

# **Governance, Stock Returns, and Market Efficiency**

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## **ABSTRACT**

Recent studies find significant positive (negative) long-term abnormal returns over the 1990s for firms with good (poor) governance, which calls into question both market efficiency and the usefulness of a large number of extant governance studies that use stock prices or returns from that period. Using control-firm calendar-time regressions, we find long-term abnormal returns that are statistically insignificant and near zero in magnitude for portfolios sorted on governance. The result from previous studies that good-governance firms have significantly higher Tobin's Qs than poor-governance firms do is robust to controlling for characteristics known to affect stock returns. Our results imply that good governance positively affects firm value, that investors recognized and impounded that value into share prices quickly and accurately, and that it is safe to draw inferences from governance studies based on 1990s data.

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## **ABSTRACT**

Recent studies find significant positive (negative) long-term abnormal returns over the 1990s for firms with good (poor) governance, which calls into question both market efficiency and the usefulness of a large number of extant governance studies that use stock prices or returns from that period. Using control-firm calendar-time regressions, we find long-term abnormal returns that are statistically insignificant and near zero in magnitude for portfolios sorted on governance. The result from previous studies that good-governance firms have significantly higher Tobin's Qs than poor-governance firms do is robust to controlling for characteristics known to affect stock returns. Our results imply that good governance positively affects firm value, that investors recognized and impounded that value into share prices quickly and accurately, and that it is safe to draw inferences from governance studies based on 1990s data.

## **Governance, Stock Returns, and Market Efficiency**

In a recent influential paper, Gompers, Ishii, and Metrick (GIM) (2003) examine the relation between governance, stock returns, and firm value. GIM develop a measure of shareholder rights based on a governance index (G) that contains a count of various anti-takeover provisions. Consistent with the view that good governance positively affects firm value, they find that low-G firms (termed *Democracies*) have higher Tobin's Q ratios and better operating performance than high-G firms (termed *Dictatorships*). They also find that Democracies earn significantly positive excess returns and that Dictatorship firms earn significantly negative excess returns through the 1990s. Furthermore, a hedge portfolio that is long Democracy firms and is short Dictatorship firms generates an abnormal return of approximately 8.5 percent per year over the period from 1990 to 1999. Cremers and Nair (2004) and Bebchuk, Cohen, and Ferrell (2004) replicate and extend GIM's abnormal return findings.

Although GIM and the other studies are not intended to be tests of market efficiency, the significant long-term abnormal returns they find call into question not only market efficiency, but also the usefulness of a large number of extant empirical studies that use stock returns or prices in the 1990s to study the effects of governance characteristics on firm value. If stock prices did not quickly and accurately reflect firms' governance choices in that time frame, then governance-based event studies and studies relating Tobin's Q or some other stock-price-based value measure to governance may have made erroneous inferences. There are clear benefits to the literature in assessing the robustness and validity of the significant long-term abnormal returns associated with governance.

In this paper, we reexamine the previous findings of long-term abnormal returns. Motivated by one of GIM's hypotheses to explain their findings (their "hypothesis III"), we conjecture that during the 1990s, Democracy firms had size, book to market, momentum, and industry characteristics of firms that had unexpectedly strong stock performance. Likewise, we conjecture that Dictatorships had the characteristics of firms that had unexpectedly weak stock performance. In other words, we examine whether the long-term abnormal return results are driven by non-governance factors. Substantial empirical evidence in the asset pricing literature documents the importance of these factors in explaining stock returns.

Gompers, Ishii and Metrick (2003), Cremers and Nair (2004), and Bebchuk, Cohen and Ferrell (2004) all employ the same Fama and French (1993) asset-pricing model augmented by Carhart's (1997) momentum factor. Fama (1998) observes that the three-factor model does not completely explain the cross-section of returns in portfolios grouped by size and book to market, so it is reasonable to suspect similar problems with the four-factor model. As a remedy, Mitchell and Stafford (2000) propose the use of a calendar-time control firm approach to correct for possible misspecifications in the pricing model. From an experimental design perspective, the use of control firms is intuitively appealing because it more closely approximates the ideal randomized environment required to assess causality.<sup>1</sup>

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<sup>1</sup> The control firm approach continues to gain popularity in the finance literature. Mitchell and Stafford (2000) show that many of the previously documented long-term abnormal returns disappear after the use of control firms, and Boehme and Sorescu (2002) find no reliable underreaction following dividend initiations and resumptions. More recently, Mayhew and Mihov (2004) show that the decrease in stock return volatility following option introduction documented by Skinner (1989) is even stronger for a set of control firms that do not list new options. They conclude that options have no effect on underlying volatility.

Following Mitchell and Stafford's approach, for each Democracy firm we select a control firm that is *not* a Democracy, yet is similar in size, book to market, momentum, and industry characteristics. We refer to these control firms as *pseudo*-Democracies. We choose these pseudo-Democracies from the set of firms with G indexes greater than five because GIM define Democracies as firms with a G index of five or less. We repeat the same process for Dictatorships, choosing control firms that are *pseudo*-Dictatorships from among the set of firms with G indexes less than 14 and matched on size, book to market, momentum, and industry characteristics.

We find that the abnormal returns of Democracy firms over the 1990s are almost identical to those of pseudo-Democracy firms, and the abnormal returns of Dictatorship firms are almost identical to those of pseudo-Dictatorship firms. Thus, measuring abnormal returns using the control-firm calendar-time approach, which better controls for asset pricing model misspecification, shows that neither Democracies nor Dictatorships earn statistically significant abnormal returns over the 1990s. These results are consistent with an efficient capital markets view in which investors properly valued and priced shareholder rights from at least the beginning of the 1990s.

We also replicate the hedge portfolio analysis from previous studies. Consistent with the prior studies, we find significant positive abnormal returns of approximately 8.5 percent per year on a hedge portfolio that takes long positions in Democracy firms and short positions in Dictatorships. Importantly, however, we find similarly large positive abnormal returns (7.4 percent per year) on a hedge portfolio that takes long positions in pseudo-Democracy firms and short positions in pseudo-Dictatorship firms. Because pseudo-Democracies are actually non-Democracies and pseudo-Dictatorships are actually

non-Dictatorships, these results imply that the hedge portfolio abnormal returns observed in the prior studies are not driven by governance factors, but rather by differences in the size, book to market, momentum, and industry characteristics of the respective firms. The insignificant long-term abnormal returns and the hedge portfolio results are robust to using ‘extreme’ control firms that have G indices farther away from those of their matches, to using a subset of the matching variables, and to using a measure based on the subset of provisions that Bebchuk, Cohen, and Ferrell (2004) identify as driving GIM’s results.

