

**Does weak governance cause weak stock returns?
An examination of firm operating performance
and analysts' expectations**

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ABSTRACT

This paper builds on Gompers, Ishii and Metrick (GIM, 2003), and investigates whether weak corporate governance causes poor long-run stock returns. GIM find significant stock market underperformance for firms with weak shareholder rights. If these poor returns are caused by the market being surprised by large agency costs, we expect that the market will be surprised by poor operating performance. We find that firms with weak shareholder rights show significant underperformance in operating returns. However, we find no evidence that this underperformance surprises the market: Analysts have unbiased forecasts of the performance of weak governance firms for short, medium and long term forecast horizons. Moreover, we document that the stock return differential reverses in the period after the initial sample period. Overall, our results do not support the hypothesis that weak governance causes poor stock returns.

Whether corporate governance affects firm performance is a matter of much study and much debate. In an important and widely-cited recent paper, Gompers, Ishii and Metrick (GIM, 2003) find for the period 1990 to 1999 that firms with strong shareholder rights have future risk-adjusted stock returns that are 8.5% per year higher than those of firms with weak shareholder rights. A puzzling feature of the paper is that the authors find persistent stock market underperformance for firms with weak shareholder rights, but they do not find significant underperformance in firm operating performance, which they measure with accounting returns on equity.¹ This lack of operating underperformance is surprising given the magnitude of the underperformance in stock returns. It is also surprising in that although one might expect poor operating performance in badly-governed firms, so long as the market anticipates the poor operating performance, one expects no relation between governance and future stock returns (Core, Holthausen and Larcker, 1999).

GIM offer two explanations for the association between governance and stock returns. One explanation is that better governance causes higher returns. The second explanation is that governance is associated with other factors that drive stock returns during the 1990s. The causal explanation requires that investors did not fully anticipate the extent of the agency costs (e.g., managerial shirking and perquisites consumption) caused by weak shareholder rights. Subsequent to the realization of the agency costs as manifested by lower profits, investors lower their expectations for the firm's future earnings resulting in a stock price decline. This explanation implies that one should observe operating underperformance as well as the market

¹ They do find evidence that firms with weak governance have lower sales growth and lower profits as a percent of sales. These measures, however, can reflect differences in firms' life cycles, product mix, and financing choices, and so are not necessarily indicative of differences in overall operating performance. For example, low profits as a percent of sales will lead to a large return on equity for a firm that has high sales relative to invested capital, and sales growth is only valuable when it is profitable (see Palepu, Healy, and Bernard, 2000, pages 9-4 to 9-5 and pages 12-6 to 12-7).

being surprised by this underperformance. As noted above, however, GIM do not find strong evidence of differential operating performance. The alternative explanation is that the observed differential return performance is due to risk or other unidentified factors that are correlated with corporate governance. In this case, there need not be any relation between shareholder rights and operating performance.

The purpose of this paper is to distinguish between these two competing explanations. We first use a more powerful measure of operating performance suggested by Barber and Lyon (1996), and test for an association between governance and operating performance. We follow GIM and measure governance using the index of shareholder rights (“the G-index”) created by GIM. The G-index is obtained by adding up the number of restrictions on shareholder rights. A higher G-index means lower shareholder rights and is expected to mean lower governance quality. We find that the G-index is significantly negatively associated with future operating performance, as measured by industry-adjusted return on assets. This result complements evidence in GIM and Fahlenbrach (2003) that firms with higher G-indices have higher agency costs.

We turn next to the question of whether investors expected this difference in operating performance. If the stock market underperformance of high G-index firms is *caused* by weak governance, we expect to find that investors failed to anticipate the lower operating performance for high G-index firms. If we find, however, that investors expected the accounting underperformance for high G-index firms, one would be inclined to consider other explanations for the differential stock market performance. We use analysts’ forecasts of future earnings as our proxy for investors’ expectations. If analysts are overly optimistic about the prospects of high G-index firms, one expects a negative relation between analysts’ forecast errors and G-

index. In other words, one expects actual earnings to be low (high) relative to forecasted earnings when corporate governance is weak (strong). We do not find this hypothesized relation. It appears that analysts are unbiased in their assessment of the implications of shareholder rights for future performance, and this result holds when we examine quarterly forecasts, annual forecasts, or long-term forecasts. We also show that these forecast error results hold for the abnormal stock returns recently documented by Cremers and Nair (2003) for firms with a combination of strong shareholder rights and high institutional ownership. Therefore, under the assumption that investors' earnings forecasts are at least as informed as analysts' forecasts, our evidence is inconsistent with the hypothesis that governance causes future abnormal stock returns.

