. Palia (2001) uses the instrumental variables approach to explore the relationship between firm value and managerial compensation. He finds an insignificant relationship between firm value and compensation. Palia interprets the insignificant relationship as an equilibrium condition in which firms choose the compensation mechanism of governance according to the contracting environment. A number of problems may arise in the instrumental variables approach. It may be difficult to determine which variables in a set of equations are exogenous. Instruments for the endogenous variables in a system may be difficult to find. Exogneous instruments may poorly approximate the endogenous variable of interest. If instrumental variables are too highly correlated with the endogenous variable they approximate they may also be correlated with the error term.

Another solution to the problem of endogeneity has been the use of panel data fixed effects. One source of endogeneity may be omitted variables related to firms, industries, or years. The effects of omitted variables are captured in the error term of a regression equation. If the error term is correlated with independent governance variables of interest, coefficient estimates on governance variables will be biased. To

control for the effects of variables related to firms, industries, or years a fixed effects panel data model looks at the variation of governance variables of interest within firms, within industries, or within years. Himmelberg, Hubbard, and Palia (1999) use panel data fixed effects to control for differences in firm contracting environments possibly related to firm value. In doing so, they find no significant relationship between managerial ownership and firm performance. They interpret different levels of managerial ownership across firms as an "optimal incentive arrangement." Like the instrumental variables approach, a panel data fixed effects model is limited in controlling for omitted variables. If the variable of interest in a regression equation is time invariant, as is often the case with governance studies, a fixed effects model will "wipe out" the variable and not allow for any interpretation. Zhou (2001) critiques the study by Himmelberg, Hubbard, and Palia (1999) on these grounds because managerial ownership is rather time invariant. Fixed effects can account for unobservable or omitted time invariant variables. If an omitted or unobservable variable changes over time, fixed effects cannot control for the influence of this variable on test results.

Another solution to the endogeneity problem is observing how an exogenous shock to one of the variables in a system of equations affects the other variables. Dahya and McConnell (2002) use a "natural experiment" to examine changes in corporate behavior. The U.K.'s *Cadbury Report* recommended at least three outsiders on a firm's board of directors. This recommendation would later be mandated. Dahya and McConnell find an increase in the number of outside directors after the *Cadbury Report* is accompanied by an increase in the likelihood of an outside CEO appointment.

Outside CEO appointment announcements are accompanied by positive abnormal stock returns. From this evidence, outside directors appear to make better decisions positively affecting firm value. A number of obstacles arise in conducting a natural experiment. The first may be in identifying the exact timing of the shock. Large macroeconomic events do not happen in isolation. A number of confounding events may also occur whose effects could be the economic catalyst for change in a given variable. Also debatable is whether a given event is truly a shock or a self-selected event. If firms respond immediately and optimally to a given shock, no relationship would be observed between governance and firm value even though the effects of governance structures on firm value could be substantial.

Another method attempting to bypass endogeneity issues in the study of how corporate governance affects firm value is the event study. Event studies examine the stock price reaction around the announcement date of a corporate event. (Long-run event studies look at stock price performance up to five years after an event date. Long-run event studies test the efficient markets hypothesis). Coates (2000) provides a survey of event studies on the adoption anti-takeover amendments. He points out that event studies assume stock prices are unbiased estimates of firm value. Even if stock prices are inaccurate, they are off by an amount close to zero on average in large samples. Coates concludes that the majority of the event study literature is inconclusive about the effect that anti-takeover amendment adoption has on firm value. He also provides a few problems encountered in interpreting event study evidence. Confounding announcements may have a material impact on event study outcomes. Since events are

often self-selected, the stock price reaction to an event may be towards signaling information conveyed by an event rather than the event itself. For instance, Coates (2000) suggests a "shadow pill" is always present for firms. Since firms can easily adopt poison pills and similar anti-takeover amendments, actual adoption of a pill conveys nothing about the effect of a pill. Instead, pill adoption may convey that the manager of a firm has private information (about takeover prospects, etc.).

1.1.4 Conclusion

A number of views can be found in the literature discussing the effect of governance on firm value. Distinguishing between the many views of governance can be difficult. For instance, detecting no empirical relationship between governance and firm value may lead one to conclude that governance has no effect on firm value. Another may conclude that firms choose governance optimally and governance plays an important role in mitigating agency costs. In attempting to distinguish between views of governance, a researcher must overcome the problem of endogenously chosen governance structures. Most empirical technology is limited in producing inferences with clear indications of causality. On a brighter note, these are a few reasons why corporate governance has been and is likely remain an area for fruitful research.

1.2 Market Efficiency and Long-Term Studies

1.2.1 Introduction to the Efficient Markets Hypothesis

Whether capital markets are efficient is of interest to academics and practitioners in the field of finance as well as investors and policy makers. Policy makers want to know if market data contains useful information about the relevant risks to an institution.

Evidence on efficient markets should help investors trying to weigh the costs and benefits of active versus passive investment strategies. The efficiency of capital markets has implications for investor asset allocation as well. Practitioners are interested in whether exploitable inefficiencies exist. Academics are probably interested in all of the above but would also like to know the benefits of financial reward equal the costs of financial risk or if an economic free lunch is possible.

Commonly, the efficient markets hypothesis is subdivided into three forms. In a weak form efficient market, current stock prices reflect all information contained in past market trading data. If current stock prices reflect all publicly available information, the market is semi-strong form efficient. Finally, strong form efficient markets reflect all information, public or private. Another definition of efficient markets has probably received more attention in the literature as observed by most tests of the efficient markets hypothesis. Malkiel (2003) defines an efficient market as one in which investors are not allowed to "earn above-average returns without accepting above-average risks."

According to the latter definition, testing market efficiency requires a model of risk and return. A model of normal returns must be used in order to conclude that some returns are abnormal. Fama (1998) suggests that because an asset pricing model must be used to test the efficient markets hypothesis, tests of the efficient markets hypothesis are subject to a joint hypothesis. When a researcher rejects market efficiency, the asset pricing model being used to test market efficiency may also be rejected. Because of the

importance of models of risk and return in testing market efficiency, much of the debate over market efficiency has revolved around the joint hypothesis problem.

1.2.2 Asset Pricing Models

Models of expected returns have played an important role in the testing of the efficient markets hypothesis since a rejection of efficient markets involves finding abnormal returns. Whether asset pricing models capture the risks or styles they claim to is a debate closely related to the literature on efficient markets. Models of expected returns begin with the capital asset pricing model (CAPM) (Sharpe 1964). Derived under the assumptions of competitive markets, homogeneous expectations, and rational agents, the capital asset pricing model implies that expected returns are a function of asset betas:

$$E(R_i) = R_f + \beta_i [E(R_M) - R_f]_t \quad (1)$$

R_f is the return on the risk-free rate. R_M is the return on the market portfolio. The market portfolio includes all assets of the security universe. β_i, often referred to simply as beta, is the regression slope coefficient of a security return, R_i, on the return of the market portfolio. Early testing of the capital asset pricing model was supportive of the model. Black, Jensen and Scholes (1973) found lower returns than the model predicts for high beta securities and higher returns than the model predicts for low beta securities. Later tests look less favorably on the explanatory power of the capital asset pricing model's beta. In a later period of testing, the relationship between beta and stock returns does not exist (Fama and French 1992). In addition, beta has a difficult time

explaining the returns to portfolios formed on size (price times shares outstanding) and the ratio of book value to market value.

The shortcomings of the capital asset pricing model have led to the use of multi-factor asset pricing models. Merton's (1973) multi-beta capital asset pricing model and Ross's (1976) arbitrage pricing theory provide the theoretical foundation for use of multi-factor models. Merton's (1973) multi-beta capital asset pricing model arises from investors' demands to hedge undesirable states of nature. Betas from the "state variables" in Merton's model predict asset returns. In Ross's (1976) model, absence of arbitrage arguments necessitate economy wide risk factors with which assets covary. Assets that have greater covariance with economy wide risk factors have higher returns. Neither theory on multi-factor asset pricing says provides details about the state variables or risk factors.

Since size and book-to-market characteristics appear to capture a large portion of the variation in the cross-section of returns (Fama and French 1992), size and book-to-market factors were used by Fama and French (1993) to augment the capital asset pricing model and create a multi-factor model:

$$(Ri - Rf)_t = \alpha + \beta_1 (Rm - Rf)_t + \beta_2 SMB_t + \beta_3 HML_t \qquad (2)$$

SMB is the return on a portfolio long in small market capitalization stocks and short in big market capitalization stocks. HML is the return on a portfolio long in high book-to-market stocks and short in low book-to-market stocks. This model captures 80 to 95 percent of the variation in the returns of portfolios formed on book-to-market and size as observed by regression R-squareds. Model intercepts, which are used to measure the

specification of the model, are significant at conventional levels for 3 out of 25 size and book-to-market portfolios. Compared with about 10 out of 25 significant intercepts for the capital asset pricing model, the Fama and French (1993) multi-factor model seems better specified.

Although promising, the Fama and French (1993) model is also not without its shortcomings. Jegadeesh and Titman (1993, 2001) show that returns to portfolios formed on past returns cannot be explained by the returns to stocks of differing size and book-to-market characteristics. The past return phenomenon, dubbed momentum, is used by Carhart (1997) for studying the returns to mutual funds. Carhart (1997) augments the Fama and French (1993) model with the momentum factor:

$$(Ri - Rf)_t = \alpha + \beta_1 (Rm - Rf)_t + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 Momentum_t \qquad (3)$$

where *Momentum* is the return on a portfolio long in stocks with high past returns and short in stocks with low past returns.

Although the Fama and French (1993) and Carhart (1997) factors have been seen as imperfect from a theoretical standpoint (see Berk 1995), their use remains widespread. One alternative to the Fama and French (1993) and Carhart (1997) multifactor models is perhaps another set of multifactor models. Conditional asset pricing models of both the consumption variety and the market model variety have received a great deal of attention. Conditional consumption models are well aligned with Breeden's (1979) theory which provides an intuitive appeal when considering what risks are pertinent to investors (see Cochrane 2001). Conditional asset pricing models have intuitive appeal and theoretical soundness. However, the inability of conditional

models to empirically outmatch the Fama and French (1993) and Carhart (1997) multi-factor models may contribute to the relatively limited use of the conditional models.

The Fama and French (1993) and Carhart (1997) models used extensively in testing for long-term abnormal returns suffer from a few empirical deficiencies worth mentioning. The large returns of the factors and their ability to explain the cross-section of returns may be a product of hindsight bias. Large returns to size, book-to-market, and momentum strategies all begin to disappear when studied out of sample. Returns to small stocks fade after 1982 and book-to-market returns shrink after 1994 (Schwert 2002). Momentum produces high negative returns during 2000 after positive returns in the late 1990s (Malkiel 2003). Cooper, Gutierrez, and Marcum (2005) find that a hindsight portfolio made up of the largest size, highest book-to-market, and highest past return firms produces returns much larger than holding a market index. However, when choosing the best portfolio in real time as approximated by a recursive out-of-sample method, active strategies based on size, book-to-market, and momentum fare no better economically than a market index. Finally, the in-sample explanatory power of the factors is also suspect. Daniel and Titman (1997) show that factor loadings on SMB and HML add no additional information in explaining the cross-section of stock returns after sorting on size and book-to-market characteristics. Fama and French (1996) reject the null hypothesis of all regression intercepts equal to zero on their 3-factor model for 25 size and book-to-market portfolios. The multi-factor asset pricing models with the best ability to explain the cross-section of stock returns are empirically troubling. Because of this, researchers testing the efficient markets hypothesis by examining long-term

abnormal returns have been prompted to explore a number of model correction methodologies.

1.2.3 Long-Term Study Methodology

Empirical challenges to asset pricing models have prompted researchers to develop a well specified and powerful methodology for measuring long-term abnormal stock returns. Barber and Lyon (1997) compare two methods for measuring long-term abnormal returns. Cumulative abnormal returns and buy and hold abnormal returns are examined using random sampling techniques. Cumulative abnormal returns (CARs) are defined as the summed difference in returns over a sample period between the actual return on a sample firm and the expected return on a sample firm:

$$CAR_{iT} = \sum_{t=1}^{T} AR_{it} \tag{4}$$

where $AR_{it} = R_{it} - E(R_{it})$. Buy and hold abnormal returns (BHARs) are defined as the return on a buy and hold investment in a sample firm less the expected buy and hold investment in the sample firm:

$$BHAR_{iT} = \prod_{t=1}^{T}[1 + R_{it}] - \prod_{t=1}^{T}[1 + E(R_{it})] \tag{5}$$

Barber and Lyon (1997) notice a number of differences between the cumulative abnormal return method and the buy and hold abnormal return method. Test statistics are misspecified when using the Fama and French (1993) 3-factor model to measure long-term cumulative abnormal returns. However, when cumulative abnormal returns are measured with size and book-to-market matched control firms, test statistics are well specified and powerful. Cumulative abnormal returns suffer from measurement bias.

They are biased estimators of buy and hold abnormal returns. Barber and Lyon (1997) advocate using buy and hold abnormal returns since cumulative abnormal returns ignore the effects of compounding. In particular, buy and hold abnormal returns using size and book-to-market matched control firms are considered well specified and powerful.

Mitchell and Stafford (2000) compare buy and hold abnormal returns to calendar time abnormal returns. They suggest that test statistics are inflated when using buy and hold abnormal returns. A buy and hold methodology often falsely assumes independence among event observations. A bootstrapping procedure to correct for known biases of the buy and hold methodology does not account for the lack of independence among event study observations. Using a test statistic for buy and hold abnormal returns accounting for the correlation between event study observations reduces the significance of test statistics. Instead of using buy and hold abnormal returns, the authors advocate calendar time abnormal returns which use portfolios. Portfolios account for the correlation among observations through the portfolio's variance term.

In the calendar time approach, portfolio returns are usually regressed on a factor model and the intercept term or alpha is examined for significance. Non-event size/book-to-market portfolios have non-zero intercepts when regressed on the Fama and French (1993) model. Mitchell and Stafford (2000) suggest using control firm portfolios to correct the model misspecification. Control portfolios are created using non-event firms with size and book-to-market similar to event firms. Because size and book-to-market are similar for event and non-event portfolios, differences in size and book-to-

market should not be the cause of return differences between portfolios. In the case of long-term event studies, differences in abnormal returns from whether or not a firm has undertaken an event should be isolated in testing. Using non-event control firm portfolios, Mitchell and Stafford (2000) are able to explain several long-term anomalies identified by previous researchers.

A recent set of papers has focused less on the test statistic used to measure long-term abnormal returns and more on techniques used to overcome model misspecification and the joint hypothesis problem. Li and Zhao (2003) and Cheng (2003) both examine the ability of a propensity score matching procedure to mitigate model misspecification. Most matching procedures used to correct model misspecification involve matching on two or three dimensions. These papers point out that matching on two dimensions often ignores an important third dimension. When using a three dimensional match, matching quality in two dimensions is achieved at the expense of one dimension. This is referred to as the "curse of dimensionality." Li and Zhao (2003) and Cheng (2003) suggest that what is of interest in long-run event studies is the performance of a set of event firms relative to themselves had they not undergone the event. A missing data problem occurs since it is impossible to observe the returns of event firms as if they did not undergo the event. Propensity score theory shows that in the absence of randomization, the expected effect of an event can still be estimated by assuming the event is a function of observable variables. Using a logit regression model, a propensity score or the probability that a firm will undergo an event is assigned to all firms. Event firms are matched to non-event firms based on propensity scores. Li and Zhao (2003) and Cheng (2003) find that

firms undergoing secondary equity offerings (SEOs) do not have long-term buy and hold abnormal returns when compared to non-SEO firms with similar propensity scores. This is striking considering that the extant literature consistently detects long-term abnormal returns for SEO event firms using the buy and hold methodology.

Other research attempts to move away from specifying a model of expected returns in order to avoid a joint hypothesis. Abhyankar and Ho (2003) use non-parametric stochastic dominance criteria to observe long-term performance from an investor preference perspective. The return distribution of a portfolio composed of initial public offering (IPO) firms is compared to a number of benchmark portfolios. The first question asked is whether an IPO portfolio first order stochastically dominates or is dominated by a benchmark portfolio. In order for one distribution to first order stochastically dominate another, better outcomes must always have higher probabilities for the dominating distribution. As it turns out, no benchmark portfolios first order stochastically dominate IPO portfolios or vice-versa. Abhyankar and Ho find that the CRSP value weighted index second order stochastically dominate the IPO portfolio. This means lower returns are assigned higher probabilities more often for the IPO portfolios. Mathematically, the area under the cumulative density function of CRSP value weighted index returns is always less than the cumulative density function of IPO portfolio returns:

$$\int_0^z B(t)dt \leq \int_0^z I(t)dt \qquad (6)$$

where *B* is the distribution of benchmark portfolio returns and *I* is the distribution of IPO portfolio returns. No strong evidence of third order stochastic dominance, which indicates a preference for positive skewness, is found. The authors provide some evidence that risk averse investors prefer benchmark portfolios to IPO portfolios. They are quick to caution that theory provides little guidance towards an appropriate benchmark for long-term event studies.

1.2.4 Interpretations of the Evidence

After all testing and methodological tweaking is done (if it is ever really finished), the researcher is left with the "treacherous" task of interpreting the evidence. The meaning of a rejection of the efficient markets hypothesis is often debated. In recent years, several behavioral theories have been constructed to explain the presence of long-term abnormal returns. Many of them have been receiving increasing recognition. Barberis, Shleifer, and Vishny (1998) create a model of belief formation based on evidence in the literature of cognitive psychology. In their model, cognitive biases of conservatism and the representative heuristic generate underreaction and overreaction to earnings based news. Daniel, Hirshleifer, and Subrahmanyam (1998) show theoretically that the cognitive biases of overconfidence and biased self-attribution result in over- or underreaction to private signals and incorrect updating to public signals. Hong and Stein (1999) suggest that underreaction and overreaction can be generated by two groups of boundedly rational agents called "news watchers" and "momentum traders." The news watchers underreact to information privately revealed to them. The momentum traders overreact to price movements caused by the news watchers' trading activity. The

underlying thought of the behavioral theories is that investors desire to accurately price assets, but cognitive biases act as an obstacle that prevents them from doing so.