We also examine differences in Tobin’s Q across Democracies and Dictatorships using industry-adjusted Q ratios and the control variables in GIM, in addition to controls for size, book-to-market, and momentum. Consistent with GIM’s findings, we find that Q ratios increase as G index values decrease and that Democracy firms have significantly higher Q ratios than Dictatorship firms. In contrast to GIM, however, there is no evidence that good governance has a higher value at the end of the 1990s compared to the beginning of the 1990s. In fact, there is no clear upward or downward trend in differences in the value of governance over the 1990s. This is consistent with our evidence indicating normal long-term returns through the 1990s for both Democracy and Dictatorship firms.

In summary, GIM’s (2003) main result that shareholder-friendly firms have higher firm value (Tobin’s Q ratios) is robust to using control firm adjustments. By contrast, long-term abnormal returns become insignificant (economically and statistically) after adjusting for control firms, suggesting that previous findings of significant long-term abnormal performance are driven by asset pricing model

misspecification. Taken together, our results reconcile GIM's findings about the value of governance with market efficiency: Shareholder rights as measured by GIM's index are valuable and investors appear to properly value them. Once a firm's governance characteristics are known, investors quickly and accurately attach a corresponding value, after which the firm earns normal returns as market efficiency predicts. Our study complements Core, Guay, and Rusticus's (forthcoming) findings that analysts and investors were not surprised by the poor performance of poor governance firms in the 1990s. Our study also represents another instance where results change materially once asset pricing model misspecification is addressed via the control firm approach suggested by Fama (1998) and Mitchell and Stafford (2000).

The next section of the paper describes our data and methods. Section II contains results for the long-term abnormal and adjusted return analyses. Section III contains results of tests of the effect of governance on firm value as measured by Tobin's Q. Section IV concludes.

## I. Data and Methods

### *A. Data*

We use substantially the same sample used in Gompers, Iishi, and Metrick (2003). Specifically, our sample 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.<sup>2</sup> The governance index has a range from 0 to 24 and increases by one for every manager-friendly charter provision that a firm has. Following GIM, we classify firms with a governance index (G) of 5 or less as *Democracies*, and firms with a governance index (G) of 14 or more as *Dictatorships*. During the 1990s, the governance index (G) is computed four times, to account for updated IRRC publication of governance provisions: 1990, 1993, 1995 and 1998. We follow GIM and use the latest available governance index during the years when the IRRC does not update its publication.<sup>3</sup>

### *B. Traditional Calendar Time Portfolios*

We initially follow the procedure used in previous studies (Gompers, Ishii and Metrick, 2003, Cremers and Nair, 2004, and Bebchuk, Cohen and Ferrell, 2004) and measure abnormal stock returns using calendar time portfolios that are *unadjusted for control firms*. For each calendar month, we calculate the monthly return to value-weighted portfolios of firms grouped into Democracies and Dictatorships, according to the most recent value of the governance index. We then regress the excess monthly returns on the three risk factors proposed by Fama and French (1993) and the momentum factor proposed by Carhart (1997):

$$(R_i - R_f)_t = \alpha + \beta_1(R_m - R_f)_t + \beta_2SMB_t + \beta_3HML_t + \beta_4Momentum_t \quad (1)$$

where  $(R_i - R_f)_t$  is the return of the governance portfolio in excess of the one-month Treasury Bill. The four independent variables are the excess return on the market

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<sup>2</sup> <http://finance.wharton.upenn.edu/~metrick/data.htm>.

portfolio  $(Rm - Rf)_t$ , the difference between the returns of value weighted portfolios of small and big firm stocks ( $SMB_t$ ), the difference in returns of value weighted portfolios of high and low book-to-market stocks ( $HML_t$ ), and the difference in returns of stocks with high past returns minus those with low past returns ( $Momentum_t$ ).<sup>4</sup> The intercept  $\alpha$  is interpreted as the mean monthly abnormal return of the calendar time portfolio. Data for the three Fama-French factors are obtained from Kenneth French, and the *Momentum* factor is obtained Mark Carhart. Stock return data are from the Center for Research in Security Prices.

### C. Control-Firm-Adjusted Calendar Time Portfolios

Fama and French (1993) and Mitchell and Stafford (2000) show that a three-factor version (without *Momentum*) of the traditional model described in equation (1) does not completely explain the cross-section of stock returns in that it tends to over-reject the null hypothesis of zero abnormal return in random samples. In addition, Fama and French (1996) and Fama and French (1997) document a momentum bias and an industry bias (respectively) for the three-factor version of equation (1). Moreover, Daniel and Titman (1997) show that factor loadings on *SMB* and *HML* provide no additional information in explaining the cross-section of stock returns after sorting on size and book-to-market, suggesting that firm characteristics provide a better cross-sectional description of stock returns than factor loadings.

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<sup>3</sup> For a more detailed description of the governance index and its construction, see Gompers, Ishii, and Metrick (2003).

<sup>4</sup> For more information on the construction of the *HML*, *SMB*, and momentum factors see Fama and French (1993, p. 9) and Carhart (1997 footnote on p. 61).

In the spirit of Mitchell and Stafford (2000), we control for potential misspecifications of equation (1) by estimating the following four-factor model:

$$R_{\text{governance},t} - R_{\text{control},t} = \alpha_p + \beta_p(Rm - Rf)_t + s_pSMB_t + h_pHML_t + m_pMomentum_t \quad (2)$$

In equation (2) the returns of governance firms (Democracies or Dictatorships) are compared with those of control firms that do not share the particular governance characteristic, but are otherwise similar along four pre-determined matching criteria: size, book-to-market, momentum, and industry.<sup>5</sup> The "adjusted" intercept ( $\alpha_p$ ) from equation (2) represents a measure of long-term abnormal performance that specifically corrects for possible biases that are inherent in the traditional four-factor model of equation (1). This method follows Boehme and Sorescu (2002) and is slightly different from that shown in equation (6) of Mitchell and Stafford (2000); both methods produce the same point estimate of the hedge intercept ( $\alpha_p$ ), but the method we use in our equation (2) properly accounts for the covariance between the calendar returns of governance firms and those of control firms.

During each of the months corresponding to the IRRC governance publication (September 1990, July 1993, July 1995, and February 1998), we match each firm in the Democracy portfolio ( $G \leq 5$ ), with a pseudo-Democracy selected as follows:

- We first identify all control firm candidates from the IRRC universe that are *not* Democracies ( $G > 5$ ), but are within the same industry.

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<sup>5</sup> Although a large number of long-term return anomalies can be explained with the use of control-firm calendar time portfolios, some anomalies survive. Mitchell and Stafford (2000) show that 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

- From the remaining non-Democracy firms, we keep those within 50% to 150% of the Democracy firm's momentum.
- From the remaining non-Democracy firms, we keep those within 70% to 130% of a Democracy firm's book-to-market ratio.
- Finally, from the remaining set, we pick the non-Democracy firm that is closest in size, measured as market capitalization.

Dictatorship firms ( $G \geq 14$ ) are matched with pseudo-Dictatorships ( $G < 14$ ) in an identical manner. We later discuss robustness checks that use control firms with G-index values at least four levels away from the respective Democracy or Dictatorship firms.