Because our evidence is not consistent with a causal relation between governance and returns, we examine two alternative explanations for this relation. The first is a risk explanation, specifically, that the strength of shareholder rights is correlated with risk and expected returns, and firms with weak shareholder rights happen to be firms with low risk and low expected returns. We find that firms with weak shareholder rights do appear to have lower expected returns; however, the difference is not large enough to fully explain the difference in realized returns.

A second alternative explanation, noted in GIM (p. 131), is that the return differences result from a time-period specific irregularity that is correlated with governance. To investigate this possibility, we examine accounting returns, forecast errors, and stock returns in the three years (2000-2002) following the GIM sample. Weak governance firms continue to have lower operating performance during this period, but analysts continue to forecast this difference. With respect to stock returns, we find that the returns to good governance in the GIM sample period

exhibit a substantial reversal in the immediately following years; that is, high G-index firms outperform low G-index firms. The results in the original sample period are also sensitive to the exclusion of technology firms. These results raise the possibility that the shareholder rights anomaly is part of the larger new economy pricing anomaly of the (late) 1990s.

In summary, we find that weak governance firms have low operating performance. This finding helps validate the G-index as a measure of agency costs. Second, our results suggest that sell-side analysts understand the implications of weak governance for operating performance. In contrast to much literature that claims that analysts' expectations can be biased (for a summary of this literature, see Basu and Markov, 2003), our results suggest that analysts have unbiased assessments of the effect of a complicated phenomenon, corporate governance, on firm performance. Finally, our evidence suggests that there is no causal relation between corporate governance and long-run stock returns. We conclude the paper by showing how our approach can be used to evaluate other governance anomalies, such as Cremers and Nair (2003).

The remainder of the paper is organized as follows. In Section I, we describe our hypotheses. We describe the data in Section II, present the results of our empirical tests in Section III, and conclude in Section IV.

I. Hypothesis development

A. Shareholder rights and accounting returns

Shareholder rights can have several conflicting effects on a firm's operating performance. On the one hand, weak shareholder rights reduce the probability of takeover and other forms of investor activism and hence inhibit the removal of incompetent management. Moreover, reduced

capital market scrutiny might induce otherwise competent managers to engage in value reducing activities like shirking, perquisite consumption and empire building. This argument suggests that weak investor rights can lead to lower operating performance. On the other hand, weak shareholder rights might enhance performance because managers behave in a less risk averse manner when shielded from the consequences of lower-tail outcomes of good projects. An optimal contract may involve shareholders committing themselves not to replace the manager, through restrictions on their rights. Similarly, according to Stein (1988), takeover protection can be optimal because it reduces managerial “myopia,” that is, the need to signal quality by boosting short term earnings at the expense of long term value. Also, strong shareholder rights might encourage managers to invest (sub-optimally) in areas where they have specific expertise to make it harder to replace them. Weak shareholder rights might then give them enough job security so that they will not over-invest in these types of projects (Shleifer and Vishny, 1989). The net effect of shareholder rights on operating performance is thus an empirical question. The hypothesis stated in null form is:

Hypothesis 1: Shareholder rights are not associated with future operating performance.

B. Tests of investors’ expectations about the performance implications of shareholder rights

One explanation for the apparent stock market underperformance of firms with high G-indices as documented by GIM is a stock market underreaction to information about weak shareholder rights. In this case, however, it is not sufficient to find differences in operating performance. It is also important that the differences in operating performance were unexpected by investors.

We use sell-side analysts' earnings forecasts to test whether investors fail to anticipate future differences in operating performance between firms with strong and weak shareholder rights. We expect that investors' expectations about future earnings that are impounded in stock price are at least as sophisticated as the expectations of analysts. Analysts' forecasts have been shown to be more accurate than time-series models (e.g., O'Brien, 1988), and are a better proxy for the market's expectations of earnings than time-series models (e.g., Brown, Griffin, Hagerman and Zmijewski, 1987). Prior literature uses analysts' forecast errors as a proxy for investors' earnings expectations to distinguish between: (1) stock returns that are anomalous due to market mis-pricing (e.g., the market has biased expectations about future earnings), and (2) stock returns that are due to differences in expected returns. For example, Abarbanell and Bernard (1992), Bradshaw, Richardson and Sloan (2001), and Teoh and Wong (2002) find patterns in analysts' forecast errors that are consistent with anomalous patterns in returns. These findings of negative (positive) returns following optimistic (pessimistic) forecast errors favor a causal explanation for the anomalies they study: The forecast errors suggest that the market did not correctly understand the implications of current information for future performance. In contrast, Doukas, Kim and Pantzalis (2002) find that value firms do not have more pessimistic forecast errors than growth firms, and interpret their results as providing no support for the hypothesis that value firms have higher stock returns because investors underestimate the future earnings of these firms.

