Governance and Stock Returns

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Abstract

Recent empirical research has found that trading strategies from sorts on governance index values generate long-term abnormal returns, but these results have no clear interpretation and provide a challenge to future research. I find that there are no long-term abnormal returns to sorts on a governance index when control firm portfolios are used to correct for misspecification in the asset pricing model. The results are robust to a number of expected return benchmarks. This is consistent with efficient capital markets.

RECENT EMPIRICAL WORK DOCUMENTS a relationship between governance index values and long-term abnormal stock returns (Gompers, Ishii, and Metrick 2003, and Cremers and Nair forthcoming). In particular, firms with extremely low governance index values, based on a count of firm anti-takeover amendments and charter provisions, have higher stock returns than firms with extremely high governance index values. A strategy that buys firms with an extremely low governance index value and sells firms with an extremely high governance index value generates abnormal returns of 8.5% to 15% on an annual basis. If capital markets are efficient, however, any relationship between a governance index and firm value should be reflected in security prices as soon as information about the governance index is revealed. In the long run, firms should earn their cost of equity or their required rate of return (see Fama 1998), and there should be no difference in the abnormal returns of firms with different governance index values.

To illustrate, consider a rational expectations framework with two all equity firms that have similar costs of equity and a similar value of book assets. However, one firm has a higher governance index value 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 that has a lower governance index value differently. After the market values firms, however, investors should only earn a 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.

Finding long term abnormal returns for a strategy based on governance index values merits further investigation since the result is inconsistent with efficient markets. 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 spaces that the model was designed for. Fama (1998) recommends a reasonable change of methodology as the solution to poor model problems and advocates the approach used by Mitchell and Stafford (2000). I provide evidence suggesting that abnormal returns to the governance index sorts are not robust to a reasonable change in the methodology used. After using control firm portfolios formed on the same dimensions as the asset pricing model used originally to detect abnormal returns, I find no abnormal returns for a strategy based on governance index values. Firms of differing governance index values earn their cost of equity or required rates of return. These results imply that capital markets are efficient with respect to information about governance. Investors understand the valuation effect

of corporate governance decisions by the firm. Since information about governance is reflected in the price of a firm's stock, stock prices can be used to understand how corporate governance affects firm valuation.

I. Literature Review

A. Governance as a Stock Return Predictor

Recent research investigates whether firms with lower governance index values have greater long-term abnormal 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. 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 that 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. They find that 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 value of the intercept or alpha from monthly regressions on the Fama-French (1993) three-factor model augmented with Carhart's (1997) momentum factor.

Cremers and Nair (forthcoming) 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 larger abnormal returns are still driven by sorts on the governance index as defined by the number of anti-takeover amendments.

B. Testing For Long-Term Abnormal Returns

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, if a model of expected returns cannot explain the returns to randomly sorted portfolios, that model will be biased towards detecting long-term abnormal returns (when none, in fact, exist) for any portfolio having the same characteristics as the unexplained portfolios in random sorts. To address these types of problems, Mitchell and Stafford (2000) recommend the use of control firm portfolios to better measure true expected returns, an approach advocated by Fama (1998).

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 larger number of significant intercepts than would be theoretically expected). In long-term corporate event studies testing for abnormal returns, control portfolios are created using non-event firms that have 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 abnormal performance anomalies identified by previous researchers.

II. Data and Methods

A. Data

The sample used in this paper contains all firms in the Investor Responsibility Research Center (IRRC) universe (except firms with dual class shares) that have a governance index and stock returns from the Center for Research in Security Prices (CRSP), and 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 that 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:

$$(Ri - Rf)_t = \alpha + \beta_1 (Rm - Rf)_t + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 Momentum_t \quad (1)$$

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

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) industry portfolios. 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.

B. Creating Matching Portfolios

There are a few reasons to consider using control firm portfolios to better capture expected returns in testing for long-term abnormal returns. First, previous literature shows that 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 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 that an anomaly will disappear. Mitchell and Stafford (2000) find no long-term abnormal returns for events that 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

[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.

(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, it is unclear as to whether factor loadings 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 worth mentioning. First, these are the firm characteristics upon which the Fama-French-Carhart factors are constructed that were 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 essentially that sorting on governance generates a cross-sectional spread in returns that is independent of the cross-sectional spread in returns generated by size, book-to-market, and momentum. Second, prior literature supports the predictive power of all three of these 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). From this, we know that size and book-to-market spaces present a challenge to asset pricing models. It is probably safe to say that momentum spaces also pose a similar challenge; however, I am not aware of prior literature that investigates the ability of a past return factor to price a past return space.