We chose size, book to market, and momentum as matching factors for two reasons. First, they correspond to the pricing factors of equations (1) and (2). Second, prior studies provide extensive support for the cross-sectional explanatory power of size and book to market (Fama and French, 1992), and momentum (Jegadeesh and Titman, 1993). We also chose industry as a matching factor for two reasons. First, 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. Second and related to the first point, GIM find that an industry

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following R&D increases persist even after using matching portfolios based on size, book-to-market and momentum.

adjustment explains about one-third of the abnormal return on the Democracy minus Dictatorship portfolio.

## II. Long-term Return Results

### *A. Traditional (Unadjusted) Four-Factor Model*

We begin our analysis by replicating the results obtained by Gompers, Ishii, and Metrick (2003) using their method, and present the findings in Table I. All calendar time portfolios are value-weighted, and abnormal returns are expressed on a monthly basis. Panel A shows the original results from Table VI of GIM, for Democracies and Dictatorships portfolios. Panel B shows that our replicated results are nearly identical. Using the four-factor model in equation (1) unadjusted for control firms, the Democracy portfolio earns positive and significant long-term abnormal returns, and the abnormal returns of the Dictatorship portfolio are significantly negative. We also find that the hedge portfolio that is long on Democracies and short on Dictatorships earns significantly positive long-term abnormal returns of 0.70 percent per month, which is almost identical to the 0.71 percent per month documented by GIM.

[Table I about here]

### *B. Control Firm Descriptive Statistics*

We next construct the pseudo-Democracy and pseudo-Dictatorship control portfolios, and present the descriptive statistics in Table II. Panel A describes the governance index of the two governance portfolios and two control portfolios. We present descriptive statistics only for Democracy and Dictatorship firms for which we can

find suitable control firms that fit the matching parameters described above. The long-term abnormal return results presented in the paper include all Democracy and Dictatorship firms whether or not they have a match. Limiting the Democracy and Dictatorship portfolios to firms with a suitable control firm does not affect the inferences presented in the paper.

[Table II about here]

As shown in Panel A of Table II, the pseudo-Democracy portfolio has an average governance index of 9.6, which is near the mean of approximately 9.0 for the entire IRRC universe, and by selection firms in this portfolio never have a governance index that is less than 6.<sup>6</sup> By contrast, the average governance index of the Democracy portfolio is 4.4, with individual G values ranging from 2 to 5. The pseudo-Dictatorship portfolio has an average governance index of 9.0, which is equal to the mean governance index for the entire IRRC universe, and by selection no firm in that portfolio has a governance index greater than 13. By contrast, the average governance index of the Dictatorship portfolio is 14.6, with G values ranging from 14 to 18. It is apparent from these results that both the pseudo-Democracy and pseudo-Dictatorship portfolios are “governance neutral.” Moreover, Panel A also shows that the correlation between G-index values for Democracy and pseudo-Democracy firms is only 0.05; the correlation between G-index values for Dictatorship firms and their respective controls is only -0.01. Panels B, C, and D show the success of the matching procedure. In comparing the governance portfolios to their respective control portfolios, we observe clear similarities across size, book-to-

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<sup>6</sup> 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.

market and momentum. The portfolios are also similar across industry dimensions although the results are not shown. Overall, the results in Table II demonstrate that the control portfolios are similar to the governance portfolios except for the governance characteristic.

### *C. Abnormal Returns with Control Firm Adjustments*

We now control for possible misspecifications in the four-factor asset-pricing model by building a hedge (zero-investment) calendar-time portfolio that takes long positions in each governance portfolio (Dictatorship or Democracy) and short positions in the respective pseudo (or control) portfolio. Table III presents the results.

#### *C.1. Mean Monthly Hedge Returns*

We first compute the intertemporal average of the hedge portfolio's returns, and present the results in Panel A. Time series standard errors are used to test the hedge returns for significance. We observe that the mean monthly return of the hedge portfolio long on Democracies and short on pseudo-Democracies is  $-0.12\%$  a month and statistically insignificant ( $p$ -value = 0.53). A similar result is observed in the bottom half of the panel for the "long Dictatorship / short pseudo-Dictatorship" hedge portfolio:  $-0.21\%$  a month and statistically insignificant ( $p$ -value = 0.36). These results suggest that mean monthly raw returns of Democracies and Dictatorships do not differ from the returns on their respective control portfolios in the 1990s.

[Table III about here]

### *C.2. Calendar Time Abnormal Returns Adjusted with Control Firms*

We next estimate the model in equation (2) by regressing the returns of the hedge portfolios on the four Fama-French-Carhart factors, and present the results in Panel B. The adjusted alpha for the “long Democracy / short pseudo-Democracy” hedge portfolio is  $-0.06\%$  per month and statistically insignificant. The “long Dictatorship / short pseudo-Dictatorship” hedge portfolio has an adjusted alpha of  $-0.14\%$  per month, also statistically insignificant. The insignificance does not appear to be driven by low power because the point estimates of the monthly abnormal returns are near zero. Overall, these results suggest that the abnormal returns of Democracies and Dictatorships are due to their size, book-to-market, momentum, and industry characteristics because similar returns are observed for control firms that are matched on these same characteristics while remaining governance neutral.

### *C.3. Pseudo-Democracies perform better than Pseudo-Dictatorships*

Results in the previous sub-section suggest that model misspecification appears to be the reason why previous research has documented long-term abnormal returns for a strategy based on the GIM 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 proposition, we regress a zero-cost portfolio comprised of control firm portfolios on the four Fama-French-Carhart factors and present the results in Panel C of Table III. Pseudo-Democracy and pseudo-Dictatorship firms have very similar governance index characteristics but differ on other dimensions. The pseudo-Democracy minus pseudo-Dictatorship hedge strategy produces

an intercept of 0.62 percent per month that is significant at the 5 percent level. This translates into an annual abnormal return of approximately 7.4 percent a year, which is comparable to the abnormal returns of 8.5 percent per year measured in the same way for the strategy that is long Democracies and short Dictatorships. The pseudo portfolios are both governance neutral, so this large and significant abnormal hedge return suggests that governance does not drive the abnormal returns. Instead, the strategy based on these portfolios suggests that expected returns not captured by the four-factor model likely explain the results observed in previous research.

#### *D. Control Firm Portfolios using a Subset of the Matching Characteristics*

Although industry is an important determinant of the cross-section of stock returns (Fama and French, 1997), there is no explicit industry factor in equations (1) and (2). For robustness, we exclude industry from the matching procedure detailed in Section I, and present the results in Table IV. In all cases, the adjusted abnormal returns to Democracies and Dictatorships remain statistically insignificant. Point estimates are somewhat larger in magnitude than in Table III, however. The adjusted intercept for the Democracy portfolio is 0.32 percent per month and is -0.24 percent per month for the Dictatorship portfolio. One might conclude that the insignificance of these results is due to low power of the test; however, the adjusted abnormal return for the Dictatorship portfolio is close to half the magnitude of the unadjusted Dictatorship abnormal return. Consistent with previous literature, we conclude that industry is an important dimension for the cross-section of returns that is not captured well by standard asset pricing models.