We follow these prior studies and examine forecast errors to determine whether apparently anomalous returns are caused by mis-pricing. In Hypothesis 1, we predict that firms with weak governance will exhibit weak operating performance. If investors do not fully understand this implication of shareholder rights for future operating performance, shareholder

rights and forecast errors will be correlated. Specifically, under a hypothesis that future return differences are caused by unexpected operating performance, we expect that firms with weak shareholder rights will have relatively more optimistic earnings forecasts than firms with strong shareholder rights. In other words, we expect actual earnings to be low (high) relative to forecasted earnings when corporate governance is weak (strong). In this case, we would conclude that poor governance is the root cause of the anomalous stock returns documented by GIM. In contrast, if analysts understand the relation between shareholder rights and operating performance, we do not expect to see any relation between shareholder rights and forecast errors. Such a finding would suggest that the anomalous stock returns documented by GIM are likely due to factors such as differences in risk or a time-period specific phenomenon.

The effect of a firm's governance structure in general, and shareholder rights in particular, can show up in short term profits, long term profits, or both. Ex ante it is not immediately clear at which horizon systematic errors in expectations would be most likely, because it is not known when the effect on performance is fully incorporated in the expectations. Rather than arbitrarily picking one forecast horizon, we examine forecasts of annual earnings per share one year ahead and two years ahead, and forecasts of long-term growth in earnings per share. This ensures that when errors in expectations exist, they will be detected. The hypothesis stated in null form is:

Hypothesis 2: Shareholder rights are not associated with analysts' forecast errors.

II. Data and descriptive statistics

The initial sample consists of all firms that have a G-index, and is the sample from GIM. GIM construct the G-index based on the Investor Responsibility Research Center (IRRC)

surveys of investor rights and takeover protection. A firm's G-index is equal to the number of provisions restricting shareholder rights that the firm has. Restrictions can either arise from state law or from charter provisions. There are 24 provisions. Some common examples include: poison pills, golden parachutes, supermajority requirements and classified boards. During the 1990s there have been four editions (1990, 1993, 1995 and 1998) of these surveys of shareholder rights and takeover defenses. As described in GIM, the IRRC universe contains large companies from the S&P 500 and from annual lists of the largest corporations by Fortune, Forbes and BusinessWeek. The IRRC expanded the sample in 1998 to include smaller firms and firms with high levels of institutional ownership.

Since the editions are not issued every year, we use the data for multiple years. For example, the G-index of 1990 is used for all time periods after publication of the 1990 edition until the G-index of the 1993 edition becomes available, and so on. This considerably enlarges the sample, since there is no need to skip years. The same procedure is used in GIM. This does introduce noise in the measurement of G-index, but given the relative stability of G-index over time, GIM claim that the noise is likely to be relatively minor. The sample is further restricted to firms that have accounting data, stock return data and analysts' forecasts available. Compustat is used for the accounting data, CRSP for stock returns, and I/B/E/S consensus forecasts for analysts' forecast data. The data requirements reduce the sample size by about a fifth. G-index is available for 12,584 firm years. Data unavailability on I/B/E/S and Compustat drops the sample to 9,917 firm years.

The descriptive statistics are shown in Table I, panel A. First, G-index shows a considerable amount of cross-sectional variation. The lowest score is 2, meaning a firm with only two restrictions on shareholder rights. The firm with the most restrictions has 17 such provisions.

The sample is fairly equally distributed over the G-index portfolios. Firms in the sample are quite large with mean (median) total assets of about 9 billion (1.75 billion) dollars. The sample firms are generally more profitable than other firms in their industry, as shown by their positive mean and median industry-adjusted operating performance. We use operating return on assets (ROA) as our measure operating performance (described in greater detail in Section III.A.), and following GIM, we industry-adjust ROA by subtracting the ROA of the median firm in the corresponding Fama-French (1997) industry. The median is computed using full sample of firms that have both CRSP and Compustat data. Descriptive statistics on analysts' forecasts indicate that the firms underperform the analysts' average annual, two-year and long-term forecasts. However, there is little median bias in these forecasts. Our finding of an optimistic bias in the mean forecast, but not in the median, is consistent with the findings of prior literature (for a summary, see Basu and Markov, 2003).