Alongside the behavioral theories have come a number of rational learning theories to explain seeming rejections of the efficient markets hypothesis. Parameter uncertainty arising from changes in the dividend process generates predictability in Lewellen and Shanken's (2002) model of investor learning. Brav and Heaton (2002) show that underreaction and learning generate indistinguishable patterns in data. In their model, both learning and underreaction are to changes in valuation-relevant parameters. A recent paper by Johnson (2004) provides a rational learning explanation for the negative relationship between stock returns and the dispersion of analysts forecasts, an empirical phenomenon previous researchers attributed to cognitive bias. The rational learning theories are useful for explaining a lack of real-time and out-of-sample predictability despite the appearance of many in-sample predictable patterns.

Some advocate that empirical imprecision is the reason for the rejection of the efficient markets hypothesis. Fama (1998) suggests that problems with the asset pricing model used to measure abnormal returns plague long-term studies. He admits that the three factor model in Fama and French (1993) does not explain the size and book-to-market portfolios the model was designed to explain. Fama (1998) recommends a reasonable change in methodology as the solution to asset pricing model problems. Indeed, the long-term study literature changes constantly, and the new methods advanced usually seem more precise conceptually and statistically.

Another response to apparent rejections of the efficient markets hypothesis is that perceived inefficiencies are not exploitable. If something is a true inefficiency, it should be an exploitable opportunity. Malkiel (2003) points out that many anomalies and in-sample predictable patterns may not be profitable after transactions costs or may be the result of data mining. Inefficiencies that appear large in-sample often lack out-of-sample robustness. If an inefficiency is real it may self destruct after exploitation by arbitrageurs, calling into question the type of parameter stability necessary to produce superior investment results. The lack of exploitability of apparent inefficiencies may be observed by the lack of persistence in returns on the part of fund managers (see Carhart 1997 and Malkiel 2003). If an abundance of market inefficiencies exist and are exploitable, it seems reasonable that some skilled fund managers should be able to recognize the inefficiencies and profit from them.

1.3 Governance and Market Efficiency

Recent research combines the literature on market efficiency and long term stock returns with the literature on corporate governance and firm value. This research investigates whether firms with more shareholder rights as estimated by the absence of antitakeover amendments and charter provisions have abnormal long-run stock returns. Gompers, Ishii, and Metrick (2003) use data on charter provisions and anti-takeover amendments from the Investor Responsibility Research Center (IRRC) to classify firms as Democracies or Dictatorships. They create a governance index that cumulates the number of "manager friendly" anti-takeover provisions contained in a firm's charter. The governance index has a possible range from 0 to 24 and increases by one for every

manager friendly charter provision a firm has. Firms with a governance index of 5 or less are classified as Democracies, and firms with a governance index of 14 or greater are classified as Dictatorships. Every year the Investor Responsibility Research Center releases a new publication, portfolios are rebalanced. Using the rise of the junk bond market and takeovers in the 1980s as an exogenous shock to the U.S. economy's corporate governance equilibrium, Gompers, Ishii, and Metrick (2003) conduct a long-run event study. They measure the long-run abnormal stock performance for Democracies and Dictatorships during the period from September 1990 to December 1999. A value weighted strategy long in a Democracy portfolio and short in a Dictatorship portfolio earns abnormal returns of 8.5% annually. Abnormal returns are measured by the intercept or alpha from monthly regressions on the Fama-French (1993) three-factor model augmented with Carhart's (1997) momentum factor. The models estimated in Gompers, Ishii, and Metrick (2003) that I replicate are as follows:

$$(R_{Democracy} - Rf)_t = \alpha + \beta_1 RMRF_t + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 Momentum_t \quad (7)$$

$$(R_{Dictatorship} - Rf)_t = \alpha + \beta_1 RMRF_t + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 Momentum_t \quad (8)$$

$$(R_{Democracy} - R_{Dictatorship})_t = \alpha + \beta_1 RMRF_t + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 Momentum_t \quad (9)$$

$R_{Democracy}$ is the return on the value weighted Democracy portfolio. $R_{Dictatorship}$ is the return on the value weighted Dictatorship portfolio. Rf is the return on a one month treasury bill. *RMRF* is the monthly value weighted return of the CRSP universe less the return on a one month treasury bill. *SMB* is the return on small stocks minus the return on big stocks. *HML* is the return on high book-to-market stocks minus the return on low

book-to-market stocks. *SMB* and *HML* are detailed in Fama and French (1993), pg. 9. *Momentum* is the return on high past return stocks minus the return on low past return stocks. *Momentum* is detailed in Carhart (1997), pg. 61.

I show the original results obtained by Gompers, Ishii, and Metrick (2003) and replicate their results in Table 1. All returns are monthly and value-weighted. Panel A shows the original results from Table VI in their paper. Panel B shows my replication of governance portfolio regressions on the four-factor model. The replicated results are almost identical. The Democracy portfolio earns positive and significant long-term abnormal returns as measured by the intercept from the Fama-French-Carhart four factor model. The Dictatorship portfolio earns negative long-term abnormal returns. Finally, the arbitrage portfolio buying Democracies and selling Dictatorships earns long-term abnormal returns of 8.5% annually based on the factor model intercept.

Gompers, Ishii, and Metrick (2003) conduct a number of other tests in addition to studying the long-run abnormal returns of Democracy and Dictatorship firms. They study the difference in firm value between firms of differing governance index levels. Tobin's Q, the ratio of the market value of assets to the book value of assets, is used as a proxy for firm value. Firms with higher governance index levels or fewer shareholder rights are found to have lower firm value from regressions of Tobin's Q on governance index levels. Gompers, Ishii, and Metrick (2003) obtain similar results by examining the relationship between shareholder rights and accounting performance. Firms with more shareholder rights have better accounting performance.

Table 1
In Sample Replication of Calendar Time Regressions from Gompers, Ishii, and Metrick (2003).

Firms are classified as Democracy and Dictatorship portfolios based on a governance index made of firm anti-takeover amendments and charter provisions from the Investor Responsibility Research Center (IRRC). A value of one is added to the index for each "manager friendly" charter provision a firm has. Democracies are defined as firms with 5 or fewer charter provisions. Dictatorships are defined as firms with 14 or more charter provisions. This table replicates the returns to a strategy based on a governance index calculated from anti-takeover amendments and charter provisions listed in publications by the Investor Responsibility Research Center (IRRC) and detailed in Gompers, Ishii, and Metrick (2003). The Democracy portfolio $(G \leq 5)$, the Dictatorship portfolio $(G \geq 14)$, and a hedge portfolio long in the Democracy portfolio and short in the Dictatorship portfolio are regressed on the Carhart (1997) four-factor model. Democracy and Dictatorship portfolios are in excess of the return on a one month treasury bill. *RMRF* is the monthly value weighted return of the CRSP universe less the return on a one month treasury bill. *SMB* is the return on small stocks minus the return on big stocks. *HML* is the return on high book-to-market stocks minus the return on low book-to-market stocks. *SMB* and *HML* are detailed in Fama and French (1993), pg. 9. *Momentum* is the return on high past return stocks minus the return on low past return stocks. *Momentum* is detailed in Carhart (1997), pg. 61. *alpha* measures the abnormal returns to holding any portolio. Portfolios are rebalanced in September 1990, July 1993, July 1995, and February 1998 when the Investor Responsibility Research Center (IRRC) releases new data. Panel A shows the original results in Gompers, Ishii, and Metrick (2003). Panel B replicates their results. All returns are monthly and value weighted. Standard errors are shown in parentheses and significance at the five-percent and one-percent levels is indicated by * and **.

Panel A: Original results by GIM, table VI (Sept. 1990 – Dec. 1999)

Governance Portfolio	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
GIM Democracy-Dictatorship	**0.71****	-0.04	-0.22*	-0.55**	-0.01
	(0.26)	(0.07)	(0.09)	(0.10)	(0.07)
GIM G<=5 (Democracy)	**0.29***	0.98**	-0.24**	-0.21**	-0.05
	(0.13)	(0.04)	(0.05)	(0.05)	(0.03)
GIM G>=14 (Dictatorship)	**-0.42***	1.03**	-0.02	0.34**	-0.05
	(0.19)	(0.05)	(0.06)	(0.07)	(0.05)

Panel B: Replication of GIM results on Four-Factor Model (Sept. 1990 – Dec. 1999)

Governance Portfolio	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
Democracy-Dictatorship	**0.70****	-0.05	-0.22*	-0.55**	-0.01
	(0.25)	(0.07)	(0.09)	(0.10)	(0.07)
G<=5 (Democracy)	**0.30***	0.99**	-0.24**	-0.21**	-0.06
	(0.14)	(0.04)	(0.05)	(0.05)	(0.03)
G>=14 (Dictatorship)	**-0.40***	1.04**	-0.02	0.34**	-0.05
	(0.18)	(0.05)	(0.06)	(0.07)	(0.05)

The relationship between governance and firm value is not without precedent in extant literature. However, the relationship between governance and long-term abnormal stock returns is new and surprising. The results found in Gompers, Ishii, and Metrick (2003) imply that an investor who took a position long in a portfolio of shareholder friendly firms and short in a position of manager friendly firms would have earned 85 percent over the period of the 1990s after adjusting for investment style and risk. The huge returns after adjusting for style and risk are the reason the paper has caught the attention of business media and academics.

Huge returns after adjusting for style and risk for portfolios formed on information about corporate governance are inconsistent with semi-strong form efficient markets. If capital markets are efficient, any relationship between governance and firm value should be reflected in security prices as soon as the information about governance is revealed. In the long run, firms should earn their cost of equity or their required rate of return (see Fama 1988), and there should be no difference in the long-run abnormal returns of firms with different governance index values. To illustrate, consider a simple rational expectations framework with two all equity firms that have similar costs of equity and a similar value of book assets. For both firms, all cash flows are paid out to shareholders in the form of dividends. The difference between the two firms is that one firm has a higher governance index value or poorer shareholder rights than the other. Firm L with a low governance index value has expected future cash flows of $20 million a year. Firm H with a high governance index value could have the same cash flows as firm L with a low governance index value. Instead, firm H has expected future cash

flows of $10 million because of the potential for increased managerial entrenchment from more anti-takeover amendments and the resulting expropriation of shareholder wealth. If both firms have costs of equity of 10 percent a year and book assets of $100 million, firm L has a present value of expected future cash flows of $200 million and a market-to-book ratio of 2. The present value of firm H's cash flows are much less at $100 million and a market-to-book ratio of 1. If the information about expected future cash flows, the cost of equity, and how the level of the governance index affects valuation inputs are public, semi-strong form efficient markets could value a firm with a lower governance index value differently. After the market values firms, however, investors should earn the firm's cost of equity. Firm L investors should earn its cost of equity at 10 percent or $20 million divided by $200 million. Likewise, investors in the firm with a higher governance index value, firm H, should also earn the firm's cost of equity at 10 percent or $10 million divided by $100 million.

To explain the inconsistency with efficient markets for the long-term abnormal returns to a strategy based on information about corporate governance, Gompers, Ishii, and Metrick (2003) propose that high agency costs to firms with fewer shareholder rights were unexpected. Firms with fewer shareholder rights had more capital expenditures and acquisitions. Insofar as capital expenditures and acquisitions are negligent uses of corporate resources or inefficient investment (see Jensen and Ruback (1983) and Bruner (2002) for a number of views on motives for acquisitions), firms that engage in those activities would have higher agency costs. Since investors did not understand the relationship between shareholder rights and agency costs, long-term abnormal stock

returns are said to reflect investor learning. Investors would have to learn how shareholder rights would affect the agency costs impacting firm value.

Another explanation for the anomalous long-term abnormal returns to a trading strategy based on corporate governance is offered by Cremers and Nair (2004). Cremers and Nair replicate the results in Gompers, Ishii, and Metrick (2003) and extend the sample period to 2001. From 1990 to 2001, a governance strategy generates annual abnormal returns of 7.5%. A governance strategy produces abnormal returns in the range of 10% to 15% annually when employed for firms with high institutional ownership. A strategy based on institutional ownership alone earns near zero long-term abnormal returns, suggesting that the large abnormal returns are still driven by sorts on the governance index as defined by the number of anti-takeover amendments. Cremers and Nair suggest that firms with more shareholder rights may be riskier than firms with fewer shareholder rights. They examine Tobin's Q and a measure of the standard deviation of profitability to come to this conclusion. Higher Qs are reported for firms with more shareholder rights or large blockholders. When firms have both high shareholder rights and large blockholders, Qs are statistically lower than when firms just have high shareholder rights or large blockholders. The standard deviation of profitability measures are higher for the firms with both large shareholders and high shareholder rights than for firms with only large blockholders.[1] Q is used as a measure of valuation and standard deviation of profitability measures may be used to represent the firm's discount rate. Cremers and Nair interpret lower Q's for firms with higher shareholder rights and large blockholders accompanied by higher returns and higher

standard deviation of profitability measures as being consistent with higher risk. Since firms can have different Qs and similar risk, as demonstrated in an earlier explanation of firm valuation and efficient markets, their interpretation comes with a degree of difficulty. Their interpretation of firm Qs and returns does not explain the higher Qs for firms with higher returns found in Gompers, Ishii, and Metrick (2003). Firms with better governance or fewer agency costs being more risky seems counterintuitive and contrary to other evidence. Lemmon and Lins (2003) find that firms who separate control and cash flow ownership have lower stock returns during the Asian financial crisis compared to other firms. This is interpreted as a greater expropriation of shareholder wealth during bad times by firms with poor ownership structures where ownership structure is a governance mechanism. Jensen (2004) suggests that better governance could help mitigate the agency costs of equity overvalued relative to insider information. Poor governance encourages managers to seek fraudulent activities that further inflate firm's stock price beyond an amount supported by managerial performance. Such fraud results in the destruction of billions of dollars of real value. Combining the views in Lemmon and Lins (2003) and Jensen (2004) would suggest that firms with poorer governance have greater cash flow volatilities and are in some sense riskier. Cremers and Nair (2004) admit that an absence of any theory about corporate governance and risk makes disentangling their risk explanation from Gompers, Ishii, and Metrick's (2003) learning explanation difficult in the presence of inconclusive evidence.

1.4 Notes

1. No test statistics are given to see whether the standard deviations of profitability measures are statistically different between different groups. Additionally, the difference in standard deviations of profitability measures between high shareholder rights/large blockholders and high shareholder rights/no large blockholders is not shown or discussed.

CHAPTER II

GOVERNANCE AND LONG-TERM ABNORMAL RETURNS

2.1 Introduction

I reexamine the long term abnormal returns found in Gompers, Ishii, and Metrick (2003) since the result is inconsistent with efficient markets. Rejections of the efficient markets hypothesis may be interpreted a number of ways. Fama (1998) mentions problems with the asset pricing model used to measure abnormal returns. He admits that the three factor model in Fama and French (1993) does not explain the size and book-to-market portfolios the model was designed for. Fama (1998) recommends a reasonable change in methodology as a solution to model misspecification and advocates the approach used by Mitchell and Stafford (2000).

Methodological problems in detecting long-run abnormal returns are based on the following argument: Researchers must first specify a model of expected returns in order to measure long-term abnormal returns. Using a misspecified model of expected returns may lead to spurious detection of long-term abnormal returns (Fama 1998). Specifically, a model of expected returns that cannot explain the returns to randomly sorted portfolios is problematic. A misspecified model will be biased towards detecting long-term abnormal returns (when none, in fact, exist) for any portfolio having the same characteristics as unexplained portfolios from random sorts. To address model specification problems, Mitchell and Stafford (2000) recommend the use of control firm portfolios.

In Mitchell and Stafford (2000), a factor model based on the returns of size and book-to-market portfolios is not well specified (as evidenced by a large number of significant intercepts for randomly sorted portfolios). This is consistent with the rejection of model intercepts being jointly zero for twenty five size and book-to-market portfolios in Fama and French (1996). In long-term corporate event studies testing for abnormal returns, control portfolios are created using non-event firms with size and book-to-market similar to event firms. Because size and book-to-market are similar for event and non-event portfolios, differences in size and book-to-market should not be the cause of return differences between portfolios. In the case of long-term event studies, differences in abnormal returns from whether or not a firm has undertaken an event should be isolated in testing. Using non-event control firm portfolios, Mitchell and Stafford (2000) are able to explain several long-term performance anomalies identified by previous researchers.

2.2 Data and Methods

2.2.1 Data

The sample used in this paper contains all firms in the Investor Responsibility Research Center (IRRC) universe (except firms with dual class shares). Firms must have a governance index, stock returns from the Center for Research in Security Prices (CRSP) and data on book value of equity from COMPUSTAT. This sample of firms can be found on Andrew Metrick's website.[1] The governance index has a possible range from 0 to 24 and increases by one for every manager friendly charter provision a firm has. Firms with a governance index of 5 or less are classified as Democracies, and firms

with a governance index of 14 or more are classified as Dictatorships. Gompers, Ishii, and Metrick (2003) have a more detailed description of the governance index and its construction. I construct monthly value weighted calendar time portfolios for Democracy and Dictatorship firms.