[Table IV about here]

### *E. Extreme Governance Control Firm Portfolios*

The results thus far suggest that there are no long-term abnormal returns to a governance strategy after correcting for misspecification in the asset-pricing model. Because the pseudo-Democracy (pseudo-Dictatorship) control firm portfolio may contain some near-Democracies (near-Dictatorships), one could argue that those firms are generating similar returns to Democracies and Dictatorships because their governance levels are relatively close to the respective matched firms. To account for this problem, we repeat the analysis used in Table III but require that control firms have governance levels that are at least four levels removed from Democracies and Dictatorships. This increases the differences in governance between the Democracy or Dictatorship firms and their respective controls. Results are reported in Table V.

[Table V about here]

Panel A of Table V reports descriptive statistics for the new control firms chosen under the more restrictive rule. Pseudo-Democracy firms under the more restrictive matching rule have a minimum governance index value of 10 and an average governance index value of 11.7. Pseudo-Dictatorship firms have a maximum governance index value of 9 and an average governance index value of 7.1. The pseudo-Dictatorship portfolio from the more restrictive matching is now more like a Democracy compared to the previously defined pseudo-Dictatorship. Likewise, the new control for the Democracy is more like a Dictatorship than the previously defined pseudo-Democracies.

Consistent with the earlier reported results, intertemporal mean monthly returns of control-firm adjusted Democracy and Dictatorship returns are insignificantly different

from zero as shown in Panel B of Table V. Adjusted intercepts from the respective four-factor model regressions in Panel C are also statistically insignificant. The adjusted alpha point estimate for the Democracy portfolio is now  $-0.43$  percent per month (compared to  $-0.06$  percent per month in Table III). The point estimate for the Dictatorship portfolio remains at  $-0.14$  percent per month. Thus, the findings of no long-term abnormal returns for the governance portfolios shown in Table III are unlikely to be driven by near-Democracies and near-Dictatorships.

#### *F. Entrenchment Index Portfolios*

Bebchuk, Cohen, and Ferrell (2004) (BCF) suggest that only a subset of six of the provisions used to construct the G index in GIM are important. They use these six anti-takeover amendments to construct an entrenchment index. We repeat the analysis in Table III using BCF's measure of governance, and present the results in Table VI. We call firms with low entrenchment index values (equal to zero) *BCFDemocracies*, and firms with high entrenchment index values (equal to five or six) *BCFDictatorships*. As shown in Panel A of Table VI, pseudo-BCFDemocracies have an entrenchment index greater than zero and pseudo-BCFDictatorships have an entrenchment index less than five. The matching procedure is the same as that used in Tables III and V (detailed in Section I), except that the entrenchment index is used instead of the G index as a measure of governance.

[Table VI about here]

Panel B of Table VI presents the original BCF results for regressing a portfolio long *BCFDemocracies* and short *BCFDictatorships* on the usual four factors. In Panel C,

our replication of the zero-cost entrenchment strategy generates an intercept of 1.20 percent per month similar to BCF's large intercept of 1.16 percent per month. BCFDemocracies earn positive and significant returns and BCFDictatorships earn significantly negative returns. Panels D and E use pseudo-firms (or control firms) to test for long-term abnormal returns. In short, the results show no statistically significant long-term abnormal returns for either BCFDemocracies or BCFDictatorships. Thus, our main finding of no abnormal returns is robust to using the subset of provisions that BCF identify as driving GIM's results.

### III. Tobin's Q Regression Results

Although we find that there are no statistically significant long-term abnormal returns based on governance for the 1990s, it does not follow that governance necessarily has no effect on firm value. In an efficient market, if good governance positively affects firm value, we should find that firms with good governance have higher Tobin's Qs, but earn normal returns after investors impound the effects of good governance in stock prices quickly and accurately. In this section we reexamine the effect of governance on Tobin's Q. In particular, we estimate regressions similar to those in GIM, using the same industry-adjusted Q and control variables as they do, but adding control variables for size, book-to-market, and momentum. The logic is similar to our stock return analysis. If firms with certain characteristics like size, book to market, momentum, and industry had systematically higher or lower returns throughout the 1990s, then these would manifest themselves in different Tobin's Q ratios. Adding control variables to industry-

adjusted Tobin's Q regressions removes the effects of size, book to market, momentum, and industry.

Following GIM, we estimate the Tobin's Q regressions with the entire sample to examine the G index coefficient and for the sub-sample that includes only Democracy and Dictatorship firms, using a dummy variable to distinguish between them. We define Tobin's Q as GIM do: Market value of assets divided by book value of assets, with market value of assets defined as book value of assets plus the market value of common stock minus the book value of common stock and deferred taxes. We compute Tobin's Q each sample year and subtract the respective industry median Tobin's Q. Table VII reports the results.

In columns (1) and (4) of Table VII, we present GIM's original results, which they obtained using only the following control variables in Q regressions: natural log of book value of assets, the natural log of firm age as of December of each year, a dummy variable for firms incorporated in Delaware, and a dummy variable for firms in the Standard & Poor's 500 index.

Columns (2) and (5) report our replication of GIM's Tobin Q results using the same set of control variables as theirs. Our replicated results are similar: the average coefficient on the G index is negative and significant, and the average coefficient on the Democracy dummy is significantly positive. The coefficient on the G index in 1999 remains the largest estimate, and the coefficient on the Democracy dummy in 1999 is still large though is no longer the largest estimate from Democracy dummy regressions (to be discussed later).

In columns (3) and (6) of Table VII, we add controls for size, book-to-market, and momentum to the regressions. Control variables used as matching characteristics in the calendar time regressions are matched up to the Tobin's Q data in December of each year. The controls added include market value of equity (size) at the beginning of December of each year, the ratio of book value of equity as of the end of December in year  $t-1$  to market value of equity at the beginning of December of each year, and past six-month returns from May through October of each year.<sup>7</sup>

[Table VII about here]

The last row of Table VII shows the time-series averages of the Q regression coefficients, with standard errors computed using a Fama-MacBeth (1973) approach. The results show that on average over the 1990s firms with lower values of G (better governance) have higher Tobin's Q and that Democracy firms have significantly greater Tobin's Q than Dictatorship firms, even after controlling for size, book-to-market, momentum, and industry. The mean coefficient on G is 0.030 with a standard error of 0.004, and the mean Democracy dummy coefficient is .257 with a standard error of 0.054. Thus, firms with good governance have a significantly higher value than firms with poor governance.