Panel B of Table I provides Pearson correlations between the G-index and firm characteristics. It is possible that the relation between performance and G-index only holds for a more extreme number of restrictions on shareholder rights, especially if there are synergies between various measures of shareholder rights. Following GIM we therefore also separately analyze the extreme portfolios in our tests. Using GIM's terminology, we refer to the portfolio with the strongest shareholder rights ($G \leq 5$) as the "Democracy" portfolio, and refer to the portfolio with the weakest shareholder rights ($G \geq 14$) as the "Dictatorship" portfolio. The terms refer to the distribution of decision rights (dispersed versus concentrated). Panel B thus also contains the means and standard deviation of each variable for the "Democracy" firms and the "Dictatorship" firms and the difference between the two groups. From this it can be seen that the firms with strong shareholder rights tend to be smaller, more highly valued, and more profitable

than firms with weak shareholder rights. Firms with strong shareholder rights have on average fewer analysts, who issue more optimistic and more dispersed forecasts.

III. Research design and Results

A. *Operating performance*

To assess the effect of shareholder rights on firm performance, we regress measures of future operating performance (measured at time t) on G-index and control variables (measured at time $t-1$). We use the following model for the tests:

$$\text{Industry-adjusted } ROA_{it} = \alpha + \beta_1 G\text{-index}_{i, t-1} + \beta_2 \log MVE_{i, t-1} + \beta_3 \log BME_{i, t-1} \quad (1a)$$

We interpret a significantly positive or negative estimate of β_1 as evidence of an association between the strength of shareholder rights and operating performance. To establish a stronger causal link, we would ideally conduct tests of the relation between change in the G-index and subsequent changes in operating performance. However, as noted in GIM, the G-index does not change often, and as such we follow GIM and use a levels approach.

Our measure of operating performance is operating return on assets. Operating return is a preferred measure of operating performance because it is not affected by leverage, extraordinary items and other discretionary items (see Barber and Lyon, 1996, pp. 361-364 for discussion). Return on assets also has more desirable distributional properties than return on equity (e.g., total assets are strictly positive but equity can be zero or negative), another common measure of operating performance, which is used by GIM. We measure ROA as operating income divided by year-end total assets. Operating income is sales minus cost of goods sold and selling, general and administrative expenses. We use two measures of operating income: operating income before depreciation (Compustat data item 13) and operating income after depreciation

(Compustat data item 178). Barber and Lyon (1997) advocate operating income before depreciation because this measure is not affected by managerial discretion in depreciation policy. However, to the extent that differences in firms' performance are due to differences in capital expenditures, excluding depreciation expense will result in an ROA measure that excludes an important component of firms' performance. GIM document larger capital expenditures by weak governance firms, and suggest that this difference may be over-investment that leads to poor performance. Therefore, although we use both measures, we prefer the use of operating income after depreciation.²

We follow GIM (2003, p.129) and include book-to-market as a control variable. In addition, we control for firm size with the logarithm of market value of equity. These variables have been shown to be correlated with profitability, e.g., Fama and French (1995), and are also correlated with shareholder rights. We recognize that these variables are not predetermined with respect to G-index, that is, typically the components of G-index are known to the market at the same time that our control variables are measured (t-1 in our tests). Given that these control variables are correlated with expected performance, if the market takes G-index into account in pricing the stock, then the control variables could subsume the effect of G-index. We therefore also show the results with and without control variables. We follow GIM (2003, p.129), and perform tests using median regressions, also known as least absolute deviations regression, to reduce the influence of extreme observations.³ Accordingly, although we have some outliers in our sample (see Table I), they do not affect the results. Given that the extreme observations are in the dependent variables, truncation or winsorizing of extreme values is not a good alternative (Kothari, Sabino and Zack, 1999). To mitigate the influence of cross-sectional dependence, we

² A second drawback of operating income before depreciation is that it is not available for some firms, mainly in the financial services industry.

³ Our results for these and other tests are qualitatively similar when using regular OLS regressions.

the regressions are estimated by year, and report mean coefficients and t-statistics based on the standard errors of these annual coefficients.

It is possible that the relation between performance and G-index only holds for a more extreme number of restrictions on shareholder rights, especially if there are synergies between various measures of shareholder rights. We therefore also run the regression with a smaller sample, where the sample is restricted to the two most extreme portfolios. The model is:

$$\text{Industry-adjusted } ROA_{it} = \alpha + \beta_1 \text{Dict}_{i,t-1} + \beta_2 \log MVE_{i,t-1} + \beta_3 \log BME_{i,t-1} \quad (1b)$$

Dict is a dichotomous variable that takes the value 1 if the firm is in the decile with the weakest shareholder rights (G-index greater or equal to 14), the dictatorship firms, and 0 if the firm is in the decile with the strongest shareholder rights (G-index less than or equal to 5), the democracy firms. Consistent with our prediction on G-index in Regression (1a), we predict that the coefficient on Dict is negative in Regression (1b).⁴