Throughout the paper, monthly portfolio returns are regressed on the Fama-French-Carhart (1997) four-factor model:

$$(Ri - Rf)_t = \alpha + \beta_1 (Rm - Rf)_t + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 Momentum_t \qquad (10)$$

RMRF is the value weighted monthly return to the Center for Research in Security Prices universe less the return on a one-month treasury bill. *SMB* is the return to small stocks less the return on big stocks. *HML* is the return to high book-to-market equity stocks less the return on low book-to-market equity stocks. *Momentum* is the return on high past return stocks (winners) minus the return on low past return stocks (losers).[2] I also use the 48 Fama and French (1997) industries. All industry data and factors can be obtained from Kenneth French's website except for *Momentum* which was obtained from Mark Carhart.[3] All other data are from the Center for Research in Security Prices.

2.2.2 Creating Matching Portfolios

Control firm portfolios may better measure long-term abnormal returns for a few reasons. First, previous literature shows asset pricing models cannot explain all the returns from the dimensions they were designed to explain. Fama and French (1993) find a number of size and book-to-market portfolios with significant intercepts from regressions on a model including a size and a book-to-market factor. This result shows up again in Mitchell and Stafford (2000). Fama (1998) recognizes this problem and

advocates matching portfolios as a viable alternative to asset pricing models. Second, a number of long-term anomalies have been explained by using a control firm portfolio approach; however, using such an approach does not guarantee an anomaly will disappear. Mitchell and Stafford (2000) find no long-term abnormal returns for events previous researchers found underreaction for; however, the negative long-term abnormal returns to bidders financing acquisitions with stock persist despite the matching portfolio adjustment. Eberhart, Maxwell, and Siddique (2004) find that long term abnormal returns following R&D increases persist even after using matching portfolios based on size, book-to-market and momentum. Finally, factor loadings may explain the cross-section of returns better than firm characteristics. Daniel and Titman (1997) show that factor loadings on SMB and HML add no additional information in explaining the cross-section of stock returns after sorting on size and book-to-market characteristics.

Size, book-to-market, and momentum are chosen as matching characteristics for a number of reasons. First, size, book-to-market, and momentum are the firm characteristics upon which the Fama-French-Carhart factors are constructed used to initially measure abnormal returns. Since long-term abnormal returns are measured by a model with size, book-to-market, and momentum factors, the conclusion from the past literature is that governance characteristics generate a cross-sectional spread in returns independent of the spread in returns generated by size, book-to-market, and momentum. Second, prior literature supports the independent cross-sectional explanatory power of all three characteristics (Fama and French 1992, Jegadeesh and Titman 1993). Third, asset pricing models with size and book-to-market factors cannot explain all of the

returns to size and book-to-market portfolios (Fama and French 1993). Size and book-to-market portfolios present a challenge to asset pricing models. Momentum portfolios may pose a similar challenge to asset pricing models; however, I am not aware of prior literature investigating the ability of a past return factor to explain returns to randomly sorted past return portfolios.

Because information on the governance index is available through the Investor Responsibility Research Center universe, I use the Investor Responsibility Research Center universe to create control firm portfolios. Additionally, portfolios based on the governance index from the Investor Responsibility Research Center universe generate long-term abnormal returns in Gompers, Ishii, and Metrick (2003). If I collect the sample outside of the Investor Responsibility Research Center universe, I could not be certain of the governance index value of the control firm portfolios. To test whether high governance or low governance index values generate long-term abnormal returns, I create a control firm portfolio with a governance index ranking different from the governance portfolio being tested. For example, the control portfolio for the Democracy portfolio contains firms that are not Democracies, but are otherwise similar in size, book-to-market and momentum to Democracy firms. I refer to this as the CTRL-Democracy portfolio. Likewise, the CTRL-Dictatorship portfolio contains firms that are not Dictatorships but are otherwise identical to firms in the Dictatorship portfolio.

2.3 Tests and Results

2.3.1 Control Firm Portfolios and Model Specification

2.3.1.1 Control Firm Portfolio Description

First, I replicate the results of Gompers, Ishii, and Metrick (2003) to ensure that long-term abnormal returns as measured by the Fama-French-Carhart model can be generated with governance portfolios (see Table 1). In Table 2, I construct a CTRL-Democracy portfolio by matching the non-Democracy firms with Democracy portfolio firms in September 1990, July 1993, July 1995, and February 1998 when the Investor Responsibility Research Center publications are released. Likewise, I construct the CTRL-Dictatorship portfolio by matching non-Dictatorship firms with Dictatorship firms in a similar manner. The CTRL-Democracy and CTRL-Dictatorship firms match the Democracy and Dictatorship firms on the dimensions of size, book-to-market, and momentum. To construct the CTRL-Democracy portfolio, all non-Democracy firms in the IRRC universe within 60% to 140% of a Democracy firm's book-to-market are kept. From the non-Democracy firms left, control firms within 90% to 110% of a Democracy firm's momentum are kept. Finally, non-Democracy firms closest in size are kept. The CTRL-Dictatorship portfolio is formed in a similar fashion.

Table 2 shows descriptive statistics for governance and control firm portfolios. Statistics are shown only for Democracy and Dictatorship firms with matching control firms. However, all Democracy and Dictatorship firms are used in the governance portfolios throughout the paper. Limiting the Democracy and Dictatorship portfolios to firms with a control firm match does not affect inferences. Panel A of table 2 shows

descriptive statistics for the governance index of all portfolios. The CTRL-Democracy portfolio has an average governance index of 9.6 which is near the mean governance index for the entire IRRC universe of around 9.0.[4] The governance index of any firm in the CTRL-Democracy portfolio is never less than 6. The CTRL-Democracy portfolio could be considered a governance neutral portfolio or a non-Democracy portfolio. Panel B shows that the CTRL-Dictatorship portfolio has an average governance index of 9.1 and any firm in the portfolio never has a governance index greater than 13. The CTRL-Dictatorship could also be considered governance neutral. Governance firms have governance index values of near zero correlation with the governance index values of control firms. Governance portfolios and control firm portfolios differ on the dimension of governance.

Panels B, C, and D in table 2 show a greater similarity between governance and control firms for the three dimensions used to find the control firms. Consistent with the literature on propensity score matching, the three dimensional match appears to sacrifice the matching quality for one dimension (Li and Zhao 2003 and Cheng 2003). Correlations between governance and control firms are lower for size as compared to book-to-market and momentum. The correlations for size range from .43 to .78, whereas correlations for book-to-market and momentum hover around .92 and 1.00 respectively. However, larger size on average and a greater dispersion in size for Democracy firms is reflected in the size statistics for CTRL-Democracy firms. Table 2 shows that other than the dimension of governance, control portfolios are quite similar to governance portfolios.

Table 2
Portfolio Descriptive Statistics.

Firms are classified as Democracy and Dictatorship portfolios based on a governance index made of firm anti-takeover amendments and charter provisions from the Investor Responsibility Research Center (IRRC). A value of one is added to the index for each "manager friendly" charter provision a firm has. Democracies are defined as firms with 5 or fewer charter provisions. Dictatorships are defined as firms with 14 or more charter provisions.

Using the Investor Responsibility Research Center (IRRC) universe, control firm portfolios are created for Democracy and Dictatorship portfolios. To create a control firm portfolio for the Democracy portfolio, only IRRC firms with a governance index value greater than 5 are possible candidates. To create a control firm portfolio for the Dictatorship portfolio, only IRRC firms with a governance index value less than 14 are possible candidates. In September 1990, July 1993, July 1995, and February 1998 firms are found that match the Democracy and Dictatorship portfolios on the basis of size, book-to-market and momentum. To find matching firms, all CTRL-Democracy firms in the IRRC universe within 60% to 140% of a Democracy firm's book-to-market and all CTRL-Democracy firms within 90% to 110% of a Democracy firm's momentum are kept. Finally, control firms with the closest size are kept. A CTRL-Dictatorship portfolio is formed in a similar fashion to the CTRL-Democracy portfolio.
Panel A shows average governance index values at the matching dates for each portfolio. Panel B shows descriptive statistics of each portfolio for size (price times shares outstanding divided by 1000). Panel B shows descriptive statistics of each portfolio for book-to-market equity. Panel C shows descriptive statistics of each portfolio for past 11 month momentum. 632 matches between Democracies and CTRL-Democracies are possible. 348 matches between Dictatorships and CTRL-Dictatorships are possible. All Democracy and Dictatorship firms are used throughout the paper to make up the governance portfolios. Limiting the governance portfolios to firms with a control firm does not affect inferences.

Panel A: Descriptive Statistics of the Portfolio Governance Index (September 1990, July 1993, July 1995, and February 1998)

Portfolio	Observations	Mean	Standard Deviation	Minimum	Maximum	Correlation
Democracy	543	4.4	0.8	2	5	
CTRL-Democracy	543	9.6	2.5	6	17	-0.021
Dictatorship	323	14.6	0.8	14	18	
CTRL-Dictatorship	323	9.1	2.6	2	13	-0.016

Panel B: Descriptive Statistics of Portfolio Size (September 1990, July 1993, July 1995, and February 1998)

Portfolio	Observations	Mean	Standard Deviation	Correlation
Democracy	543	3311	9738	
CTRL-Democracy	543	2692	9464	0.434
Dictatorship	323	2817	5721	
CTRL-Dictatorship	323	2529	5914	0.781

Table 2 (Continued)

Panel C: Descriptive Statistics of Portfolio Book-to-Market (September 1990, July 1993, July 1995, and February 1998)

Portfolio	Observations	Mean	Standard Deviation	Correlation
Democracy	543	0.61	0.48	
CTRL-Democracy	543	0.57	0.41	0.927
Dictatorship	323	0.67	0.52	
CTRL-Dictatorship	323	0.62	0.45	0.924

Panel D: Descriptive Statistics of Portfolio 11 Month Momentum (September 1990, July 1993, July 1995, and February 1998)

Portfolio	Observations	Mean	Standard Deviation	Correlation
Democracy	543	15.34	35.42	
CTRL-Democracy	543	15.06	35.33	0.998
Dictatorship	323	14.16	28.06	
CTRL-Dictatorship	323	13.94	28.27	0.998

2.3.1.2 Adjusted Calendar Time Abnormal Returns

Using the hedge portfolio methodology of Mitchell and Stafford (2000), I test whether the long term abnormal returns to the governance based strategy can be attributed to asset pricing model problems. The method consists of building a zero-investment calendar-time portfolio with a long position in a governance portfolio and a short position in the respective control portfolio. The monthly returns of this hedge portfolio are either averaged intertemporally (Panels A and B of Table 3) or regressed on the four factors (Panels C and D of Table 3). The resulting intercept provides a good

indication of the magnitude of the long-term abnormal returns after correcting for misspecifications in the asset-pricing model.

In panels A and B of Table 3, raw returns from control portfolios are used as benchmark portfolios for the Democracy and Dictatorship portfolios. The returns generated from the control portfolios are subtracted from the returns on the Democracy and Dictatorship portfolios every month to obtain the calendar time abnormal returns. Time series standard errors are used to test monthly calendar time abnormal returns for significance. In Panel A, I observe the mean monthly calendar time abnormal return of the Democracy portfolio. The Democracy portfolio earns negative and insignificant long-term abnormal returns of 0.15%. A similar result is observed in Panel B for the Dictatorship portfolio: 0.24% a month and statistically insignificant. In panels C and D, the returns on control firm portfolios are subtracted from the returns on Democracy and Dictatorship portfolios. The excess returns are regressed on the four Fama-French-Carhart factors to obtain the adjusted alphas or adjusted abnormal returns. In panel C, the adjusted alpha for the Democracy portfolio is a negative 0.03% per month and insignificant. In panel D, the Dictatorship portfolio has an adjusted alpha of 0.12% per month and is also insignificant. Using unadjusted four-factor alphas would underestimate abnormal returns for firms with low governance index values and overestimate abnormal returns for firms with high governance index values. After trying to mitigate model misspecification, I observe no long term abnormal returns relating to governance index values. From Table 3, neither Democracies nor Dictatorships earn long term abnormal returns after controlling for size, book-to-market, and momentum.

Table 3
Adjusted Calendar Time Abnormal Returns.

Firms are classified as Democracy and Dictatorship portfolios based on a governance index made of firm anti-takeover amendments and charter provisions from the Investor Responsibility Research Center (IRRC). A value of one is added to the index for each "manager friendly" charter provision a firm has. Democracies are defined as firms with 5 or fewer charter provisions. Dictatorships are defined as firms with 14 or more charter provisions. *RMRF* is the monthly value weighted return of the CRSP universe less the return on a one month treasury bill. *SMB* is the return on small stocks minus the return on big stocks. *HML* is the return on high book-to-market stocks minus the return on low book-to-market stocks. *SMB* and *HML* are detailed in Fama and French (1993), pg. 9. *Momentum* is the return on high past return stocks minus the return on low past return stocks. *Momentum* is detailed in Carhart (1997), pg. 61. *alpha* measures the abnormal returns to holding any portolio. Portfolios are rebalanced in September 1990, July 1993, July 1995, and February 1998 when the Investor Responsibility Research Center (IRRC) releases new data.

CTRL-Democracy and CTRL-Dictatorship portfolios are formed on book-to-market, size, and momentum. Panel A shows calendar time abnormal returns for the Democracy portfolio. Expected returns obtained from the CTRL-Democracy portfolio and are subtracted each month from Democracy portfolio returns to get abnormal returns. Time series standard errors from the monthly abnormal returns are used to test for significance. Panel B shows calendar time abnormal returns for the Dictatorship portfolio. Abnormal returns are calculated and tested in a similar fashion to the Democracy portfolio. Panel C shows the adjusted calendar time alpha for the Dictatorship portfolio. Every month CTRL-Democracy portfolio returns are subtracted from Democracy portfolio returns and are regressed on a four-factor model. Panel D shows adjusted calendar time alphas for the Dictatorship portfolio. Every month CTRL-Dictatorship portfolio returns are subtracted from Dictatorship portfolio returns and are regressed on a four-factor model. All returns are monthly, value weighted and in excess of the return on a one month treasury bill. Standard errors are shown in parentheses and significance at the 10, 5, and 1 percent levels is indicated by *, **, and ***.

Panel A: Democracy Portfolio Calendar Time Abnormal Returns (Sep. 1990 to Dec. 1999)

Monthly Portfolio Returns	Mean	Standard Deviation	Minimum	Maximum
Democracy - CTRL-Democracy	-0.15	2.49	-8.31	8.44
	(t=-0.63)			
	(p=0.523)			

Panel B: Dictatorship Portfolio Calendar Time Abnormal Returns (Sep. 1990 to Dec. 1999)

Monthly Portfolio Returns	Mean	Standard Deviation	Minimum	Maximum
Dictatorship - CTRL-Dictatorship	0.24	2.19	-5.59	5.46
	(t=1.18)			
	(p=0.241)			

Table 3 (Continued)

Panel C: Democracy Portfolio Adjusted Calendar Time Regressions (Sep. 1990 to Dec. 1999)

Monthly Portfolio Returns	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
Democracy - CTRL-Democracy	-0.03	0.01	-0.19**	0.08	-0.14**
	(0.25)	(0.07)	(0.09)	(0.10)	(0.06)

Panel D: Dictatorship Portfolio Adjusted Calendar Time Regressions (Sep. 1990 to Dec. 1999)

Monthly Portfolio Returns	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
Dictatorship - CTRL-Dictatorship	0.12	0.05	0.05	0.14	0.08
	(0.23)	(0.07)	(0.08)	(0.09)	(0.06)

2.3.1.3 Return on a Zero Cost Strategy Using Control Firm Portfolios

Model misspecification appears to be a reason why past researchers have observed long-term abnormal returns for a strategy based on governance index values. If so, the governance strategy's long-term abnormal returns should be generated from characteristics the chosen asset-pricing model cannot capture. To further examine this, I regress a zero-cost portfolio comprised of control firm portfolios on the four-factor model and present the results in Table 4. CTRL-Democracy and CTRL-Dictatorship firms should have similar governance index characteristics but may differ more on other dimensions. The CTRL-Democracy minus CTRL-Dictatorship strategy produces a four-factor model alpha of 0.83% a month with significance at the 5% level. This translates into an annual abnormal return of 10% a year. This is similar to the abnormal returns of 8.5% per year measured in the same way for the strategy long on Democracies and short on Dictatorships. This large and significant abnormal return for a strategy based on governance neutral portfolios suggests that returns to characteristics not fully captured by the four-factor model could explain the results observed by prior researchers.

Table 4
Return on Zero Cost Control Firm Portfolio Strategy.

Firms are classified as Democracy and Dictatorship portfolios based on a governance index made of firm anti-takeover amendments and charter provisions from the Investor Responsibility Research Center (IRRC). A value of one is added to the index for each "manager friendly" charter provision a firm has. Democracies are defined as firms with 5 or fewer charter provisions. Dictatorships are defined as firms with 14 or more charter provisions. *RMRF* is the monthly value weighted return of the CRSP universe less the return on a one month treasury bill. *SMB* is the return on small stocks minus the return on big stocks. *HML* is the return on high book-to-market stocks minus the return on low book-to-market stocks. *SMB* and *HML* are detailed in Fama and French (1993), pg. 9. *Momentum* is the return on high past return stocks minus the return on low past return stocks. *Momentum* is detailed in Carhart (1997), pg. 61. *alpha* measures the abnormal returns to holding any portolio. Portfolios are rebalanced in September 1990, July 1993, July 1995, and February 1998 when the Investor Responsibility Research Center (IRRC) releases new data.

CTRL-Democracy and CTRL-Dictatorship portfolios are formed on size, book-to-market, and momentum. Every month CTRL-Dictatorship portfolio returns are subtracted from CTRL-Democracy portfolio returns and are regressed on a factor model. All returns are monthly, value weighted and in excess of the return on a one month treasury bill. Standard errors are shown in parentheses and significance at the 10, 5, and 1 percent levels is indicated by *, **, and ***.