In contrast to GIM's findings, however, we find no evidence to suggest that investors attached a higher value to good governance in the late 1990s compared to the early 1990s. In columns (3) and (6) of Table VII, the 1999 coefficient for both G and Democracy dummy variables is significantly reduced after adding size, book-to-market,

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<sup>7</sup> In columns (3) and (6), we do not include the log of book value of assets in the set of control variables.

and momentum control variables. Table VIII tests for the existence of a time trend, or alternatively, a difference between 1999 and the rest of the sample in the coefficient estimates from Table VII. Panel A of Table VIII shows  $\beta_{0G}$  and  $\beta_{0D}$ , the time trend coefficient estimates from the following regression (corrected for serially correlated error terms):

$$\begin{pmatrix} \beta G_t \\ \beta D_t \end{pmatrix} = \begin{pmatrix} \alpha_{0G} + \beta_{0G} Year_t + \beta'_{0G} \beta G_{t-1} \\ \alpha_{0D} + \beta_{0D} Year_t + \beta'_{0D} \beta D_{t-1} \end{pmatrix} \quad (3)$$

$\beta G_t$  is the regression coefficient on the G index each year in the 1990s from a regression of Tobin's Q on the G index and various controls.  $\beta D_t$  is the regression coefficient on the Democracy dummy each year in the 1990s from a regression of Tobin's Q on the Democracy dummy and various controls.  $Year_t$  is equal to calendar year of each respective Tobin's Q regression. A lagged dependent variable is also included because the coefficients from Table VII appear autocorrelated. We find no statistical evidence of a time trend for GIM's original results, our replications, or the Tobin's Q regression coefficients with additional control variables.

[Table VIII about here]

In Panel B of Table VIII, the  $Year_t$  variable in equation (3) is replaced with a dummy variable equal to unity for 1999, and zero for all other years.

$$\begin{pmatrix} \beta G_t \\ \beta D_t \end{pmatrix} = \begin{pmatrix} \alpha_{1G} + \beta_{1G} d1999 + \beta'_{1G} \beta G_{t-1} \\ \alpha_{1D} + \beta_{1D} d1999 + \beta'_{1D} \beta D_{t-1} \end{pmatrix} \quad (4)$$

Both the original results in GIM (columns 1 and 4), and our replication (columns 2 and 5) indicate a stronger relationship between Tobin's Q and governance during 1999,

when compared to the rest of the sample period. However, when size, book-to-market, and momentum are added as control variables (columns 3 and 6), the 1999 dummy estimates are not statistically different from the rest of the sample. The 1999 dummy estimate for G variable coefficients is reduced from  $-0.074$  in our replication (column 2) to an insignificant  $-0.019$  (column 3) after controlling for size, book-to-market and momentum. Similarly, the 1999 estimate for the Democracy dummy coefficients is reduced from  $-0.289$  (column 5) to a statistically insignificant  $-0.104$  (column 6), with added controls.

In summary, the Tobin's Q regression results reconcile GIM's main results with market efficiency. Specifically, good governance as measured by their G index is in fact valued by investors, but investors appear to have recognized and impounded that value into share prices uniformly throughout the 1990s.

#### IV. Conclusion

We reexamine the findings of significant long-term abnormal returns related to governance over the 1990s documented by Gompers, Ishii, and Metrick (2003), Cremers and Nair (2004), and Bebchuk, Cohen, and Ferrell (2004). These findings call into question both market efficiency and the usefulness of a large number of extant empirical studies of governance that used stock returns and prices from the 1990s. We use the same sample and governance indexes used in those studies, but avoid potential problems created by asset pricing model misspecification using the control firm approach advocated by Fama (1998) and developed by Mitchell and Stafford (2000). We find that

long-term abnormal returns for both good- and poor- governance firms are statistically insignificant and are near zero in magnitude over the 1990s. Examining Tobin's Qs after controlling for variables that affect the cross-section of stock returns, we find that good governance firms have significantly higher value than poor governance firms. Thus, investors appear to value good governance (as measured by the GIM index), but also appear to recognize and impound that value into share prices relatively quickly and accurately.

Our findings of zero long-term abnormal returns over the 1990s are consistent with market efficiency with respect to the information in the governance index. The results also suggest that it is safe to draw inferences from the large number of extant corporate governance studies that use market prices from the 1990s. 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.

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**Table I**  
**Replication of Calendar Time Regressions from Gompers, Ishii, and Metrick (2003)**  
**Using their Method for Measuring Abnormal Returns**

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). Firms are classified into Democracy and Dictatorship portfolios based on a governance index made of anti-takeover amendments and charter provisions from the Investor Responsibility Research Center (IRRC). Democracies are defined as firms with 5 or fewer charter provisions. Dictatorships are defined as firms with 14 or more charter provisions. 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. *Intercept* or ( $\alpha$ ) measures the abnormal returns to holding any portfolio. 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 using their method. 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 of GIM, reproduced from their Table VI (Sept. 1990 – Dec. 1999)**

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

**Panel B: Replication of GIM results using their method (Sept. 1990 – Dec. 1999)**

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

**Table II**  
**Descriptive Statistics of Governance and Control Portfolios**

This table presents descriptive statistics for control portfolios and compares them to respective statistics for the subject portfolios. Firms are classified into 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). Democracies have five or fewer charter provisions. Dictatorships have 14 or more charter provisions. Using the IRRC universe, we select control (termed *pseudo*) firms for each Democracy and Dictatorship firm. To select control firms for Democracy firms, we begin with firms in the IRRC universe with a governance index greater than 5, discard those not in the same industry (as defined by the 48 Fama and French 1997 industries), discard those not within 50% to 150% of the subject Democracy firm's momentum, discard remaining firms not within 70% to 130% of the subject firm's book-to-market, and from the remaining firms we choose the closest size firm. We follow the same process to choose pseudo-Dictatorships, except we begin with the set of IRRC firms with governance index values less than 14. We repeat this process for September 1990, July 1993, July 1995, and February 1998, the dates on which IRRC data are available. Panel A shows average governance index values for each portfolio. Panel B shows descriptive statistics of each portfolio for past 6-month momentum at the portfolio formation month. Panel C shows descriptive statistics of each portfolio for portfolio formation month book-to-market equity. Panel D shows descriptive statistics of each portfolio for portfolio formation month size (price times shares outstanding divided by 1000).