Because information on the governance index is available through the Investor Responsibility Research Center universe, I only use the Investor Responsibility Research

Center universe to create control firm portfolios. If I collected 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 that has a different governance index from the governance portfolio being tested. For example, the control portfolio for the Democracy sample 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.

IV. Tests and Results

1. Control Firm Portfolios and Model Specification

A. Replication of results in Gompers, Ishii, and Metrick (2003)

I begin my analysis by replicating the results obtained by Gompers, Ishii, and Metrick (2003), and present my findings 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 nearly 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 returns based on the model. Finally, the arbitrage portfolio buying the Democracies and selling the Dictatorships earns long-term abnormal returns of 8.5% annually based on the factor model intercept.

B. Control Firm Portfolio Description

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 after 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, those 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.

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, 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. From these descriptive statistics, the CTRL-Democracy portfolio could be considered a governance neutral portfolio or a non-Democracy. Panel B shows that the CTRL-Dictatorship portfolio has an average governance index of 9.2 and any firm in the portfolio never has a

[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.

governance index greater than 13. The CTRL-Dictatorship could also be considered governance neutral.

Panels B, C, and D in table 2 show the success of the matching procedure. In comparing the governance portfolios to their respective control portfolios, there are similarities across the dimensions of size, book-to-market and momentum. In particular, the Democracy and CTRL-Democracy portfolios include firms that are much larger in size on average and exhibit greater dispersion in size compared to the Dictatorship and CTRL-Dictatorship portfolio firms. Other than the dimension of governance, the control portfolios are quite similar to the governance portfolios.

C. Adjusted Calendar Time Abnormal Returns

I provide a formal test of whether the returns to governance index sorts are a result of asset pricing model problems by using the hedge portfolio methodology suggested by Mitchell and Stafford (2000). The method consists of building a zero-investment calendar-time portfolio that takes long positions in the governance portfolios and short positions in the respective control portfolios. 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), in which case 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, the raw returns of control portfolios are used as expected returns or benchmark portfolios for the Democracy and Dictatorship portfolios. The expected returns generated from the control portfolios are then subtracted from the

returns on the Democracy and Dictatorship portfolios every month in order 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 that the mean monthly calendar time abnormal return of the Democracy portfolio is a negative 0.15% a month and statistically insignificant. 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 and 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. Clearly, using only 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 correcting for model misspecification, I observe no long term abnormal returns relating to governance index values.

Overall, the results presented in Table 3 suggest that neither Democracies nor Dictatorships earn any long term abnormal returns, after controlling for size, book-to-market, and momentum.

D. Return on a Zero Cost Strategy using Control Firm Portfolios

Model misspecification appears to be the reason why past researchers have observed long-term abnormal returns for a strategy based on a governance index. If so, the governance strategy's long-term abnormal returns should be generated primarily by

expected returns that 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 have very similar governance index characteristics but differ more on other dimensions. The CTRL-Democracy minus CTRL-Dictatorship strategy produces a four-factor model alpha of 0.83% a month that is significant at the 5% level. This translates into an annual abnormal return of 10% a year, which is comparable 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, once again, that expected returns not captured by the four-factor model could explain the results observe by prior researchers.

2. Robustness

A. Extreme Governance Control Firm Portfolios

The results so far suggest that there are no long-term abnormal returns to a governance strategy after correcting for misspecification in the asset-pricing model. Since control firm portfolios contain some near-Democracies and near-Dictatorships, one could argue that those firms are generating similar returns to Democracies and Dictatorships. To account for this problem, I make sure that the control firm portfolios contain firms that are 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 more

like a Democracy compared to the previously defined CTRL-Dictatorship. Likewise, the new control for the Democracy is much more like a Dictatorship.

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.

B. 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 suggests that industry is a dimension that has predictive power and is 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. I match firms based on industry, size and momentum in a similar fashion to the formation of control firm portfolios and find no abnormal returns to governance portfolios.

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

From 25 size/book-to-market portfolio sorts, 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 have positive and significant intercepts from regressions on the Fama-French three-factor model. Adjusted Democracy portfolio returns with a control portfolio comprised of the largest size quintile/lowest book-to-market quintile returns results in statistically and economically insignificant abnormal

returns for the Democracy portfolio. Since Wal-Mart lies in this space, I remove its returns from the Democracy portfolio. After removing Wal-Mart, Democracy portfolio returns have insignificant intercepts when regressed on a four-factor model. Finally, forming control portfolios on book-to-market alone results in insignificant adjusted intercepts and calendar time abnormal returns. These results are available from the author upon request.