CTRL-Democracy Portfolio minus CTRL-Dictatorship Portfolio Four-Factor Model Regressions (Sep. 1990 to Dec. 1999)

Monthly Portfolio Returns	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
CTRL-Democracy - CTRL-Dictatorship	**0.83****	-0.01	0.01	-0.49***	0.20**
	(0.33)	(0.09)	(0.11)	(0.13)	(0.08)

2.3.2 Robustness

2.3.2.1 Extreme Governance Control Firm Portfolios

The results so far imply no long-term abnormal returns to a governance strategy after trying to mitigate misspecification in the asset-pricing model with control firm portfolios. However, control firm portfolios may contain some near-Democracies and near-Dictatorships. One could argue that near-Democracies and near-Dictatorships are generating returns similar to Democracies and Dictatorships since governance characteristics could be similar. To account for this problem, I make sure control firm portfolios contain firms at least three governance index values removed from Democracies and Dictatorships. From Panel A of Table 5, the CTRL2-Democracy has a minimum governance index value of 9 and an average governance index value of 11.1. The CTRL2-Dictatorship has a maximum governance index value of 10 and an average governance index value of 7.8. The CTRL2-Dictatorship portfolio is now much closer to a Democracy portfolio compared to the previously defined CTRL-Dictatorship portfolio. Likewise, the new control portfolio for the Democracy portfolio is much closer to a Dictatorship portfolio.

Intertemporal averages of adjusted Democracy and Dictatorship returns are insignificantly different from zero as seen in Panels B and C of Table 5. Adjusted intercepts from four factor model regressions in Panels D and E are also insignificant statistically and economically. The findings of no long-term abnormal returns for the governance portfolios shown in Table 3 are unlikely to be driven by near-Democracies and near-Dictatorships.

Table 5
Extreme Control Portfolios: Adjusted Calendar Time Abnormal Returns.

Firms are classified as Democracy and Dictatorship portfolios based on a governance index made of firm anti-takeover amendments and charter provisions from the Investor Responsibility Research Center (IRRC). A value of one is added to the index for each "manager friendly" charter provision a firm has. Democracies are defined as firms with 5 or fewer charter provisions. Dictatorships are defined as firms with 14 or more charter provisions. *RMRF* is the monthly value weighted return of the CRSP universe less the return on a one month treasury bill. *SMB* is the return on small stocks minus the return on big stocks. *HML* is the return on high book-to-market stocks minus the return on low book-to-market stocks. *SMB* and *HML* are detailed in Fama and French (1993), pg. 9. *Momentum* is the return on high past return stocks minus the return on low past return stocks. *Momentum* is detailed in Carhart (1997), pg. 61. *alpha* measures the abnormal returns to holding any portolio. Portfolios are rebalanced in September 1990, July 1993, July 1995, and February 1998 when the Investor Responsibility Research Center (IRRC) releases new data.

CTRL2-Democracy and CTRL2-Dictatorship portfolios are formed on book-to-market, size, and momentum and are three G index values removed from Democracy and Dictatorship portfolios. Panel A shows calendar time abnormal returns for the Democracy portfolio. Expected returns obtained from the CTRL2-Democracy portfolio and are subtracted each month from Democracy portfolio returns to get abnormal returns. Time series standard errors from the monthly abnormal returns are used to test for significance. Panel B shows calendar time abnormal returns for the Dictatorship portfolio. Abnormal returns are calculated and tested in a similar fashion to the Democracy portfolio. Panel C shows the adjusted calendar time alpha for the Dictatorship portfolio. Every month CTRL2-Democracy portfolio returns are subtracted from Democracy portfolio returns and are regressed on a four-factor model. Panel D shows adjusted calendar time alphas for the Dictatorship portfolio. Every month CTRL2-Dictatorship portfolio returns are subtracted from Dictatorship portfolio returns and are regressed on a four-factor model. All returns are monthly, value weighted and in excess of the return on a one month treasury bill. Standard errors are shown in parentheses and significance at the 10, 5, and 1 percent levels is indicated by *, **, and ***.

Panel A: Descriptive Statistics of the Monthly Portfolio Governance Index (Sep. 1990 to Dec. 1999)

Portfolio	Mean	Standard Deviation	Minimum	Maximum
Democracy	4.4	0.8	2	5
CTRL2-Democracy	11.1	1.7	9	17
Dictatorship	14.6	0.8	14	18
CTRL2-Dictatorship	7.8	1.8	2	10

Table 5 (Continued)

Panel B: Democracy Portfolio Calendar Time Abnormal Returns (Sep. 1990 to Dec. 1999)

Monthly Portfolio Returns	Mean	Standard Deviation	Minimum	Maximum
Democracy – CTRL2-Democracy	-0.02 *(t=-0.09)* *(p=0.924)*	2.41	-7.67	6.87

Panel C: Dictatorship Portfolio Calendar Time Abnormal Returns (Sep. 1990 to Dec. 1999)

Monthly Portfolio Returns	Mean	Standard Deviation	Minimum	Maximum
Dictatorship – CTRL2-Dictatorship	0.13 *(t=0.58)* *(p=0.560)*	2.44	-6.27	6.15

Panel D: Democracy Portfolio Adjusted Calendar Time Regressions (Sep. 1990 to Dec. 1999)

Monthly Portfolio Returns	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
Democracy -	0.09	0.00	-0.07	-0.05	-0.12*
CTRL2-Democracy	(0.25)	(0.07)	(0.09)	(0.10)	(0.06)

Panel E: Dictatorship Portfolio Adjusted Calendar Time Regressions (Sep. 1990 to Dec. 1999)

Monthly Portfolio Returns	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
Dictatorship -	-0.01	0.03	0.19**	0.27***	0.13**
CTRL2-Dictatorship	(0.25)	(0.07)	(0.08)	(0.10)	(0.06)

2.3.2.2 Alternative Matching Characteristics

Fama and French (1997) show that intercepts from the three-factor model are significant for some of the 48 portfolios formed on industry. This means that industry generates a cross-sectional spread in returns not captured by asset pricing models. Matching on an industry dimension may control for any industry shocks generating long-term abnormal returns unrelated to governance. In table 6, I find control firms based on industry, size and momentum. With the industry-size-momentum formed control portfolios, I find no abnormal returns to governance portfolios.

Table 6
Adjusted Calendar Time Abnormal Returns: Matching on Size, Industry and Momentum.

Firms are classified as Democracy and Dictatorship portfolios based on a governance index made of firm anti-takeover amendments and charter provisions from the Investor Responsibility Research Center (IRRC). A value of one is added to the index for each "manager friendly" charter provision a firm has. Democracies are defined as firms with 5 or fewer charter provisions. Dictatorships are defined as firms with 14 or more charter provisions. *RMRF* is the monthly value weighted return of the CRSP universe less the return on a one month treasury bill. *SMB* is the return on small stocks minus the return on big stocks. *HML* is the return on high book-to-market stocks minus the return on low book-to-market stocks. *SMB* and *HML* are detailed in Fama and French (1993), pg. 9. *Momentum* is the return on high past return stocks minus the return on low past return stocks. *Momentum* is detailed in Carhart (1997), pg. 61. *alpha* measures the abnormal returns to holding any portolio. Portfolios are rebalanced in September 1990, July 1993, July 1995, and February 1998 when the Investor Responsibility Research Center (IRRC) releases new data.

To create a control firm portfolio for the Democracy portfolio, all IRRC firms with a governance index value greater than 5 are used. To create a control firm portfolio for the Dictatorship portfolio, all IRRC firms with a governance index value less than 14 are used. In September 1990, July 1993, July 1995, and February 1998 firms are found that match the Democracy and Dictatorship portfolios on the basis of size, industry and momentum. To find matching firms, all non-Democracy firms in the IRRC universe within 80% to 120% of a Democracy firm's momentum are kept. The firms within the same industry and finally firms with the closest size are kept. A Non-Dictatorship portfolio is formed in a similar fashion to the Non-Democracy portfolio. Panel A shows calendar time abnormal returns for the Democracy portfolio. Expected returns are obtained from the Non-Democracy portfolio and are subtracted each month from Democracy portfolio returns to get abnormal returns. Time series standard errors from the monthly abnormal returns are used to test for significance. Panel B shows calendar time abnormal returns for the Dictatorship portfolio. Abnormal returns are calculated and tested in a similar fashion to the Democracy portfolio. Panel C shows the adjusted calendar time alpha for the Dictatorship portfolio. Every month Non-Democracy portfolio returns are subtracted from Democracy portfolio returns and are regressed on a four-factor model. Panel D shows adjusted calendar time alphas for the Dictatorship portfolio. Every month Non-Dictatorship portfolio returns are subtracted from Dictatorship portfolio returns and are regressed on a four-factor model. All returns are monthly, value weighted and in excess of the return on a one month treasury bill. Standard errors are shown in parentheses and significance at the five-percent and one-percent levels is indicated by * and **.

Panel A: Democracy Portfolio Calendar Time Abnormal Returns (Sep. 1990 to Dec. 1999)

Monthly Portfolio Returns	Mean	Standard Deviation	Minimum	Maximum
Democracy - Non-Democracy	-0.10	1.96	-6.05	3.94
	(t=-0.52)			
	(p=0.599)			

Panel B: Dictatorship Portfolio Calendar Time Abnormal Returns (Sep. 1990 to Dec. 1999)

Monthly Portfolio Returns	Mean	Standard Deviation	Minimum	Maximum
Dictatorship - Non-Dictatorship	-0.20	2.07	-6.95	5.95
	(t=-1.01)			
	(p=0.309)			

Table 6

Panel C: Democracy Portfolio Adjusted Calendar Time Regressions (Sep. 1990 to Dec. 1999)

Monthly Portfolio Returns	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
Democracy - Non-Democracy	-0.02	0.07	-0.23**	-0.13	-0.19**
	(0.19)	(0.05)	(0.06)	(0.07)	(0.05)

Panel D: Dictatorship Portfolio Adjusted Calendar Time Regressions (Sep. 1990 to Dec. 1999)

Monthly Portfolio Returns	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
Dictatorship – Non-Dictatorship	-0.10	-0.02	-0.08	0.05	-0.08
	(0.21)	(0.06)	(0.07)	(0.09)	(0.05)

2.3.2.3 Wal-Mart and the Large Market Value, Low Book-to-Market Portfolio

Fama and French (1993) in Table 9a and Mitchell and Stafford (2000) in Table 7 show that a portfolio of firms in the largest size quintile and lowest book-to-market quintile has positive and significant intercepts from regressions on the Fama-French three-factor model. Wal-Mart is the largest firm in the Democracy portfolio and it also lies in the lowest book-to-market quintile in the sample of IRRC firms. Large size and low book-to-market is a combination of dimensions the model has difficulty explaining. I remove Wal-Mart from the Democracy portfolio in Table 7. After removing Wal-Mart, Democracy portfolio returns have insignificant intercepts when regressed on a four-factor model.

Table 7
Effect of Dropping Wal-Mart on Democracy Portfolio.

Firms are classified as Democracy and Dictatorship portfolios based on a governance index made of firm anti-takeover amendments and charter provisions from the Investor Responsibility Research Center (IRRC). A value of one is added to the index for each "manager friendly" charter provision a firm has. Democracies are defined as firms with 5 or fewer charter provisions. Dictatorships are defined as firms with 14 or more charter provisions. *RMRF* is the monthly value weighted return of the CRSP universe less the return on a one month treasury bill. *SMB* is the return on small stocks minus the return on big stocks. *HML* is the return on high book-to-market stocks minus the return on low book-to-market stocks. *SMB* and *HML* are detailed in Fama and French (1993), pg. 9. *Momentum* is the return on high past return stocks minus the return on low past return stocks. *Momentum* is detailed in Carhart (1997), pg. 61. *alpha* measures the abnormal returns to holding any portolio. Portfolios are rebalanced in September 1990, July 1993, July 1995, and February 1998 when the Investor Responsibility Research Center (IRRC) releases new data.

Panel A shows value weighted monthly regressions of the Democracy portfolio on the Fama-French Carhart four factor model. Panel B shows Democracy portfolio regressions on factor models that exclude Wal-Mart from the Democracy portfolio. Standard errors are shown in parentheses and significance at the five-percent and one-percent levels is indicated by * and ** respectively.

Panel A: Democracy Portfolio Calendar Time Regressions (Sep. 1990 to Dec. 1999)

Portfolio	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
Democracy	**0.30***	0.99**	-0.24**	-0.21**	-0.06
	(0.14)	(0.04)	(0.05)	(0.05)	(0.03)

Panel B: Democracy Portfolio Calendar Time Regressions without Wal-Mart (Sep. 1990 to Dec. 1999)

Portfolio	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
Democracy without Wal-Mart	0.21	1.01**	-0.19**	-0.10	-0.07
	0.14	0.04	0.05	0.06	0.04

2.3.2.4 Portfolios Matched on Book-to-Market

Finally, forming control portfolios on book-to-market alone results in insignificant adjusted intercepts and calendar time abnormal returns. The results from Table 8 are consistent with returns for book-to-market characteristics that are difficult for asset pricing models to explain.

Table 8
Adjusted Calendar Time Abnormal Returns: Book-to-Market Matching.

Firms are classified as Democracy and Dictatorship portfolios based on a governance index made of firm anti-takeover amendments and charter provisions from the Investor Responsibility Research Center (IRRC). A value of one is added to the index for each "manager friendly" charter provision a firm has. Democracies are defined as firms with 5 or fewer charter provisions. Dictatorships are defined as firms with 14 or more charter provisions. *RMRF* is the monthly value weighted return of the CRSP universe less the return on a one month treasury bill. *SMB* is the return on small stocks minus the return on big stocks. *HML* is the return on high book-to-market stocks minus the return on low book-to-market stocks. *SMB* and *HML* are detailed in Fama and French (1993), pg. 9. *Momentum* is the return on high past return stocks minus the return on low past return stocks. *Momentum* is detailed in Carhart (1997), pg. 61. *alpha* measures the abnormal returns to holding any portolio. Portfolios are rebalanced in September 1990, July 1993, July 1995, and February 1998 when the Investor Responsibility Research Center (IRRC) releases new data.

CTRL-Democracy and CTRL-Dictatorship portfolios are formed on book-to-market matching alone. Panel A shows calendar time abnormal returns for the Democracy portfolio. Expected returns obtained from the CTRL-Democracy portfolio and are subtracted each month from Democracy portfolio returns to get abnormal returns. Time series standard errors from the monthly abnormal returns are used to test for significance. Panel B shows calendar time abnormal returns for the Dictatorship portfolio. Abnormal returns are calculated and tested in a similar fashion to the Democracy portfolio. Panel C shows the adjusted calendar time alpha for the Dictatorship portfolio. Every month CTRL-Democracy portfolio returns are subtracted from Democracy portfolio returns and are regressed on a four-factor model. Panel D shows adjusted calendar time alphas for the Dictatorship portfolio. Every month CTRL-Dictatorship portfolio returns are subtracted from Dictatorship portfolio returns and are regressed on a four-factor model. All returns are monthly, value weighted and in excess of the return on a one month treasury bill. Standard errors are shown in parentheses and significance at the five-percent and one-percent levels is indicated by * and **.

Panel A: Democracy Portfolio Calendar Time Abnormal Returns (Sep. 1990 to Dec. 1999)

Monthly Portfolio Returns	Mean	Standard Deviation	Minimum	Maximum
Democracy - CTRL-Democracy	0.22 (t=1.24) (p=0.217)	1.91	-4.11	6.12

Panel B: Dictatorship Portfolio Calendar Time Abnormal Returns (Sep. 1990 to Dec. 1999)

Monthly Portfolio Returns	Mean	Standard Deviation	Minimum	Maximum
Dictatorship - CTRL-Dictatorship	-0.19 *(t=-0.84)* *(p=0.398)*	2.34	-6.61	8.95

Table 8 (Continued)

Panel C: Democracy Portfolio Adjusted Calendar Time Regressions (Sep. 1990 to Dec. 1999)

Monthly Portfolio Returns	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
Democracy - CTRL-Democracy	0.29	0.00	-0.13	-0.16*	-0.08
	(0.20)	(0.06)	(0.07)	(0.08)	(0.05)

Panel D: Dictatorship Portfolio Adjusted Calendar Time Regressions (Sep. 1990 to Dec. 1999)

Monthly Portfolio Returns	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
Dictatorship - CTRL-Dictatorship	-0.23	0.09	0.21**	0.18	-0.06
	(0.23)	(0.07)	(0.08)	(0.09)	(0.06)

2.3.2.5 Entrenchment Index

Bebchuk, Cohen, and Ferrell (2004) argue that only a few anti-takeover amendments matter. The existence or absence of six provisions (including staggered boards, limits to shareholder bylaw amendments, supermajority requirements for mergers, supermajority requirements for charter amendments, golden parachutes, and poison pills) makes up an entrenchment index. In Table 9, I replicate the results from Bebchuk, Cohen, and Ferrell. A portfolio long in the firms with the lowest entrenchment index (entrenchment index=0) and short in the firms with the highest entrenchment index (entrenchment index=5or6) earns abnormal returns of an astonishing 14% a year. The portfolio made up of firms with an entrenchment index equal to zero is referred to as the DemocracyBCF portfolio. The portfolio made up of firms with an entrenchment index equal to five or six is referred to as the DictatorshipBCF portfolio. Bebchuk, Cohen, and Ferrell also find Tobin's Q is increasing for lower values of the entrenchment index.

Table 9
In Sample Replication of Calendar Time Regressions from Bebchuk, Cohen, and Ferrell (2004).