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

Portfolio	Mean	Standard Deviation	Minimum	Maximum	Correlation
Democracy	4.4	0.8	2	5	0.05
Pseudo-Democracy	9.6	2.5	6	17	
Dictatorship	14.6	0.8	14	18	-0.01
Pseudo-Dictatorship	9.0	2.6	2	13	

**Panel B: Descriptive Statistics of Momentum for all Portfolios (Sep. 1990 to Dec. 1999)**

Portfolio	Mean	Standard Deviation	Correlation
Democracy	12.26	23.78	0.94
Pseudo-Democracy	10.76	20.99	
Dictatorship	13.62	18.27	0.93
Pseudo-Dictatorship	12.20	17.17	

**Table II (Continued)**

**Panel C: Descriptive Statistics of Book-to-Market for all Portfolios (Sep. 1990 to Dec. 1999)**

Portfolio	Mean	Standard Deviation	Correlation
Democracy	0.64	0.48	0.96
Pseudo-Democracy	0.61	0.42	
Dictatorship	0.66	0.42	0.95
Pseudo-Dictatorship	0.62	0.39	

**Panel D: Descriptive Statistics of Size for all Portfolios (Sep. 1990 to Dec. 1999)**

Portfolio	Mean	Standard Deviation	Correlation
Democracy	3215.2	9403.0	0.45
Pseudo-Democracy	2799.4	8670.6	
Dictatorship	2892.3	5995.9	0.53
Pseudo-Dictatorship	2294.9	5389.6	

**Table III**  
**Long-Term Returns using Control Firms Matched on Industry, Momentum, Book-to-Market, and Size**

This table presents long-term returns using pseudo-Democracy and pseudo-Dictatorship control portfolios (defined in Table II). Panel A shows the mean monthly returns for the Democracy hedge portfolio (Democracies minus Pseudo-Democracies) and for the Dictatorship hedge portfolio (Dictatorships minus Pseudo-Dictatorships). Time series standard errors from the monthly hedge returns are used to test for significance. Panel B shows the calendar time abnormal returns for the Democracy and Dictatorship portfolios, adjusted for control firms using the methodology of Mitchell and Stafford (2000). Each month, the returns of the Pseudo-Democracy portfolio are subtracted from those of the Democracy portfolio, and the difference is regressed on the four Fama-French-Carhart factors; Dictatorship returns are calculated similarly. *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. *Intercept* or ( $\alpha$ ) measures the abnormal returns to holding any portfolio. Portfolios are rebalanced in September 1990, July 1993, July 1995, and February 1998 when the Investor Responsibility Research Center (IRRC) releases new data. Panel C contains results for a hedge portfolio that takes long positions in Pseudo-Democracies and short positions in Pseudo-Dictatorships. The returns of this hedge portfolio are regressed on the four Fama-French-Carhart factors to estimate alphas. 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 \*\*\* respectively.

**Panel A: Mean Monthly Hedge Returns (Sep. 1990 to Dec. 1999)**

Portfolio	Mean	Standard Deviation	Minimum	Maximum
Democracy - Pseudo-Democracy	-0.12 (t=-0.63) (p=0.531)	2.09	-6.51	4.89
Dictatorship - Pseudo-Dictatorship	-0.21 (t=-0.91) (p=0.365)	2.42	-11.14	6.15

**Panel B: Adjusted Calendar Time Abnormal Returns (Sep. 1990 to Dec. 1999)**

Portfolio	<i>Intercept</i> ( $\alpha$ )	<i>RMRF</i>	<i>SMB</i>	<i>HML</i>	<i>Momentum</i>
Democracy - Pseudo-Democracy	-0.06 (0.22)	-0.01 (0.06)	-0.09 (0.08)	-0.04 (0.09)	-0.06 (0.06)
Dictatorship - Pseudo-Dictatorship	-0.14 (0.25)	-0.03 (0.07)	-0.25*** (0.08)	-0.10 (0.10)	-0.06 (0.06)

**Panel C: Calendar Time Abnormal Returns of the Hedge Portfolio that is Long on Pseudo-Democracies and Short on Pseudo-Dictatorships (Sep. 1990 to Dec. 1999)**

Portfolio	<i>Intercept</i> ( $\alpha$ )	<i>RMRF</i>	<i>SMB</i>	<i>HML</i>	<i>Momentum</i>
Pseudo-Democracy - Pseudo- Dictatorship	0.62** 0.25	-0.07 (0.07)	-0.39*** (0.09)	-0.62*** (0.10)	-0.01 (0.06)

**Table IV**  
**Long-Term Returns Using Control Firms Matched on Momentum, Book-to-Market, and Size**

This table presents long-term adjusted and abnormal returns using pseudo-Democracy and pseudo-Dictatorship control portfolios formed on momentum, book-to-market, and size. To select control firms for Democracy firms, we begin with firms in the IRRC universe with a governance index greater than 5, discard those not within 50% to 150% of the subject Democracy firm's momentum, discard remaining firms not within 70% to 130% of the subject firm's book-to-market, and from the remaining firms we choose the closest size firm. We follow the same process to choose pseudo-Dictatorships, except we begin with the set of IRRC firms with governance index values less than 14. Panel A shows the mean monthly returns for the Democracy hedge portfolio (Democracies minus Pseudo-Democracies) and for the Dictatorship hedge portfolio (Dictatorships minus Pseudo-Dictatorships). Time series standard errors from the monthly hedge returns are used to test for significance. Panel B shows the calendar time abnormal returns for the Democracy and Dictatorship portfolios adjusted for control firms using the methodology of Mitchell and Stafford (2000). Each month, the returns of Pseudo-Democracies are subtracted from those of Democracies and the difference is regressed on the four Fama-French-Carhart factors; Dictatorship returns are calculated similarly. *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. *Intercept* or ( $\alpha$ ) measures the abnormal returns to holding any portfolio. Portfolios are rebalanced in September 1990, July 1993, July 1995, and February 1998 when the Investor Responsibility Research Center (IRRC) releases new data. 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 \*\*\* respectively.

**Panel A: Mean Monthly Hedge Returns (Sep. 1990 to Dec. 1999)**

Portfolio	Mean	Standard Deviation	Minimum	Maximum
Democracy - Pseudo-Democracy	0.32 ( <i>t</i> =1.23) ( <i>p</i> =0.223)	2.75	-5.76	14.12
Dictatorship - Pseudo-Dictatorship	-0.28 ( <i>t</i> =-1.09) ( <i>p</i> =0.279)	2.77	-18.15	5.29

**Panel B: Adjusted Calendar Time Abnormal Returns (Sep. 1990 to Dec. 1999)**

Portfolio	<i>Intercept</i> ( $\alpha$ )	<i>RMRF</i>	<i>SMB</i>	<i>HML</i>	<i>Momentum</i>
Democracy - Pseudo-Democracy	0.32 (0.28)	-0.02 (0.08)	-0.19* (0.10)	-0.19* (0.11)	0.00 (0.07)
Dictatorship - Pseudo-Dictatorship	-0.24 (0.28)	0.09 (0.08)	-0.06 (0.10)	0.20* (0.11)	-0.15** (0.07)