V. Conclusion

Recent empirical research has found that sorting on governance index generates significant long-term abnormal returns of 8.5% to 15% annually. These results are puzzling in efficient markets, and indeed, researchers found no clear interpretation. Gompers, Ishii, and Metrick (2003) state,

> *"We consider several explanations for the results, but the data do not allow strong conclusions about causality . . . These multiple causal explanations have starkly different policy implications and stand as a challenge for future research."*

Likewise, Cremers and Nair (forthcoming) also find it difficult to attribute governance strategy long-term abnormal returns to any one explanation,

> *"We are left with three interpretations . . . However, any further differentiation between these three interpretations hinges on the development of a theory that would explain why (and if) governance should be associated with any priced risk."*

To answer the challenge put forth by Gompers, Ishii, and Metrick (2003) I provide an in-depth exploration of the misspecified asset-pricing model hypothesis. Using the control firm portfolio approach outlined in Mitchell and Stafford (2000) and advocated by Fama (1998), I find no abnormal returns for any governance strategy. After controlling for size, book-to-market and momentum, little difference exists between the long-term performance of Democracies and Dictatorships.

This study has several important implications. For investors, buying firms with "better" governance will not generate positive abnormal returns; since in efficient markets, information about the governance index is immediately reflected in security prices. From another perspective, investors understand the effect of corporate governance decisions on firm value. Prices accurately reflect information about governance. For academics, this study highlights the importance of using control firm portfolios as a possible solution for model misspecification and for assessing the robustness of results in other long-run event studies. Also, corporate governance researchers are now able to use market prices to infer the costs and benefits of corporate governance on firm valuation.

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

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 that is 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)

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 that have a governance index value greater than 5 are possible candidates. To create a control firm portfolio for the Dictatorship portfolio, only IRRC firms that have 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 that are 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 for each portfolio. Panel B shows descriptive statistics of each portfolio for monthly size (price times shares outstanding divided by 1000). Panel B shows descriptive statistics of each portfolio for monthly book-to-market equity. Panel C shows descriptive statistics of each portfolio for past 11 month momentum.

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
CTRL-Democracy	9.6	2.4	6	17
Dictatorship	14.6	0.8	14	18
CTRL-Dictatorship	9.2	2.5	2	13

Panel B: Descriptive Statistics of Monthly Portfolio Size (Sep. 1990 to Dec. 1999)

Portfolio	Firm Months	Mean	Standard Deviation
Democracy	15159	4113.83	13785.05
CTRL-Democracy	12684	3864.29	17189.78
Dictatorship	9133	3215.74	7054.90
CTRL-Dictatorship	7889	3033.78	7004.25

Table 2 (Continued)
Portfolio Descriptive Statistics

Panel C: Descriptive Statistics of Monthly Portfolio Book-to-Market (Sep. 1990 to Dec. 1999)

Portfolio	Firm Months	Mean	Standard Deviation
Democracy	15159	0.68	0.83
CTRL-Democracy	12684	0.61	0.61
Dictatorship	9133	0.65	0.56
CTRL-Dictatorship	7889	0.65	1.06

Panel D: Descriptive Statistics of Monthly 11 Month Momentum (Sep. 1990 to Dec. 1999)

Portfolio	Firm Months	Mean	Standard Deviation
Democracy	15159	13.51	46.34
CTRL-Democracy	12684	14.39	38.99
Dictatorship	7889	12.99	30.42
CTRL-Dictatorship	8334	13.61	32.19

Table 3
Adjusted Calendar Time Abnormal Returns

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 *(t=-0.63)* *(p=0.523)*	2.49	-8.31	8.44

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 *(t=1.18)* *(p=0.241)*	2.19	-5.59	5.46

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 (0.25)	0.01 (0.07)	-0.19** (0.09)	0.08 (0.10)	-0.14** (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 (0.23)	0.05 (0.07)	0.05 (0.08)	0.14 (0.09)	0.08 (0.06)

Table 4
Return on Zero Cost Control Firm Portfolio Strategy

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)

Table 5
Extreme Control Portfolios: Adjusted Calendar Time Abnormal Returns

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

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

Table 5 (Continued)
Extreme Control Portfolios: Adjusted Calendar Time Abnormal Returns

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)