This table replicates the returns to a strategy based on an entrenchment index calculated from anti-takeover amendments and charter provisions listed in publications by the Investor Responsibility Research Center (IRRC) and detailed in Bebchuk, Cohen, and Ferrell (2004). The DemocracyBCF portfolio (Entrenchment Index=0), the DictatorshipBCF portfolio (Entrenchment Index=5or6), and a hedge portfolio long in the DemocracyBCF portfolio and short in the Dictatorship portfolio are regressed on the Carhart (1997) four-factor model. DemocracyBCF and DictatorshipBCF portfolios are in excess of the return on a one month treasury bill. *RMRF* is the monthly value weighted return of the CRSP universe less the return on a one month treasury bill. *SMB* is the return on small stocks minus the return on big stocks. *HML* is the return on high book-to-market stocks minus the return on low book-to-market stocks. *SMB* and *HML* are detailed in Fama and French (1993), pg. 9. *Momentum* is the return on high past return stocks minus the return on low past return stocks. *Momentum* is detailed in Carhart (1997), pg. 61. *alpha* measures the abnormal returns to holding any portolio. Portfolios are rebalanced in September 1990, July 1993, July 1995, and February 1998 when the Investor Responsibility Research Center (IRRC) releases new data. Panel A shows the original results in Bebchuk, Cohen, and Ferrell (2004). Panel B replicates their results. All returns are monthly and value weighted. Standard errors are shown in parentheses and significance at the 10, 5, and 1 percent levels is indicated by *, **, and ***.

Panel A: Original results by BCF, table XI (Sept. 1990 – Dec. 1999)

Governance Portfolio	*alpha*
DemocracyBCF-DictatorshipBCF	1.16***
	(0.284)

Panel B: Replication of BCF results on Four-Factor Model (Sept. 1990 – Dec. 1999)

Governance Portfolio	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
DemocracyBCF-DictatorshipBCF	1.20***	-0.18**	-0.33***	-0.59***	-0.11
	(0.271)	(0.077)	(0.094)	(0.108)	(0.069)
DemocracyBCF	0.50***	0.95***	-0.33***	-0.27***	-0.08**
	(0.120)	(0.034)	(0.041)	(0.048)	(0.031)
DictatorshipBCF	-0.70***	1.12***	0.00	0.31***	0.03
	(0.210)	(0.060)	(0.073)	(0.084)	(0.054)

Since the information about the entrenchment index is publicly available, the large abnormal returns to a strategy based on the entrenchment index information are at odds with efficient markets. Known characteristics related to the cross-section of stock returns could explain the returns to a strategy based on the governance index in Gompers, Ishii, and Metrick (2003). Since the entrenchment index used by Bebchuk,

Cohen, and Ferrell (2004) is also public information, the returns to the entrenchment index strategy are explored similarly. The CTRL-DemocracyBCF portfolio is composed of firms with an entrenchment index greater than zero. CTRL-DemocracyBCF firms match DemocracyBCF firms on past 11 month momentum. The CTRL-Dictatorship portfolio is composed of firms with an entrenchment index less than five that match DictatorshipBCF firms on book-to-market.

Table 10 shows the returns for the entrenchment index strategy after control firm portfolio adjustments. In panel A, calendar time abnormal returns for the DictatorshipBCF portfolio are negative but insignificant. Panel B shows positive but near zero returns for the DictatorshipBCF portfolio. The results from the adjusted calendar time regressions are similar. Panels C and D show insignificant and near zero abnormal returns for the DemocracyBCF and DictatorshipBCF portfolios. Past researchers may have detected abnormal returns to governance based index strategies because the characteristics of firms with better governance were highly correlated with the characteristics of firms that did well in the 1990s. Likewise, firms with poor governance may have characteristics other than governance highly correlated with firms that did poorly during the 1990s.

Table 10
Adjusted Calendar Time Abnormal Returns for Entrenchment Index Portfolios.

An entrenchment index is calculated from anti-takeover amendments and charter provisions listed in publications by the Investor Responsibility Research Center (IRRC) and detailed in Bebchuk, Cohen, and Ferrell (2004). The DemocracyBCF portfolio (Entrenchment Index=0) and the DictatorshipBCF portfolio (Entrenchment Index=5or6) are regressed on the Carhart (1997) four-factor model. *RMRF* is the monthly value weighted return of the CRSP universe less the return on a one month treasury bill. *SMB* is the return on small stocks minus the return on big stocks. *HML* is the return on high book-to-market stocks minus the return on low book-to-market stocks. *SMB* and *HML* are detailed in Fama and French (1993), pg. 9. *Momentum* is the return on high past return stocks minus the return on low past return stocks. *Momentum* is detailed in Carhart (1997), pg. 61. *alpha* measures the abnormal returns to holding any portolio. Portfolios are rebalanced in September 1990, July 1993, July 1995, and February 1998 when the Investor Responsibility Research Center (IRRC) releases new data.

CTRL-DemocracyBCF firms have an entrenchment index greater than 0 and are matched to DemocracyBCF (Entrenchment Index=0) firms on past 11 month momentum in September 1990, July 1993, July 1995, and February 1998. CTRL-DictatorshipBCF firms have an entrenchment index less than 5 and are matched to DictatorshipBCF (Entrenchment Index=5or6) firms on book-to-market in September 1990, July 1993, July 1995, and February 1998. Panel A shows calendar time abnormal returns for the DemocracyBCF portfolio. Expected returns are obtained from the CTRL- DemocracyBCF portfolio and are subtracted each month from DemocracyBCF portfolio returns to get abnormal returns. Time series standard errors from the monthly abnormal returns are used to test for significance. Panel B shows calendar time abnormal returns for the DictatorshipBCF portfolio. Abnormal returns are calculated and tested in a similar fashion to the DemocracyBCF portfolio. Panel C shows the adjusted calendar time alpha for the DictatorshipBCF portfolio. Every month CTRL-DemocracyBCF portfolio returns are subtracted from DemocracyBCF portfolio returns and are regressed on a four-factor model. Panel D shows adjusted calendar time alphas for the DictatorshipBCF portfolio. Every month CTRL-DictatorshipBCF portfolio returns are subtracted from DictatorshipBCF portfolio returns and are regressed on a four-factor model. All returns are monthly, value weighted and in excess of the return on a one month treasury bill. Standard errors are shown in parentheses and significance at the 10, 5, and 1 percent levels is indicated by *, **, and ***.

Panel A: DemocracyBCF Portfolio Calendar Time Abnormal Returns (Sep. 1990 to Dec. 1999)

Monthly Portfolio Returns	Mean	Standard Deviation	Minimum	Maximum
DemocracyBCF – CTRL-DemocracyBCF	-0.44	6.97	-28.72	28.88
	(t=-0.66)			
	(p=0.506)			

Panel B: DictatorshipBCF Portfolio Calendar Time Abnormal Returns (Sep. 1990 to Dec. 1999)

Monthly Portfolio Returns	Mean	Standard Deviation	Minimum	Maximum
DictatorshipBCF – CTRL-DictatorshipBCF	0.08	2.51	-7.23	7.58
	(t=0.34)			
	(p=0.736)			

Table 10 (Continued)

Panel C: DemocracyBCF Portfolio Adjusted Calendar Time Regressions (Sep. 1990 to Dec. 1999)

Monthly Portfolio Returns	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
DemocracyBCF - CTRL-DemocracyBCF	-0.11	-0.36*	0.47*	0.26	0.14
	(0.71)	(0.20)	(0.24)	(0.28)	(0.18)

Panel D: DictatorshipBCF Portfolio Adjusted Calendar Time Regressions (Sep. 1990 to Dec. 1999)

Monthly Portfolio Returns	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
DictatorshipBCF - CTRL-DictatorshipBCF	0.18	-0.14*	-0.03	-0.16	0.06
	(0.26)	(0.07)	(0.09)	(0.10)	(0.07)

If near-Democracies and near-Dictatorships are included in control portfolios, the control portfolios may be contaminated. In Table XI of Bebchuk, Cohen, and Ferrell (2004) long portfolios include firms with an entrenchment index as high as two. Short portfolios include firms with an entrenchment index as low as three. With this in mind, I construct the CTRL2-DemocracyBCF portfolio in Table 11 with firms that have an entrenchment index greater than two. The CTRL2-Dictatorship portfolio is constructed with firms than have an entrenchment index less than three. The results are similar to Table 10. Near-Democracies and near-Dictatorships in the control firm portfolios do not seem to be affecting the results.

Table 11
Extreme Control Portfolios: Adjusted Calendar Time Abnormal Returns for Entrenchment Index Portfolios.

An entrenchment index is calculated from anti-takeover amendments and charter provisions listed in publications by the Investor Responsibility Research Center (IRRC) and detailed in Bebchuk, Cohen, and Ferrell (2004). The DemocracyBCF portfolio (Entrenchment Index=0) and the DictatorshipBCF portfolio (Entrenchment Index=5or6) are regressed on the Carhart (1997) four-factor model. *RMRF* is the monthly value weighted return of the CRSP universe less the return on a one month treasury bill. *SMB* is the return on small stocks minus the return on big stocks. *HML* is the return on high book-to-market stocks minus the return on low book-to-market stocks. *SMB* and *HML* are detailed in Fama and French (1993), pg. 9. *Momentum* is the return on high past return stocks minus the return on low past return stocks. *Momentum* is detailed in Carhart (1997), pg. 61. *alpha* measures the abnormal returns to holding any portolio. Portfolios are rebalanced in September 1990, July 1993, July 1995, and February 1998 when the Investor Responsibility Research Center (IRRC) releases new data.

CTRL2-DemocracyBCF and CTRL2-DictatorshipBCF are two entrenchment index values removed from DemocracyBCF and DictatorshipBCF portfolios. CTRL2-DemocracyBCF firms are matched to Democracy BCF firms on past 11 month momentum. CTRL2-DictatorshipBCF firms are matched to DictatorshipBCF firms on book-to-market. Panel A shows descriptive statistics of the entrenchment index for all portfolios. Panel B shows calendar time abnormal returns for the DemocracyBCF portfolio. Expected returns are obtained from the CTRL2-DemocracyBCF portfolio and are subtracted each month from DemocracyBCF portfolio returns to get abnormal returns. Time series standard errors from the monthly abnormal returns are used to test for significance. Panel C shows calendar time abnormal returns for the DictatorshipBCF portfolio. Abnormal returns are calculated and tested in a similar fashion to the DemocracyBCF portfolio. Panel D shows the adjusted calendar time alpha for the DictatorshipBCF portfolio. Every month CTRL2-DemocracyBCF portfolio returns are subtracted from DemocracyBCF portfolio returns and are regressed on a four-factor model. Panel E shows adjusted calendar time alphas for the DictatorshipBCF portfolio. Every month CTRL2-DictatorshipBCF portfolio returns are subtracted from DictatorshipBCF portfolio returns and are regressed on a four-factor model. All returns are monthly, value weighted and in excess of the return on a one month treasury bill. Standard errors are shown in parentheses and significance at the 10, 5, and 1 percent levels is indicated by *, **, and ***.

Panel A: Descriptive Statistics of the Entrenchment Index for all Portfolios (Sep. 1990 to Dec. 1999)

Portfolio	Mean	Standard Deviation	Minimum	Maximum
DemocracyBCF	0	0	0	0
CTRL2-DemocracyBCF	3.5	0.7	3	6
DictatorshipBCF	5.1	0.3	5	6
CTRL2-DictatorshipBCF	1.3	0.8	0	2

Table 11 (Continued)

Panel B: DemocracyBCF Portfolio Calendar Time Abnormal Returns (Sep. 1990 to Dec. 1999)

Monthly Portfolio Returns	Mean	Standard Deviation	Minimum	Maximum
DemocracyBCF - CTRL2-DemocracyBCF	-0.44 *(t=-0.65)* *(p=0.511)*	6.99	-28.72	28.88

Panel C: DictatorshipBCF Portfolio Calendar Time Abnormal Returns (Sep. 1990 to Dec. 1999)

Monthly Portfolio Returns	Mean	Standard Deviation	Minimum	Maximum
DictatorshipBCF - CTRL2-DictatorshipBCF	-0.11 *(t=-0.41)* *(p=0.678)*	2.82	-6.16	8.64

Panel D: DemocracyBCF Portfolio Adjusted Calendar Time Regressions (Sep. 1990 to Dec. 1999)

Monthly Portfolio Returns	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
DemocracyBCF - CTRL2-DemocracyBCF	-0.04	-0.40*	0.41*	0.13	0.12
	(0.71)	(0.20)	(0.25)	(0.29)	(0.18)

Panel E: DictatorshipBCF Portfolio Adjusted Calendar Time Regressions (Sep. 1990 to Dec. 1999)

Monthly Portfolio Returns	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
DictatorshipBCF - CTRL2-DictatorshipBCF	0.07	-0.19**	-0.10	-0.24**	0.03
	(0.29)	(0.08)	(0.10)	(0.12)	(0.07)

After controlling for momentum or book-to-market, an entrenchment index strategy does not have long run abnormal returns. Entrenchment index portfolios built by Bebchuk, Cohen, and Ferrell (2004) appear to have characteristics highly correlated with the characteristics of other portfolios that have abnormal returns. If this is the case, a trading strategy based on characteristics similar to entrenchment index portfolios should generate similar abnormal returns as measured by the four-factor model. In Table 12, returns to the control portfolios constructed in Table 10 are examined. Monthly returns to the CTRL-DictatorshipBCF portfolio are subtracted from monthly

returns to the CTRL-DemocracyBCF portfolio and regressed on the four factor model. This zero cost portfolio generates abnormal returns of 1.5 percent a month, translating into large abnormal returns of 18 on an annual basis. Characteristics other than governance correlated with abnormal returns appear to be a reason past research has detected abnormal returns for entrenchment index strategies. Portfolios with similar characteristics to entrenchment index portfolio other than governance generate similar returns.

Table 12
Return on Zero Cost Entrenchment Index Based Control Firm Portfolio Strategy.

An entrenchment index is calculated from anti-takeover amendments and charter provisions listed in publications by the Investor Responsibility Research Center (IRRC) and detailed in Bebchuk, Cohen, and Ferrell (2004). The DemocracyBCF portfolio (Entrenchment Index=0) and the DictatorshipBCF portfolio (Entrenchment Index=5or6) are regressed on the Carhart (1997) four-factor model. *RMRF* is the monthly value weighted return of the CRSP universe less the return on a one month treasury bill. *SMB* is the return on small stocks minus the return on big stocks. *HML* is the return on high book-to-market stocks minus the return on low book-to-market stocks. *SMB* and *HML* are detailed in Fama and French (1993), pg. 9. *Momentum* is the return on high past return stocks minus the return on low past return stocks. *Momentum* is detailed in Carhart (1997), pg. 61. *alpha* measures the abnormal returns to holding any portolio. Portfolios are rebalanced in September 1990, July 1993, July 1995, and February 1998 when the Investor Responsibility Research Center (IRRC) releases new data.

CTRL-DemocracyBCF firms have an entrenchment index greater than 0 and are matched to DemocracyBCF (Entrenchment Index=0) firms on past 11 month momentum in September 1990, July 1993, July 1995, and February 1998. CTRL-DictatorshipBCF firms have an entrenchment index less than 5 and are matched to DictatorshipBCF (Entrenchment Index=5or6) firms on book-to-market in September 1990, July 1993, July 1995, and February 1998. Every month CTRL-DictatorshipBCF portfolio returns are subtracted from CTRL-DemocracyBCF portfolio returns and are regressed on a four-factor model. All returns are monthly, value weighted and in excess of the return on a one month treasury bill. Standard errors are shown in parentheses and significance at the 10, 5, and 1 percent levels is indicated by *, **, and ***.

CTRL-DemocracyBCF Portfolio minus CTRL-DictatorshipBCF Portfolio Four-Factor Model Regressions (Sep. 1990 to Dec. 1999)

Monthly Portfolio Returns	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
CTRL-DemocracyBCF -	**1.50****	0.09	-0.81***	-0.99***	-0.19
CTRL-DictatorshipBCF	(0.72)	(0.21)	(0.25)	(0.29)	(0.18)

2.3.3 The Learning Hypothesis

The evidence I have presented supports model misspecification as a reason past researchers have detected abnormal returns for strategies based on governance index values. A different explanation is posed by Gompers, Ishii, and Metrick (2003). They suggest that investors did not expect the high agency costs of firms with many anti-takeover amendments. As a consequence, investors had to learn about the value destroying effects of many anti-takeover amendments. In table 13, I show subperiod results for the governance index strategy in Gompers, Ishii, and Metrick (2003). The sample is divided in half on April 30, 1995. Table 13 is taken from Table VII in Gompers, Ishii, and Metrick (2003). If investors were learning about the valuation effects of governance, long-run abnormal returns would decrease over time. Investors would respond with increasing quickness to information about corporate governance. Instead of decreasing long-run abnormal returns over time, the long-run abnormal returns to the governance strategy are larger for the second half of the 1990s.

Table 13
Subperiod Results from Gompers, Ishii, and Metrick (2003).

Firms are classified as Democracy and Dictatorship portfolios based on a governance index made of firm anti-takeover amendments and charter provisions from the Investor Responsibility Research Center (IRRC). A value of one is added to the index for each "manager friendly" charter provision a firm has. Democracies are defined as firms with 5 or fewer charter provisions. Dictatorships are defined as firms with 14 or more charter provisions. This table replicates the returns to a strategy based on a governance index calculated from anti-takeover amendments and charter provisions listed in publications by the Investor Responsibility Research Center (IRRC) and detailed in Gompers, Ishii, and Metrick (2003). The Democracy portfolio $(G \leq 5)$, the Dictatorship portfolio $(G \geq 14)$, and a hedge portfolio long in the Democracy portfolio and short in the Dictatorship portfolio are regressed on the Carhart (1997) four-factor model. Democracy and Dictatorship portfolios are in excess of the return on a one month treasury bill. *RMRF* is the monthly value weighted return of the CRSP universe less the return on a one month treasury bill. *SMB* is the return on small stocks minus the return on big stocks. *HML* is the return on high book-to-market stocks minus the return on low book-to-market stocks. *SMB* and *HML* are detailed in Fama and French (1993), pg. 9. *Momentum* is the return on high past return stocks minus the return on low past return stocks. *Momentum* is detailed in Carhart (1997), pg. 61. *alpha* measures the abnormal returns to holding any portolio. Portfolios are rebalanced in September 1990, July 1993, July 1995, and February 1998 when the Investor Responsibility Research Center (IRRC) releases new data.