**Table V**  
**Long-Term Returns Using Extreme Control Firms Matched on Industry, Momentum, Book-to-Market, and Size**

This table contains an analysis similar to that in Table III, except that we require the matched pseudo-Democracy firms to have a governance index value of at least ten (they must be at least six in Table III), and require matched pseudo-Dictatorship firms to have a governance index value of no more than nine (they can have a value as high as 13 in Table III). These restrictions accentuate the governance differences between subject and control firms. Panel A contains descriptive statistics for the subject and control samples. Panel B shows the mean monthly returns for the Democracy hedge portfolio (Democracies minus Pseudo-Democracies) and for the Dictatorship hedge portfolio (Dictatorships minus Pseudo-Dictatorships). Time series standard errors from the monthly hedge returns are used to test for significance. Panel C shows the calendar time abnormal returns for the Democracy and Dictatorship portfolios adjusted for control firms using the methodology of Mitchell and Stafford (2000). Each month, the returns of Pseudo-Democracies are subtracted from those of Democracies and the difference is regressed on the four Fama-French-Carhart factors; Dictatorship returns are calculated similarly. *Intercept* or ( $\alpha$ ) measures the abnormal returns to holding any portfolio. 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 Governance Index for all Portfolios (Sep. 1990 to Dec. 1999)**

Portfolio	Mean	Standard Deviation	Minimum	Maximum
Democracy	4.4	0.8	2	5
Pseudo-Democracy	11.7	1.6	10	17
Dictatorship	14.6	0.8	14	18
Pseudo-Dictatorship	7.1	1.6	2	9

**Panel B: Mean Monthly Hedge Returns (Sep. 1990 to Dec. 1999)**

Portfolio	Mean	Standard Deviation	Minimum	Maximum
Democracy - Pseudo-Democracy	-0.33 ( <i>t</i> =-1.16) ( <i>p</i> =0.247)	3.04	-11.31	7.36
Dictatorship - Pseudo-Dictatorship	-0.17 ( <i>t</i> =-0.69) ( <i>p</i> =0.491)	2.64	-9.02	5.39

**Panel C: Adjusted Calendar Time Abnormal Returns (Sep. 1990 to Dec. 1999)**

Portfolio	<i>Intercept</i> ( $\alpha$ )	<i>RMRF</i>	<i>SMB</i>	<i>HML</i>	<i>Momentum</i>
Democracy - Pseudo-Democracy	-0.43 (0.32)	0.07 (0.09)	0.00 (0.11)	0.14 (0.13)	0.02 (0.08)
Dictatorship - Pseudo-Dictatorship	-0.14 (0.27)	-0.01 (0.08)	-0.12 (0.09)	0.15 (0.11)	-0.02 (0.07)

**Table VI**  
**Long-Term Returns Using the Entrenchment Index and Control Firms**  
**Matched on Industry, Momentum, Book-to-Market, and Size**

This table analyzes the long-term 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) (BCF). Firms with BCF entrenchment indices equal to zero are called BCFDemocracies. Firms with BCF entrenchment indices of 5 and 6 are called BCFDictatorships. Control firms for each group are called pseudo-BCFDemocracies and pseudo-BCFDictatorships, respectively. To select control firms for BCFDemocracies, we begin with firms in the IRRC universe that have an entrenchment index greater than zero, discard those not in the same industry, discard those not within 50% to 150% of the subject BCFDemocracy firm's momentum, discard remaining firms not within 70% to 130% of the subject firm's book-to-market, and from the remaining firms we choose the closest size firm. We follow the same process to choose pseudo-BCFDictatorships, except that we begin with the set of IRRC firms with entrenchment index values less than five. Panel A shows descriptive statistics of the entrenchment index for all portfolios. Panel B reproduces the original results in Bebchuk, Cohen, and Ferrell (2004). Panel C replicates their results. Panel D shows the mean monthly returns for the BCFDemocracy hedge portfolio (BCFDemocracies minus pseudo-BCFDemocracies) and for the BCFDictatorship hedge portfolio (BCFDictatorships minus pseudo-BCFDictatorships). Time series standard errors from the monthly hedge returns are used to test for significance. Panel E shows the calendar time abnormal returns for the BCFDemocracy and BCFDictatorship portfolios adjusted for control firms using the methodology of Mitchell and Stafford (2000). Each month, the returns of pseudo-BCFDemocracies are subtracted from those of BCFDemocracies and the difference is regressed on the four Fama-French-Carhart factors; BCFDictatorship returns are calculated similarly. *Intercept* or ( $\alpha$ ) measures the abnormal returns to holding any portfolio. All returns are monthly and 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
BCFDemocracy	0.0	0.0	0	0
Pseudo-BCFDemocracy	2.5	1.1	1	6
BCFDictatorship	5.1	0.3	5	6
Pseudo-BCFDictatorship	2.4	1.2	0	4

**Table VI (Continued)**

**Panel B: Original results of Bebchuk, Cohen, and Ferrell (2004), reproduced from their Table XI (Sept. 1990 – Dec. 1999)**

<u>Governance Portfolio</u>	<i>Intercept (<math>\alpha</math>)</i>
BCFDemocracy-BCFDictatorship	1.16*** (0.284)

**Panel C: Replication of Bebchuk, Cohen, and Ferrell's (2004) results using their method (Sept. 1990 – Dec. 1999)**

<u>Governance Portfolio</u>	<i>Intercept (<math>\alpha</math>)</i>	<i>RMRF</i>	<i>SMB</i>	<i>HML</i>	<i>Momentum</i>
BCFDemocracy-BCFDictatorship	1.20*** (0.271)	-0.18** (0.077)	-0.33*** (0.094)	-0.59*** (0.108)	-0.11 (0.069)
BCFDemocracy	0.50*** (0.120)	0.95*** (0.034)	-0.33*** (0.041)	-0.27*** (0.048)	-0.08** (0.031)
BCFDictatorship	-0.70*** (0.210)	1.12*** (0.060)	0.00 (0.073)	0.31*** (0.084)	0.03 (0.054)

**Panel D: Mean Monthly Haedge Returns (Sep. 1990 to Dec. 1999)**

Portfolio	Mean	Standard Deviation	Minimum	Maximum
BCFDemocracy - Pseudo-BCFDemocracy	0.22 <i>(t=1.12)</i> <i>(p=0.267)</i>	2.09	-5.96	6.98
BCFDictatorship - Pseudo-BCFDictatorship	-0.13 <i>(t=-0.45)</i> <i>(p=0.656)</i>	3.02	-7.77	11.77

**Panel E: Adjusted Calendar Time Abnormal Returns (Sep. 1990 to Dec. 1999)**

Portfolio	<i>Intercept (<math>\alpha</math>)</i>	<i>RMRF</i>	<i>SMB</i>	<i>HML</i>	<i>Momentum</i>
BCFDemocracy - Pseudo-BCFDemocracy	0.24 (0.20)	0.05 (0.06)	-0.12* (0.07)	-0.24*** (0.08)	-0.11** (0.05)
BCFDictatorship - Pseudo-BCFDictatorship	-0.10 (0.31)	-0.06 (0.09)	0.09 (0.11)	-0.27** (0.12)	0.04 (0.08)