Panel A shows the alpha or intercept for the first half of the sample from value weighted monthly regressions of the Democracy minus Dictatorship portfolio on the Fama-French Carhart four factor model. Panel B shows the alpha from the second half of the sample. Both panels are from Gompers, Ishii, and Metrick (2003) Table VII. Standard errors are shown in parentheses and significance at the five-percent and one-percent levels is indicated by * and ** respectively.

Panel A: First half of sample by GIM, table VII (Sept. 1990 – April 1995)

Governance Portfolio	*alpha*
GIM Democracy-Dictatorship	0.45
	(0.23)

Panel B: Second half of sample by GIM, table VII (April 1995 – Dec. 1999)

Governance Portfolio	*alpha*
GIM Democracy-Dictatorship	0.75
	(0.40)

I also investigate the raw returns of the governance strategy. In Figure 1, I show the growth of $100 invested in the governance strategy of Gompers, Ishii, and Metrick (2003). Similar to the abnormal return results, most of the strategy's profitability comes late in the sample period.

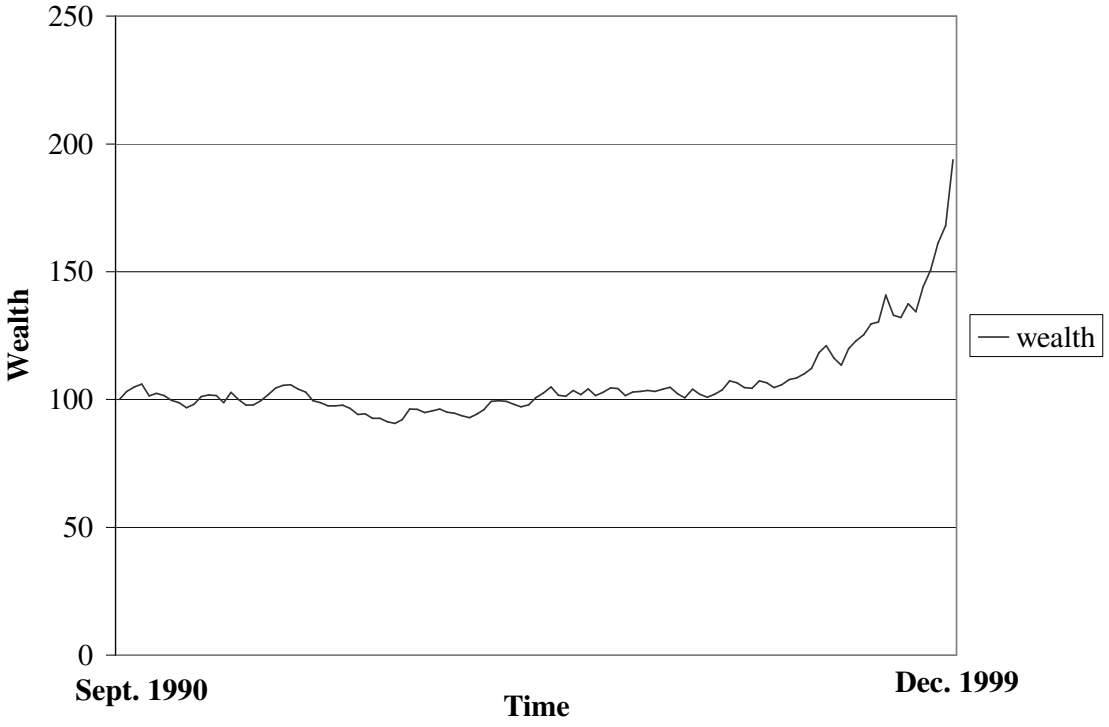

Figure 1
Growth of $100 Over Time Invested in the Governance Strategy.

Firms are classified as Democracy and Dictatorship portfolios based on a governance index made of firm anti-takeover amendments and charter provisions from the Investor Responsibility Research Center (IRRC). A value of one is added to the index for each "manager friendly" charter provision a firm has. Democracies are defined as firms with 5 or fewer charter provisions. Dictatorships are defined as firms with 14 or more charter provisions. This figure shows the growth of $100 over the period of the 1990s invested in a hedge portfolio long in the Democracy portfolio and short in the Dictatorship portfolio.

Since returns to the governance strategy are stronger in the second half of the sample period (both raw and four-factor model adjusted), investors may have taken ten years to learn about the value destroying effects of many anti-takeover provisions. Theories of investor learning may be difficult to reconcile with the abnormal returns to the governance index strategy. Brav and Heaton (2002) show that learning is with respect to *changes* in valuation-relevant parameters. Parameter uncertainty from

changes in the dividend process generates predictability in Lewellen and Shanken's (2002) model of investor learning. Theories of investor learning are silent about long term abnormal returns from learning with respect to levels like the governance index. If a pre-1990 shock to the corporate governance environment was the valuation relevant change, then learning must have taken ten years. Compared to the return momentum phenomenon (Jegadeesh and Titman 1993) that many rational learning theories were designed to explain, ten years is rather long.

2.4 Notes

1. http://finance.wharton.upenn.edu/~metrick/data.htm.

2. For more information on the construction of the HML, SMB, and Momentum factors see Fama and French (1993 page 9) and Carhart (1997 footnote on page 61).

3. http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.

4. Gompers, Ishii, and Metrick (2003) report a mean Governance Index of 9.0 for 1990, 9.3 for 1993, 9.4 for 1995 and 8.9 for 1998.

CHAPTER III

CONTEMPORANEOUS MARKET REACTIONS TO CHANGES IN GOVERNANCE LEVELS

In an efficient market, information about governance should be reflected in the value of the firm. No long-term abnormal returns to strategies based on a governance index should exist. Finding no long-term abnormal returns to governance does not mean that governance "does not matter." Governance may affect firm value, but information about governance should be impounded into security prices at the time governance information is released. To examine the effect of governance on firm value, I look at contemporaneous market reactions to changes in governance index levels.

Adding anti-takeover amendments might entrench corporate managers. If so, a large addition of anti-takeover amendments should be accompanied by an abnormal reduction in the value of the firm. Conversely, a large reduction in anti-takeover amendments should expose corporate managers to takeover market discipline and improve firm value. To measure the valuation effects of changes in the number of anti-takeover amendments, I look at stock returns over the time period contemporaneous with a change in the number of anti-takeover amendments. Panel A of Table 14 shows the number of firm changes in governance index levels over the period of 1990 to 2002. As can be seen from the table, changes in the governance index do not happen often. Because the governance index level changes infrequently for most firms, Gompers, Ishii, and Metrick (2003) do not use a panel data fixed effects approach for studying the effect of governance on firm value. When governance index level changes for a firm, it is not

drastic. Firms are adding or subtracting few anti-takeover amendments over the sample period. Some firms do add as many as ten and subtract as many as eight amendments.

I examine the large changes in anti-takeover amendments since the construction of the governance index implies that large changes should have the most impact on shareholder rights. In Panel B of Table 14, portfolios are formed by the number of increases or decreases in the governance index over the span of two consecutive Investor Responsibility Research Center publications. Portfolio returns are regressed on the four Fama-French-Carhart factors during the period contemporaneous with the change in the governance index. Panel B shows that contemporaneous unadjusted abnormal returns are always greater for moves towards "worse" governance (or for index increases).

Panel C of Table 14 shows the unadjusted abnormal returns of portfolios ranked by scaled changes in the governance index. Governance index changes are scaled since moves towards "worse" governance may be more meaningful for firms that are already more shareholder friendly. Observations between consecutive IRRC publication releases are first grouped as increases or decreases in the governance index. Changes in the governance index are ranked into quintiles within each grouping after scaling by the average governance index level between adjacent IRRC publications. The Liberate portfolio includes the quintile of firms with the greatest scaled decrease in the governance index. The Lock-Up portfolio includes the quintile of firms with the greatest scaled increase in the governance index. As with portfolios built on changes in the governance index that are not scaled, contemporaneous unadjusted abnormal returns are greater for moves towards "worse" governance as seen by Liberate and Lock-Up

portfolio alphas. The Liberate portfolio has an insignificant alpha of .02 while the Lock-Up portfolio has a statistically significant alpha of .52.

Table 14
Portfolios Formed on Large Changes in the Governance Index.

Changes in the governance index are calculated every time new IRRC data is released (July 1993, July 1995, February 1998, November 1999 (for 2000 publication) and January 2002). Panel A shows descriptive statistics for changes in the governance index from September 1990 through January 2002. Panel B shows regressions of portfolios formed by governance index changes on a four factor model. Panel B shows regressions on the factor model contemporaneous with the change in the governance index. In Panel C, changes in the governance index are scaled by the average governance index value for adjacent IRRC publications. Firms are ranked by quintiles each publication year within the sample of negative or positive scaled changes in the governance index. The Liberate portfolio includes the quintile of firms with the largest scaled decrease in the governance index. The Lock-Up portfolio includes the quintile of firms with the largest scaled increase in the governance index. *RMRF* is the monthly value weighted return of the CRSP universe less the return on a one month treasury bill. *SMB* is the return on small stocks minus the return on big stocks. *HML* is the return on high book-to-market stocks minus the return on low book-to-market stocks. *SMB* and *HML* are detailed in Fama and French (1993), pg. 9. *Momentum* is the return on high past return stocks minus the return on low past return stocks. *Momentum* is detailed in Carhart (1997), pg. 61. *alpha* measures the abnormal returns to holding any portolio. All returns are monthly, value weighted, and in excess of the return on a one month treasury bill. Standard errors are shown in parentheses and significance at the five-percent and one-percent levels is indicated by * and ** respectively.

Panel A: Changes in the governance index (Sep. 1990 to January 2002)

Change in the G Index	Frequency	Percent
-8	2	0.03
-7	4	0.06
-6	1	0.02
-5	5	0.08
-4	5	0.08
-3	16	0.26
-2	62	0.99
-1	528	8.45
0	3610	57.77
1	1435	22.96
2	386	6.18
3	116	1.86
4	35	0.56
5	26	0.42
6	7	0.11
7	7	0.11
8	2	0.03
10	2	0.03

Table 14 (Continued)

Panel B: Portfolio returns contemporaneous with changes in the governance index

Portfolio	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
Decrease G by 5 or more	0.24	0.88**	-0.05	0.30	-0.04
	(0.66)	(0.18)	(0.18)	(0.23)	(0.10)
Decrease G by less than 5	**0.10****	0.99**	-0.15**	0.03**	-0.01
Increase G by less than 5	(0.04)	(0.01)	(0.01)	(0.01)	(0.01)
Increase G by 5 or more	**1.32***	0.85**	0.60**	-0.29	0.14
	(0.59)	(0.16)	(0.16)	(0.20)	(0.09)
Decrease G by 4 or more	0.20	1.02**	-0.01	0.38	-0.02
	(0.60)	(0.17)	(0.16)	(0.21)	(0.09)
Decrease G by less than 4	**0.10***	0.98**	-0.14**	0.03*	-0.01
Increase G by less than 4	(0.04)	(0.01)	(0.01)	(0.01)	(0.01)
Increase G by 4 or more	0.98	1.22**	-0.10	-0.62**	0.20*
	(0.67)	(0.19)	(0.18)	(0.23)	(0.10)
Decrease G by 3 or more	0.48	0.97**	-0.24	0.22	-0.08
	(0.45)	(0.12)	(0.12)	(0.16)	(0.07)
Decrease G by less than 3	**0.09***	0.98**	-0.14**	0.04*	0.00
Increase G by less than 3	(0.04)	(0.01)	(0.01)	(0.02)	(0.01)
Increase G by 3 or more	0.54	1.10**	0.12	-0.36**	0.04
	(0.33)	(0.09)	(0.09)	(0.11)	(0.05)

Table 14 (Continued)

Panel C: Portfolios formed on scaled changes in the governance index

Portfolio	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
Liberate	0.02	1.04**	-0.25**	-0.21*	-0.11*
	(0.29)	(0.08)	(0.08)	(0.10)	(0.04)
-4	0.10	1.00**	-0.15	0.20	0.02
	(0.30)	(0.08)	(0.08)	(0.10)	(0.04)
-3	0.00	0.80**	0.03	0.38**	0.00
	(0.33)	(0.09)	(0.09)	(0.11)	(0.05)
-2	-0.41	1.07**	-0.17*	0.39**	0.06
	(0.25)	(0.07)	(0.07)	(0.09)	(0.04)
-1	-0.07	1.13**	-0.29**	0.53**	-0.07
	(0.32)	(0.09)	(0.09)	(0.11)	(0.05)
No Change	0.18**	0.97**	-0.17**	0.02	-0.01
	(0.06)	(0.02)	(0.02)	(0.02)	(0.01)
1	**-0.34***	0.94**	0.01	0.53**	0.05
	(0.16)	(0.05)	(0.05)	(0.06)	(0.02)
2	0.13	0.92**	-0.17**	0.13	0.02
	(0.22)	(0.06)	(0.06)	(0.08)	(0.03)
3	-0.29	1.14**	0.08	-0.03	-0.03
	(0.26)	(0.07)	(0.07)	(0.09)	(0.04)
4	0.20	1.05**	-0.04	0.20**	0.05
	(0.19)	(0.05)	(0.05)	(0.07)	(0.03)
Lock-Up	**0.52***	0.92**	-0.05	-0.20	-0.01
	(0.23)	(0.07)	(0.06)	(0.08)	(0.04)

An improvement in firm value when more anti-takeover amendments are added seems counter to an increase in the governance index being entrenching. Since the market responds positively to the addition of anti-takeover amendments, more anti-takeover amendments may enhance value by providing negotiating leverage in the bidding process, protection of corporate culture, or some other benefit. Before exploring a number of the interpretations that the evidence lends itself to, I look at alternatively defined governance indices and control firm adjusted pricing models. In Table 15, I run a similar analysis with the entrenchment index as defined in Bebchuk, Cohen, and Ferrell (2004). Panel A of Table 15 shows that the entrenchment index changes less often for firms than the governance index. Since the maximum change and value for the entrenchment index is smaller than the maximum change and value for the governance index, I form portfolios in Panel B of Table 15 based on smaller changes. Results for the entrenchment index are similar to the results for the governance index. Contemporaneous unadjusted abnormal returns are always greater for moves towards worse governance (entrenchment index increases). In Panel C, contemporaneous returns for the Lock-UpBCF portfolio are statistically significant and greater than returns for the LiberateBCF portfolio.

Table 15
Portfolios Formed on Large Changes in the Entrenchment Index.

Changes in the entrenchment index are calculated every time new IRRC data is released (July 1993, July 1995, February 1998, November 1999 (for 2000 publication) and January 2002). Panel A shows descriptive statistics for changes in the entrenchment index from September 1990 through January 2002. Panel B shows regressions of portfolios formed by entrenchment index changes on a four factor model. Panel B shows regressions on the factor model contemporaneous with the change in the entrenchment index. In Panel C, changes in the entrenchment index are scaled by the average entrenchment index value for adjacent IRRC publications. Firms are ranked by quintiles each publication year within the sample of negative or positive scaled changes in the entrenchment index. The LiberateBCF portfolio includes the quintile of firms with the largest scaled decrease in the entrenchment index. The Lock-UpBCF portfolio includes the quintile of firms with the largest scaled increase in the entrenchment index. *RMRF* is the monthly value weighted return of the CRSP universe less the return on a one month treasury bill. *SMB* is the return on small stocks minus the return on big stocks. *HML* is the return on high book-to-market stocks minus the return on low book-to-market stocks. *SMB* and *HML* are detailed in Fama and French (1993), pg. 9. *Momentum* is the return on high past return stocks minus the return on low past return stocks. *Momentum* is detailed in Carhart (1997), pg. 61. *alpha* measures the abnormal returns to holding any portolio. All returns are monthly, value weighted, and in excess of the return on a one month treasury bill. Standard errors are shown in parentheses and significance at the five and one percent levels is indicated by * and ** respectively.

Panel A: Changes in the entrenchment index (Sep. 1990 to January 2002)

Change in the Entrenchment Index	Frequency	Percent
-4	1	0.02
-3	5	0.08
-2	31	0.50
-1	353	5.64
0	4736	75.70
1	974	15.57
2	133	2.13
3	21	0.34
4	2	0.03

Table 15 (Continued)

Panel B: Portfolio returns contemporaneous with changes in the entrenchment index (Sep. 1990 to January 2002)

Portfolio	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
Decrease E by 3 or more	-0.78	1.08**	0.18	0.90*	0.12
	(0.99)	(0.28)	(0.40)	(0.41)	(0.28)
Decrease E by less than 3	**0.10****	0.99**	-0.15**	0.03*	-0.01
Increase E by less than 3	(0.04)	(0.01)	(0.01)	(0.01)	(0.01)
Increase E by 3 or more	1.18	1.05**	1.59**	-0.19	0.16
	(0.96)	(0.27)	(0.26)	(0.34)	(0.14)
Decrease E by 2 or more	-0.25	1.14**	-0.05	-0.19	-0.42**
	(0.57)	(0.16)	(0.16)	(0.20)	(0.08)
Decrease E by less than 2	**0.11****	0.99**	-0.15**	0.03*	0.00
Increase E by less than 2	(0.04)	(0.01)	(0.01)	(0.01)	(0.01)
Increase E by 2 or more	0.43	0.82**	0.18	-0.05	0.09*
	(0.30)	(0.08)	(0.08)	(0.11)	(0.05)
Decrease E by 1 or more	-0.15	1.12**	-0.04	0.13	-0.09**
	(0.20)	(0.06)	(0.06)	(0.07)	(0.03)
Decrease E by less than 1	**0.16****	0.99**	-0.16**	0.02	0.00
Increase E by less than 1	(0.05)	(0.01)	(0.01)	(0.02)	(0.01)
Increase E by 1 or more	-0.02	0.96**	-0.09*	0.02	-0.02
	(0.13)	(0.04)	(0.03)	(0.04)	(0.02)

Table 15 (Continued)

Panel C: Portfolios formed on scaled changes in the entrenchment index (Sep. 1990 to January 2002)

Portfolio	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
LiberateBCF	0.38	1.13**	-0.09	-0.15	-0.14**
	(0.34)	(0.09)	(0.09)	(0.12)	(0.05)
-4	-0.18	1.09**	0.05	0.37**	-0.01
	(0.36)	(0.10)	(0.10)	(0.12)	(0.05)
-3	-0.24	0.99**	-0.14	0.55**	-0.05
	(0.34)	(0.09)	(0.09)	(0.12)	(0.05)
-2	-0.55	0.90**	0.34**	0.05	0.07
	(0.29)	(0.08)	(0.10)	(0.12)	(0.08)
-1	-0.43	1.30**	-0.16	0.79**	-0.05
	(0.47)	(0.13)	(0.13)	(0.16)	(0.07)
No Change	**0.16****	0.99**	-0.16**	0.02	0.00
	(0.05)	(0.01)	(0.01)	(0.02)	(0.01)
1	**-0.77***	1.23**	0.08	0.73**	0.04
	(0.36)	(0.10)	(0.10)	(0.13)	(0.05)
2	-0.10	0.89**	-0.04	0.50**	0.06
	(0.23)	(0.06)	(0.06)	(0.08)	(0.03)
3	-0.29	1.01**	-0.15	-0.17	-0.08
	(0.28)	(0.08)	(0.08)	(0.10)	(0.04)
4	**-0.42***	1.09**	0.02	0.36**	0.02
	(0.20)	(0.06)	(0.07)	(0.08)	(0.05)
Lock-UpBCF	**0.54***	0.94**	-0.12	-0.12	-0.04
	(0.26)	(0.07)	(0.07)	(0.09)	(0.04)

So far, moves towards worse governance are accompanied by abnormal increases in firm value. Next, I examine whether model misspecification may affect the results for returns contemporaneous with changes in the value of governance indices. I form control firm portfolios based on size, book-to-market, and momentum for governance index change portfolios. These matching characteristics are the same dimensions used for matching to governance index level portfolios when looking at long-term abnormal returns. I examine the returns to portfolios with an increase or decrease of five or more governance index values between releases by the IRRC. For the portfolio with a governance index increase of five or more, I select matching control firms out of the sample that has a governance index increase of less than five. Likewise, for the portfolio with a governance index decrease of five or more, I select matching control firms out of the sample that has a decrease of less than five. In Panel A and B of Table 16, control firm adjusted portfolios formed on governance index decreases of five or more have greater contemporaneous returns than unadjusted portfolios. More noticeably, Panels C and D of Table 16 show significantly negative contemporaneous returns for control firm adjusted portfolios formed on governance index increases of five or more. This suggests that the addition of anti-takeover amendments entrenches corporate managers and that investors recognize the resulting value destruction. The control firm adjusted Liberate portfolio also has contemporaneous returns that are much greater than the unadjusted Liberate portfolio. Contemporaneous abnormal returns from the control firm adjusted Lock-Up portfolio are negative but insignificant.

Table 16
Control Firm Adjusted Portfolios Formed on Large Changes in the Governance Index.

Changes in the governance index are calculated every time new IRRC data is released (July 1993, July 1995, February 1998, November 1999 (for 2000 publication) and January 2002). All control firm portfolios are formed at the beginning of the release of IRRC data (September 1990, July 1993, July 1995, February 1998, and November 1999). Panel A shows the control firm adjusted intertemporal average of returns to the DecreaseG5+ portfolio. Panel B shows control firm adjusted calendar time regressions for the DecreaseG5+ portfolio. The DecreaseG5+ portfolio includes firms whose governance index decreases by 5 or more between releases of data by the IRRC. To form the CTRL-DecreaseG5+ portfolio, firms whose governance index does not decrease by five or more are matched to DecreaseG5+ firms on size, book-to-market, and momentum. CTRL-DecreaseG5+ firms within 60% to 140% of a DecreaseG5+ firm's book-to-market and all CTRL- DecreaseG5+ firms within 90% to 110% of a DecreaseG5+ firm's momentum are kept. Finally, control firms with the closest size are kept. Panel C shows the control firm adjusted intertemporal average of returns to the IncreaseG5+ portfolio. Panel D shows control firm adjusted calendar time regressions for the IncreaseG5+ portfolio. The IncreaseG5+ portfolio includes firms whose governance index increases by 5 or more between releases of data by the IRRC. A CTRL-IncreaseG5+ portfolio is formed in a similar fashion to the CTRL-DecreaseG5+ portfolio.

Panel E shows the control firm adjusted intertemporal average of returns to the Liberate portfolio. Panel F shows control firm adjusted calendar time regressions for the Liberate portfolio. Firms are ranked by quintiles each publication year within the sample of negative or positive changes in the governance index. The Liberate portfolio includes the quintile of firms with the largest scaled decrease in the governance index. To form the CTRL-Liberate portfolio, firms that are not in the quintile of firms with the largest scaled decrease in the governance index are matched to Liberate firms on size, book-to-market, and momentum. CTRL-Liberate firms within 60% to 140% of a Liberate firm's book-to-market and all CTRL-Liberate firms within 90% to 110% of a Liberate firm's momentum are kept. Finally, control firms with the closest size are kept. Panel G shows the control firm adjusted intertemporal average of returns to the Lock-Up portfolio. Panel H shows control firm adjusted calendar time regressions for the Lock-Up portfolio. The Lock-Up portfolio includes the quintile of firms with the largest scaled increase in the governance index. The CTRL-Lock-Up portfolio is formed in a fashion similar to the CTRL-Liberate portfolio. *RMRF* is the monthly value weighted return of the CRSP universe less the return on a one month treasury bill. *SMB* is the return on small stocks minus the return on big stocks. *HML* is the return on high book-to-market stocks minus the return on low book-to-market stocks. *SMB* and *HML* are detailed in Fama and French (1993), pg. 9. *Momentum* is the return on high past return stocks minus the return on low past return stocks. *Momentum* is detailed in Carhart (1997), pg. 61. *alpha* measures the abnormal returns to holding any portolio. All returns are monthly, value weighted, and in excess of the return on a one month treasury bill. Standard errors are shown in parentheses and significance at the five-percent and one-percent levels is indicated by * and ** respectively.

Table 16 (Continued)

Panel A: Adjusted Intertemporal Average of Decreases in G Index by 5 or More Portfolio (Sep. 1990 to January 2002)

Portfolio	Mean	Standard Deviation	Minimum	Maximum
DecreaseG5+ - CTRL-DecreaseG5+	0.81	7.72	-19.09	21.73
	(t=1.12)			
	(p=0.267)			

Panel B: Adjusted Regressions of Decreases in G Index by 5 or More Portfolio (Sep. 1990 to January 2002)

Portfolio	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
DecreaseG5+ - CTRL-DecreaseG5+	0.75	0.03	0.04	-0.55	0.00
	(0.80)	(0.23)	(0.28)	(0.32)	(0.20)

Panel C: Adjusted Intertemporal Average of Increases in G Index by 5 or More Portfolio (Sep. 1990 to January 2002)

Portfolio	Mean	Standard Deviation	Minimum	Maximum
IncreaseG5+ - CTRL-IncreaseG5+	-1.36	5.08	-20.08	8.44
	(t=-2.84)			
	(p=0.005)			

Panel D: Adjusted Regressions of Increases in G Index by 5 or More Portfolio (Sep. 1990 to January 2002)

Portfolio	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
IncreaseG5+ - CTRL-IncreaseG5+	**-1.27***	-0.16	0.16	0.32	0.14
	0.52	0.15	0.18	0.21	0.13

Table 16 (Continued)

Panel E: Adjusted Intertemporal Average of G Index Liberate Portfolio (Sep. 1990 to January 2002)

Portfolio	Mean	Standard Deviation	Minimum	Maximum
Liberate - CTRL-Liberate	0.43 *(t=1.27)* (p=0.207)	3.62	-7.39	13.68

Panel F: Adjusted Regressions of G Index Liberate Portfolio (Sep. 1990 to January 2002)

Portfolio	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
Liberate - CTRL-Liberate	0.59	-0.05	-0.41**	-0.16	-0.13
	(0.37)	(0.10)	(0.13)	(0.15)	(0.09)

Panel G: Adjusted Intertemporal Average of G Index Lock-Up Portfolio (Sep. 1990 to January 2002)

Portfolio	Mean	Standard Deviation	Minimum	Maximum
LockUp - CTRL-LockUp	-0.21 *(t=-0.82)* *(p=0.411)*	2.67	-9.25	9.41

Panel H: Adjusted Regressions of G Index Lock-Up Portfolio (Sep. 1990 to January 2002)

Portfolio	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
LockUp - CTRL-LockUp	-0.11	-0.10	0.06	0.23*	0.05
	(0.27)	(0.08)	(0.09)	(0.11)	(0.07)

Since magnitudes and signs of contemporaneous abnormal returns change after control firm adjustment, model misspecification may be an important consideration in examining contemporaneous abnormal returns. In Table 17, portfolios formed on changes in the entrenchment index used in Bebchuk, Cohen, and Ferrell (2004) are adjusted with control firm portfolios. I examine the returns to portfolios with an increase or decrease of three or more entrenchment index values between releases by the IRRC. For the portfolio with an entrenchment index increase of three or more, I select control

firms that have an entrenchment index increase of less than three and that have similar book-to-market ratios before the change in the index. Likewise, for the portfolio with an entrenchment index decrease of three or more, I select control firms that have an index decrease of less than three and that have similar momentum before the change in the index. Control firm portfolios for entrenchment index change portfolios are formed along the same dimensions as for the entrenchment index level portfolios used in measuring long-term abnormal returns. Momentum is used to find control firms for DemocracyBCF firms and for firms that move to better governance. Book-to-market is used to find control firms for DictatorshipBCF firms and for firms that move to worse governance. In Panels A and B of Table 17, control firm adjusted portfolios formed on entrenchment index decreases of three or more have negative contemporaneous abnormal returns. In Panels C and D of Table 17, control firm adjusted portfolios formed on entrenchment index decreases of three or more have positive contemporaneous abnormal returns. Control firm adjusted portfolios formed on changes in the entrenchment index have contemporaneous abnormal returns similar to unadjusted portfolios formed on changes in the entrenchment index. A valuation increase for moves towards worse governance for both adjusted and unadjusted portfolios is perplexing. In Panels E and F of Table 17, control firm adjusted LiberateBCF portfolios have negative contemporaneous abnormal returns. Comparatively, control firm adjusted Lock-UpBCF portfolios have negative abnormal returns that are larger in magnitude. The adjusted regression intercept of the Lock-UpBCF portfolio is negative and significant. The more negative and significant contemporaneous abnormal returns for the control firm adjusted

Lock-UpBCF portfolio suggest that moves towards worse governance destroy value. However, the negative sign for the adjusted LiberateBCF portfolio is puzzling.

Table 17
Control Firm Adjusted Portfolios Formed on Large Changes in the Entrenchment Index.

Changes in the entrenchment index are calculated every time new IRRC data is released (July 1993, July 1995, February 1998, November 1999 (for 2000 publication) and January 2002). All control firm portfolios are formed at the beginning of the release of IRRC data (September 1990, July 1993, July 1995, February 1998, and November 1999). Panel A shows the control firm adjusted intertemporal average of returns to the DecreaseE3+ portfolio. Panel B shows control firm adjusted calendar time regressions for the DecreaseE3+ portfolio. The DecreaseE3+ portfolio includes firms whose entrenchment index decreases by 3 or more between releases of data by the IRRC. To form the CTRL-DecreaseE3+ portfolio, firms whose entrenchment index does not decrease by three or more are matched to DecreaseE3+ firms on momentum. Panel C shows the control firm adjusted intertemporal average of returns to the IncreaseE3+ portfolio. Panel D shows control firm adjusted calendar time regressions for the IncreaseE3+ portfolio. The IncreaseE3+ portfolio includes firms whose entrenchment index increases by 3 or more between releases of data by the IRRC. To form the CTRL- IncreaseE3+ portfolio, firms whose entrenchment index does not increase by three or more are matched to IncreaseE3+ firms on book-to-market.

Panel E shows the control firm adjusted intertemporal average of returns to the LiberateBCF portfolio. Panel F shows control firm adjusted calendar time regressions for the LiberateBCF portfolio. Firms are ranked by quintiles each IRRC publication year within the sample of negative or positive scaled changes in the entrenchment index. Changes in the entrenchment index are scaled by the average entrenchment index value between two consecutive IRRC publication releases. The LiberateBCF portfolio is the quintile of firms with the largest scaled decrease in the entrenchment index. To form the CTRL-LiberateBCF portfolio firms not in the quintile of firms with the largest scaled decrease in the entrenchment index are matched to LiberateBCF firms on momentum. Panel G shows the control firm adjusted intertemporal average of returns to the Lock-UpBCF portfolio. Panel H shows control firm adjusted calendar time regressions for the Lock-UpBCF portfolio. The Lock-UpBCF portfolio is the quintile of firms with the largest scaled increase in the entrenchment index. To form the CTRL-Lock-UpBCF portfolio firms not in the quintile of firms with the largest scaled increase in the entrenchment index are matched to Lock-UpBCF firms on book-to-market. *RMRF* is the monthly value weighted return of the CRSP universe less the return on a one month treasury bill. *SMB* is the return on small stocks minus the return on big stocks. *HML* is the return on high book-to-market stocks minus the return on low book-to-market stocks. *SMB* and *HML* are detailed in Fama and French (1993), pg. 9. *Momentum* is the return on high past return stocks minus the return on low past return stocks. *Momentum* is detailed in Carhart (1997), pg. 61. *alpha* measures the abnormal returns to holding any portolio. All returns are monthly, value weighted, and in excess of the return on a one month treasury bill. Standard errors are shown in parentheses and significance at the five-percent and one-percent levels is indicated by * and ** respectively.

Table 17 (Continued)

Panel A: Adjusted Intertemporal Average of Decreases in Entrenchment Index by 3 or More Portfolio (Sep. 1990 to January 2002)

Portfolio	Mean	Standard Deviation	Minimum	Maximum
DecreaseE3+ - CTRL-DecreaseE3+	-0.32 *(t=-0.23)* *(p=0.809)*	9.66	-29.72	25.43

Panel B: Adjusted Regressions of Decreases in Entrenchment Index by 3 or More Portfolio (Sep. 1990 to January 2002)

Portfolio	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
DecreaseE3+ - CTRL-DecreaseE3+	-1.14	0.57	-0.76	0.83	0.07
	(1.36)	(0.36)	(0.53)	(0.52)	(0.36)

Panel C: Adjusted Intertemporal Average of Increases in Entrenchment Index by 3 or More Portfolio (Sep. 1990 to January 2002)

Portfolio	Mean	Standard Deviation	Minimum	Maximum
IncreaseE3+ - CTRL-IncreaseE3+	0.23 *(t=0.32)* *(p=0.747)*	7.50	-21.97	40.64

Panel D: Adjusted Regressions of Increases in Entrenchment Index by 3 or More Portfolio (Sep. 1990 to January 2002)

Portfolio	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
IncreaseE3+ - CTRL-IncreaseE3+	0.80	-0.18	-0.34	0.08	-0.39*
	(0.77)	(0.22)	(0.27)	(0.31)	(0.20)

Panel E: Adjusted Intertemporal Average of Entrenchment Index Liberate Portfolio (Sep. 1990 to January 2002)

Portfolio	Mean	Standard Deviation	Minimum	Maximum
LiberateBCF - CTRL-LiberateBCF	-0.12 *(t=-0.16)* *(p=0.868)*	7.61	-29.72	25.43

Table 17 (continued)

Panel F: Adjusted Regressions of Entrenchment Index Liberate Portfolio (Sep. 1990 to January 2002)

Portfolio	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
LiberateBCF - CTRL-LiberateBCF	-0.50	0.18	-0.15	0.02	0.17
	(0.80)	(0.23)	(0.28)	(0.32)	(0.20)

Panel G: Adjusted Intertemporal Average of Entrenchment Index Lock-Up Portfolio (Sep. 1990 to January 2002)

Portfolio	Mean	Standard Deviation	Minimum	Maximum
LockUpBCF - CTRL-LockUpBCF	-0.72	3.33	-17.40	7.26
	(t=-2.28)			
	(p=0.024)			

Panel H: Adjusted Regressions of G Index Lock-Up Portfolio (Sep. 1990 to January 2002)

Portfolio	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
LockUpBCF - CTRL-LockUpBCF	-**0.69***	0.06	0.10	0.28*	-0.09
	(0.34)	(0.10)	(0.12)	(0.14)	(0.09)

Since few firms have entrenchment index changes of three or more, inferences from portfolios formed on changes of three or more may be problematic. To mitigate the problem of few firms, I explore control firm adjusted returns to portfolios formed on entrenchment index changes of two or more. In Table 18, control firm adjusted portfolios formed on index decreases still have negative contemporaneous abnormal returns. The returns for the portfolios formed on entrenchment index decreases are less negative than portfolios formed on index decreases. The more negative contemporaneous abnormal returns for moves towards worse governance are consistent with value destroying effects for entrenching corporate managers.

Table 18
Control Firm Adjusted Portfolios for Changes of Two or More in the Entrenchment Index.