**Table VII**  
**Annual Estimates of Tobin's Q Regressions**

The first column reproduces the coefficient on G, the Governance Index, from Gompers, Ishii, and Metrick's (2003) regression of industry-adjusted Tobin's Q on G and control variables in Table VIII of their paper. Their control variables are the natural log of book value of assets, the natural log of firm age as of December of each year, a dummy variable for firms incorporated in Delaware, and a dummy variable for firms in the Standard & Poor's 500 index. The second column presents our replication of GIM's Table VIII results using their method. The third column presents the results obtained with additional controls for momentum (six month returns from May through October of each year), book-to-market (the ratio of book value of equity at the end of December of year t-1 to market value of equity at the beginning of December of each year), and size (the log market value of equity at the beginning of December of each year), and with log of book assets excluded from the set of control variables. The fourth column reproduces the results in Table VIII of Gompers, Ishii, and Metrick (2003), where Tobin's Q values are regressed on a dummy for firms in the Democracy ( $G \leq 5$ ) portfolio. The sample is restricted to firms in the Democracy ( $G \leq 5$ ) and Dictatorship ( $G \geq 14$ ) portfolios only. The fifth column presents our replication of these results. The sixth column presents the results obtained using the same additional control variables as those used in the third column. \* and \*\* indicate significance at the five-percent and one-percent levels respectively.

Year	G Index			Democracy Dummy		
	(1) GIM	(2) Replication	(3) With Controls	(4) GIM	(5) Replication	(6) With Controls
1990	-0.022** (0.008)	-0.022** (0.008)	-0.019** (0.007)	0.186 (0.127)	0.230 (0.132)	0.179 (0.110)
1991	-0.040** (0.012)	-0.037** (0.012)	-0.039** (0.011)	0.302* (0.143)	0.354* (0.146)	0.347** (0.131)
1992	-0.036** (0.010)	-0.038** (0.012)	-0.038** (0.009)	0.340* (0.151)	0.393* (0.154)	0.320* (0.137)
1993	-0.042** (0.011)	-0.044** (0.011)	-0.043** (0.010)	0.485* (0.204)	0.481* (0.204)	0.483** (0.186)
1994	-0.031** (0.009)	-0.031** (0.008)	-0.028** (0.008)	0.335* (0.161)	0.334* (0.161)	0.326* (0.156)
1995	-0.039** (0.011)	-0.033** (0.011)	-0.021* (0.010)	0.435* (0.217)	0.358 (0.223)	0.322 (0.207)
1996	-0.025** (0.011)	-0.022 (0.011)	-0.015 (0.010)	0.299 (0.195)	0.269 (0.202)	0.34 (0.182)
1997	-0.016 (0.013)	-0.014 (0.013)	-0.008 (0.011)	0.21 (0.196)	0.182 (0.201)	0.247 (0.187)
1998	-0.065** (0.020)	-0.059** (0.017)	-0.039** (0.015)	0.203 (0.404)	0.075 (0.401)	-0.149 (0.340)
1999	-0.114** (0.027)	-0.098** (0.024)	-0.050* (0.022)	0.564 (0.602)	0.413 (0.579)	0.157 (0.525)
Mean	-0.043** (0.009)	-0.040** (0.008)	-0.030** (0.004)	0.336** (0.040)	0.309** (0.038)	0.257** (0.054)

**Table VIII**  
**Time Trend Tests of Tobin's Q Regression Estimates**

Panel A shows the results for the coefficient  $\beta_0$  from the following time trend regressions corrected for

serially correlated errors:  $\begin{pmatrix} \beta G_t \\ \beta D_t \end{pmatrix} = \begin{pmatrix} \alpha_{0G} + \beta_{0G} Year_t + \beta'_{0G} \beta G_{t-1} \\ \alpha_{0D} + \beta_{0D} Year_t + \beta'_{0D} \beta D_{t-1} \end{pmatrix}$  where G is the regression

coefficient on the G index each year in the 1990s, from a regression of Tobin's Q on the G index and various controls. D is the regression coefficient on a Democracy dummy each year in the 1990s from a regression of Tobin's Q on the Democracy dummy and various controls.  $Year_t$  corresponds to the calendar year when the Tobin's Q regressions are estimated. The first and fourth columns show the results using the actual coefficients reported by Gompers, Ishii, and Metrick (2003) in their Table VIII. The second and fifth columns show the results using our replicated coefficients reported in columns (2) and (5) of our Table VII. The third and sixth columns show the results using our coefficients estimated with additional controls for momentum (six month returns from May through October of each year), book-to-market (the ratio of book value of equity at the end of December of year t-1 to market value of equity at the beginning of December of each year), and size (the log market value of equity at the beginning of December of each year), and excluding log of book assets as a control variable. Panel B shows the results for the coefficient  $\beta_1$  from the following time dummy regressions corrected for serially correlated error:

$\begin{pmatrix} \beta G_t \\ \beta D_t \end{pmatrix} = \begin{pmatrix} \alpha_{1G} + \beta_{1G} d1999 + \beta'_{1G} \beta G_{t-1} \\ \alpha_{1D} + \beta_{1D} d1999 + \beta'_{1D} \beta D_{t-1} \end{pmatrix}$  where d1999 is a dummy variable equal to unity if the year is

1999 and zero otherwise. Columns and other variables are defined similarly to Panel A. \*, \*\*, and \*\*\* indicate significance at the ten, five, and one percent levels respectively.

**Panel A: Time Trend Regressions**

G Coefficients			Democracy Coefficients		
(1)	(2)	(3)	(4)	(5)	(6)
GIM	Replication	With Controls	GIM	Replication	With Controls
-0.007	-0.006	-0.001	0.010	-0.012	-0.026
(0.006)	(0.005)	(0.002)	(0.017)	(0.015)	(0.019)
( <i>t</i> =-1.29)	( <i>t</i> =-1.24)	( <i>t</i> =-0.56)	( <i>t</i> =0.62)	( <i>t</i> =-0.74)	( <i>t</i> =-1.37)
( <i>p</i> =0.236)	( <i>p</i> =0.252)	( <i>p</i> =0.584)	( <i>p</i> =0.554)	( <i>p</i> =0.479)	( <i>p</i> =0.210)

**Panel B: 1999 Dummy Regressions**

G Coefficients			Democracy Coefficients		
(1)	(2)	(3)	(4)	(5)	(6)
GIM	Replication	With Controls	GIM	Replication	With Controls
-0.101***	-0.074***	-0.019	0.304**	0.289*	0.104
(0.021)	(0.021)	(0.015)	(0.115)	(0.126)	(0.344)
( <i>t</i> =-4.85)	( <i>t</i> =-3.60)	( <i>t</i> =-1.33)	( <i>t</i> =2.64)	( <i>t</i> =2.29)	( <i>t</i> =0.30)
( <i>p</i> =0.002)	( <i>p</i> =0.009)	( <i>p</i> =0.224)	( <i>p</i> =0.033)	( <i>p</i> =0.056)	( <i>p</i> =0.771)