Changes in the entrenchment index are calculated every time new IRRC data is released (July 1993, July 1995, February 1998, November 1999 (for 2000 publication) and January 2002). All control firm portfolios are formed at the beginning of the release of IRRC data (September 1990, July 1993, July 1995, February 1998, and November 1999). Panel A shows the control firm adjusted intertemporal average of returns to the DecreaseE2+ portfolio. Panel B shows control firm adjusted calendar time regressions for the DecreaseE2+ portfolio. The DecreaseE2+ portfolio includes firms whose entrenchment index decreases by 2 or more between releases of data by the IRRC. To form the CTRL-DecreaseE2+ portfolio, firms whose entrenchment index does not decrease by two or more are matched to DecreaseE2+ firms on momentum. Panel C shows the control firm adjusted intertemporal average of returns to the IncreaseE2+ portfolio. Panel D shows control firm adjusted calendar time regressions for the IncreaseE2+ portfolio. The IncreaseE2+ portfolio includes firms whose entrenchment index increases by 2 or more between releases of data by the IRRC. To form the CTRL- IncreaseE2+ portfolio, firms whose entrenchment index does not increase by two or more are matched to IncreaseE2+ firms on book-to-market. *RMRF* is the monthly value weighted return of the CRSP universe less the return on a one month treasury bill. *SMB* is the return on small stocks minus the return on big stocks. *HML* is the return on high book-to-market stocks minus the return on low book-to-market stocks. *SMB* and *HML* are detailed in Fama and French (1993), pg. 9. *Momentum* is the return on high past return stocks minus the return on low past return stocks. *Momentum* is detailed in Carhart (1997), pg. 61. *alpha* measures the abnormal returns to holding any portolio. All returns are monthly, value weighted, and in excess of the return on a one month treasury bill. Standard errors are shown in parentheses and significance at the five-percent and one-percent levels is indicated by * and ** respectively.

Panel A: Adjusted Intertemporal Average of Decreases in Entrenchment Index by 2 or More Portfolio (Sep. 1990 to January 2002)

Portfolio	Mean	Standard Deviation	Minimum	Maximum
DecreaseE2+ - CTRL-DecreaseE2+	-0.05 *(t=-0.06)* *(p=0.941)*	7.75	-29.72	25.43

Panel B: Adjusted Regressions of Decreases in Entrenchment Index by 2 or More Portfolio (Sep. 1990 to January 2002)

Portfolio	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
DecreaseE2+ - CTRL-DecreaseE2+	-0.40	0.13	-0.08	0.09	0.20
	(0.81)	(0.23)	(0.28)	(0.33)	(0.21)

Table 18 (Continued)

Panel C: Adjusted Intertemporal Average of Increases in Entrenchment Index by 2 or More Portfolio (Sep. 1990 to January 2002)

Portfolio	Mean	Standard Deviation	Minimum	Maximum
IncreaseE2+ - CTRL-IncreaseE2+	-0.66 *(t=-1.76)* *(p=0.080)*	3.96	-23.89	7.80

Panel D: Adjusted Regressions of Increases in Entrenchment Index by 2 or More Portfolio (Sep. 1990 to January 2002)

Portfolio	*alpha*	*RMRF*	*SMB*	*HML*	*Momentum*
IncreaseE2+ - CTRL-IncreaseE2+	-0.58	0.07	-0.21	0.12	-0.18
	(0.41)	(0.12)	(0.14)	(0.16)	(0.10)

From looking at abnormal returns contemporaneous with changes in governance indices, the use of control firm portfolios seems important for inferences. Looking at unadjusted portfolios, contemporaneous abnormal returns are always positive and greater for moves towards worse governance. This counterintuitive result might suggest that the addition of anti-takeover amendments has significant benefits. The benefits of adding anti-takeover amendments could be greater than any costs. After correcting for possible model misspecification using control firm portfolios, contemporaneous abnormal returns are seldom positive and usually smaller for moves towards worse governance. Occasionally, moves towards worse governance are accompanied by significantly negative contemporaneous abnormal returns. Hence, the methodology used is powerful enough to pick up value destroying effects of entrenchment. However, moving towards better governance sometimes results in negative contemporaneous abnormal returns for control firm adjusted portfolios. This prevents strong conclusions

about the causality of any correlation between adding anti-takeover amendments and value destruction. A modest conclusion from the control firm adjusted results would be that poor governance destroys firm value but most firms choose a governance structure well fit to their agency cost environment. Firms that subtracted anti-takeover amendments sometimes have negative contemporaneous abnormal returns even after control firm adjustment. Anti-takeover amendments may not be without their benefits, and a uniform prescription of governance for all firms may not be appropriate. This conclusion might be seen as weak to those with strong priors in support of the ability of governance to improve firm value. The tests I have shown may be critiqued on the basis of power, matching precision, and construction of the governance index. However, a lack of strong results for the causal relation of governance and firm value is consistent with the extant literature. In particular, the contemporaneous pricing evidence is consistent with much of the short-term event study evidence for anti-takeover amendment additions and deletions (see Coates 2000).

CHAPTER IV

CONCLUSION AND IMPLICATIONS

4.1 Implications for the Efficient Markets Hypothesis

Extant literature beginning with Gompers, Ishii, and Metrick (2003) finds that a trading strategy long in firms with "good governance" and short in firms with "poor governance" earns long-run abnormal stock returns. This result has received much attention from the media and academics. However, long-run abnormal returns for a strategy based on publicly available information about corporate governance are inconsistent with semi-strong form efficient markets. Anomalous returns to the governance based strategy are attributed to unexpected agency costs (Gompers, Ishii, and Metrick 2003) and risk (Cremers and Nair 2004) among other explanations. It must be noted that long-run event studies are affected by the joint hypothesis problem. Whenever market efficiency is rejected, the ability of an asset pricing model to explain returns may also be called into question (Fama 1998). A reasonable change in methodology that amounts to a correction of the asset pricing model may mitigate the joint hypothesis. Mitchell and Stafford (2000) propose the use of control firm portfolios as such a solution.

The implications of my findings are limited by the research objective I have chosen. I set out to explore whether past research did not fully account for potential model misspecification. Are the long-term abnormal returns to a governance strategy related to characteristics besides governance that explain the cross-section of stock returns? I present and discuss results that show portfolios with similar characteristics

besides governance have similar returns. I do not claim that any of the matching procedures I have shown are the true model for expected returns. Finding the true model of expected returns is outside the scope of this paper and remains a question for future research. Extant literature gives less than perfect guidance towards a true model of expected returns. Extant literature also guides less than perfectly in finding matching firms for control firm portfolios. Propensity score matching is promising in providing a good matching method and another way to measure abnormal returns; however, the propensity score method does not suggest exactly what variables should be used to calculate propensity scores in a logit regression. A stochastic dominance criterion provides an entirely different perspective on understanding long-term stock returns.

Instead of coming up with a model of expected returns, I use control firm portfolios. The control firm portfolio methodology is not a perfect substitute for the true model of expected returns. Control firm portfolios have characteristics other than governance highly correlated with the characteristics of governance portfolios. The characteristics highly correlated between the two portfolios are characteristics that help explain the cross section of returns. Returns related to these characteristics should be captured by the factor model used to measure expected returns. However, model misspecification makes factor model results less reliable. If governance generates abnormal returns, I would expect the following: Returns to governance portfolios should be different from the returns of <u>any</u> portfolio with similar characteristics besides governance – especially with characteristics known to be related to the cross-section of stock returns. I have demonstrated that this is not the case with portfolios that have

similar characteristics known to be related to returns. For some, this may be a hurdle that is too high. However, any criterion for abnormal returns less demanding may present an obstacle in coming to a better understanding of the return generating process. What generates returns?

It is possible for a researcher to explore the governance anomaly with a method like propensity score matching and find abnormal returns to a governance strategy.[1] According to propensity score theory, this would suggest that firms earned abnormal returns if they chose better governance. This would raise a number of questions. Which methodology accurately measures abnormal returns? If the propensity score methodology correctly measures abnormal returns, why did the methodology I use generate returns similar to governance firms? Some of my matches were done on only one dimension. Does the propensity score methodology emphasize many dimensions when only a few dimensions or one dimension may be important?

After using control firm portfolios matched to governance portfolios on characteristics known to explain the cross-section of stock returns, I find no abnormal returns to a governance based strategy. Asset pricing models appear to underestimate the returns to firms with good governance and overestimate the returns to firms with poor governance. Firms with good governance have characteristics in common with firms that did well in the 1990s and firms with bad governance have characteristics in common with firms that did poorly in the 1990s. This result suggests that information about corporate governance is impounded quickly into equity prices. The quick reflection of public information in security prices is consistent with semi-strong efficient

markets. The result is a drop in a large bucket of research testing the efficient markets hypothesis. Finding that model correction offers a result consistent with the efficient markets hypothesis is consistent with a growing literature on long-run event study methodology. The long-run event study methodology literature continues to offer new and perhaps better ways of mitigating the joint hypothesis problem.

Researchers and practitioners often have strong priors regarding market efficiency. Absent any theories relating governance to systematic risks, the efficient markets hypothesis offers the best a priori explanation of the relation between governance and long-term stock returns. Information believed to impact the amount of cash flows to shareholders should be quickly impounded into stock prices. This clear prediction of the efficient markets hypothesis is one reason why the extant literature on governance and long-run abnormal stock returns is puzzling and interesting. The finding of no long-run abnormal returns to a governance strategy in this study is across a number of matching procedures and governance indices. Since the result is consistent with the efficient markets hypothesis, it is expected and not puzzling. However, questions still remain. Why do firms with poor governance have characteristics besides governance in common with firms that did well in the 1990s? Why do firms with poor governance have characteristics in common with firms that did poorly in the 1990s? The governance anomaly deserves more attention before it can be considered a closed case.

4.2 Implications for Various Governance Views

A central result of this research is detecting no long-term abnormal returns to trading strategies based on governance. Firms with better governance have other

characteristics in common with firms that did well in the 1990s. This result is consistent with the efficient markets hypothesis. If this were not the case, it would be difficult to make any inferences about the effect of governance on firm value. Firm values would not accurately reflect information about corporate governance if governance were not correctly priced.

Much of the extant literature on the effect of corporate governance on firm value assumes that public information about corporate governance is fully reflected in market prices. Suggesting this might not be the case by finding long-run abnormal returns to a strategy based on governance would call into question the accuracy of past studies. On the contrary, finding markets are efficient with respect to information about corporate governance supports the inferences of prior governance research. Research examining the relation between firm value and governance through event studies, Tobin's Q, and operating performance can be relied upon.

A second result in this paper is that moves towards worse governance are usually accompanied by contemporaneous negative abnormal returns after control firm adjustment. Sometimes, the contemporaneous market reaction is significantly negative. Occasionally, moves towards better governance are accompanied by contemporaneous negative abnormal returns after control firm adjustment. This evidence supports the view that governance affects firm value. Moves towards worse governance seem to effectively destroy firm value, while moves towards better governance have an unclear effect. The asymmetry of the relationship between governance and firm value lends itself to a cautious interpretation of the causal nature of governance. Anti-takeover

amendments may have large costs, but they are not without benefits as well. Simply removing anti-takeover amendments does not boost firm value to statistically noticeable levels and appears to have value destroying affects (though not statistically significant) in some instances. Thus, the costs and benefits nuance of the effect of governance on firm value receives support. The difficulty in detecting an empirical relationship between governance and firm value robust in statistical significance and sign lends itself to the nuance that most firms have optimal governance structures. The lack of statistical significance and similar signs across all governance changes in a single direction prevents an interpretation suggesting that a single optimal governance structure exists for all firms. Somewhere in between the costs and benefits nuance and the optimality nuance would best describe the place along the continuum of governance views where the evidence lands. Moves towards worse governance are almost always accompanied by negative abnormal returns, making it difficult to support the view that governance does not affect firm value. The contemporaneous abnormal returns with moves towards worse governance range from 9.6 to a negative16.32 percent on an annual basis, making it difficult to asses the impact of governance. Excluding the positive contemporaneous abnormal returns for moves towards worse governance, an average annual contemporaneous abnormal return of negative 8.4 percent seems non-trivial. A methodology similar to Larcker, Richardson, and Tuna (2004) may be more appropriate for assessing the relative importance of the effect of governance.

4.3 Implications for Researchers in General

Throughout this study control firm methodology was used. Control firms were used initially to mitigate the joint hypothesis problem in long run studies. After using control firms, no long-run abnormal returns were found for trading strategies based on governance. Control firms were also used for examining contemporaneous market reactions to changes in governance. Since the asset pricing model could not explain returns to portfolios it was designed for (Fama and French 1996), inferences from a misspecified model are not without difficulty. After using control firms, test results were no longer strongly consistent with the perplexing idea that entrenchment improves firm value. Instead, moves towards worse governance showed evidence of value destruction.

In both long run event study tests and contemporaneous market reaction tests, the results were different after using control firms. At a minimum, researchers should consider evidence from research that employs a control sample in addition to any evidence without a control sample. For researchers using long-run event studies to test market efficiency, this has particular importance since the joint hypothesis is a known problem. Researchers should be quite confident in the robustness of an asset pricing model's explanatory power in random samples before rejecting market efficiency. A possible way to "add confidence" to a model is to find control firms based on model parameters.

Another implication of this research is that governance has minimal importance in explaining the cross-section of returns since governance strategies do not generate

abnormal returns after controlling for size, book-to-market, and momentum. Instead, characteristics found to explain the cross-section of returns in past research are still important in understanding long-run stock returns (Fama and French 1992 and Jegadeesh and Titman 1993). This is notable in a sample period when the premiums for size and book-to-market have diminished (see Schwert 2002 and Malkiel 2003). Two directions may be appropriate for researchers. First, a better understanding of size, book-to-market, and momentum is needed since these characteristics are important in explaining the return cross-section. Berk (1995) suggests that if book-to-market and size are still important in explaining returns, model specification has a long way to go. The second direction for researchers may be to develop asset pricing models that are better specified.

4.4 Implications for Practitioners

After using control firm portfolios, no long-run abnormal returns are found for strategies based on governance. This implies that investors seeking optimal asset allocation should be indifferent between portfolios of differing governance quality. Portfolios of differing governance quality earn their required rates of return or cost of equity capital. Recommending indifference to corporate governance in the asset allocation process may run counter to the recent growth in corporate governance indices and other governance related services targeted to investors. However, indifference to corporate governance is consistent with the efficient markets hypothesis. Investors would be better off allocating assets according to characteristics with independent explanatory power for the cross-section of stock returns. Portfolios with similar characteristics other than governance earn similar returns.

Finding no long-run abnormal returns to a governance strategy also has implications for corporate managers. Managers will not be able to fool the market by trying to implement "complex" governance structures. The market understands the agency costs associated with poor governance. Since the market understands the consequences of a particular governance structure, managers will not be able to delay the adverse effects of a change towards worse governance.

Governance appears to affect firm value, but the result is not statistically robust. If governance strongly affected firm value, a large investor or corporate manager might hope to improve firm value by tinkering with governance. The mixed effects on valuation for moves towards better governance imply that getting better governance by decreasing anti-takeover amendments is not without its costs. In addition to the costs inherent in a particular governance structure, there may be costs of implementing a particular governance structure. Although adding and subtracting anti-takeover amendments seem to be relatively costless procedures, the costs of implementing new governance structures should be understood in addition to the costs of having a particular governance structure.

4.5 Implications for Policy Makers

Finding no long run abnormal returns to a governance strategy is consistent with the efficient market hypothesis. The efficient markets hypothesis suggests that security prices are informative for understanding the effects of governance. Since market prices are informative, policy makers can rely on market data in addition to other information in forming policy. If market prices were not informative, policy decisions might rely on

the idiosyncratic assessments of a few individuals. Useful market information allows policy makers to rely on more systematic evidence in policy making.

Investors appear to understand the impact of governance on firm value. Public information about governance is quickly impounded into security prices. Since investors understand the impact of corporate governance on firm value, should corporate governance standards be mandated by law? If poor corporate governance structures had adverse consequences investors were unaware of, it might be reasonable to call for legislatively mandated corporate governance structures. Since investors are able to and do quickly "walk away" from a corporation moving towards worse governance, investors do not need legal protection from a non-existent unforeseen danger.

If the contemporaneous market reactions to moves towards worse governance are interpreted strongly as value destroying, limiting the ability of corporations to add anti-takeover amendments would make shareholders better off. However, a lack of statistical robustness in the results prevents such a strong interpretation. It is more likely that particular governance structures have costs and benefits, and corporations may even tend toward optimal governance structures. A more modest interpretation of the evidence implies that policy makers should be more laissez faire with respect to corporate governance.

4.6 Summary

The general findings and implications of this research are not new. As new long-run event study methodology has been developed, many researchers have found previous anomalies not be anomalies at all. Instead, a reasonable change in methodology often

provides an explanation consistent with efficient markets. Despite the development of new methodologies, researchers are still left without the most important item in understand returns – a model of true expected returns. Questions regarding the return generating process will likely remain a fruitful area for future research. Mixed results with respect to the effect of governance on firm value may be said to describe the governance literature as a whole. As a result, researchers have concluded that governance structures are often chosen in accordance with an agency cost environment. What is left for future research is exactly how governance is chosen to match a specific agency cost environment. Despite consistency with extant literature, these results and their interpretation will be controversial in a discipline where many hold strong priors about market efficiency and the impact of corporate governance. The evidence presented is a small portion of the research on market efficiency and corporate governance. Conclusions about market efficiency and the impact of corporate governance on firm value should come from a broad examination of the financial economics literature.

4.7 Notes

1. I would conjecture that abnormal returns using the propensity score methodology would be highly unlikely but not impossible. Since I have shown that firms with similar characteristics to governance firms have similar returns, I would expect the propensity score method to identify similar firms. The propensity score method is also a matching method looking for common characteristics between test firms and control firms.

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