The regression results displayed in Table II are broadly consistent with the prediction that weak shareholder rights lead to poor operating performance. Panel A shows the results for the full sample, and Panel B shows results for the restricted sample that compares Dictator firms with Democracy firms. Sub-panels A1 and B1 show results using operating income after depreciation, and Sub-panels A2 and B2 show results using operating income before depreciation. The first column of each sub-panel shows results without controls. The coefficients on G-index are in the predicted negative direction, but are only marginally significant at the pooled level, and not significant using the Fama-MacBeth procedure. These results are consistent with the Pearson correlations shown in Table I but not as strong. Results without controls in Panel B using the restricted sample are also consistent with predictions, and

⁴ GIM employ a Democracy dummy, which is equal to 1 - Dict. We use Dict so that the sign of the coefficient prediction is negative for both G-index and Dict.

are somewhat stronger than in Panel A. The coefficients on Dict are negative in both sub-panels and are significant in Sub-panel B1 using operating income after depreciation.

The second column and third column of each sub-panel show the effect of including book to market (the specification in GIM), and book to market and market value of equity, respectively, as control variables. Now, the results for the full sample in Sub-panels A1 and A2 provide strong support for the hypothesis that firms with weak shareholder rights have poorer operating performance. The results with controls in the restricted sample in Panel B are consistent with the results in Panel A, but have lower significance levels. The association between weak shareholder rights and poor operating performance is stronger in Sub-panel B1 using income after depreciation than in Sub-panel B2 using income before depreciation. However, as noted above, we consider income after depreciation to be a superior measure of operating performance for this application because it captures the income effects of capital expenditures. In summary, in comparison to GIM who find no significant relation between shareholder rights and operating performance measured as ROE, we find evidence of lower operating performance (measured as operating ROA) for firms with weak shareholder rights.

B. Analysts' forecasts

In the prior section we provide evidence consistent with Hypothesis 1 that firms with weak investor rights have lower subsequent operating performance. This evidence suggests that weak governance is costly to the firm because it lowers operating performance. However, to show that differences in governance cause future stock return differences, one must establish that this differential operating performance was unexpected by investors. That is, if investors expect operating performance to be similar across firms with weak and strong shareholder rights, they

will be surprised when firms with strong shareholder rights have greater operating performance, and stock returns will be greater for firms with strong shareholder rights. To investigate whether the earnings realizations surprise the investors, we examine analysts' forecast errors.

Earnings forecasts by sell-side analysts are the most widely available measures of expected operating performance. We use analysts' forecasts to proxy for investors' earnings expectations. To examine whether analysts understand the impact of shareholder rights on the firms' earnings, we regress forecast errors on the G-index and control variables. Similar to our model for operating performance above, we use the following model:

$$\text{Analysts' forecast error}_{it} = \alpha + \beta_1 G\text{-index}_{i,t-1} + \beta_2 \log MVE_{i,t-1} + \beta_3 \log BME_{i,t-1} \quad (2a)$$

We measure the forecast error as the difference between the I/B/E/S actual annual earnings per share and the mean I/B/E/S consensus forecast of annual earnings per share, measured eight months before the earnings period being forecasted. Because the vast majority of annual reports are filed within three months after the fiscal year end, the timing of our variable measurement ensures that analysts know prior year earnings when making forecasts. This time period is also consistent with Doukas et al. (2000). Similarly, for two-years-ahead earnings, we measure the consensus forecast one year and eight months before the earnings period being forecasted. To control for heteroskedasticity, we deflate the forecast errors by lagged price and total assets per share, and report results for both measures. Consistent with our earlier tests, we include market value of equity and book to market equity as control variables. Prior research (e.g. Richardson, Teoh and Wysocki, 2001) finds that these variables explain variation in forecast errors. We obtain the same inference if we do not include these two control variables.

We obtain analysts' forecasts of long-term growth in earnings from I/B/E/S. In general, these forecasts refer to a period of five years (I/B/E/S Glossary, 2000). Consistent with Dechow,

Hutton and Sloan (2000), we use the median forecast as our measure of the consensus forecast of long-term growth in earnings. To measure actual long-term growth in earnings, we use the five-year realized growth in earnings per share provided by I/B/E/S. The computation of this annualized growth rate is described in Dechow and Sloan (1997, p. 9) and in the I/B/E/S Glossary (2000). The forecast error is the difference between actual and expected long-term growth, and because the measure is already expressed as a percentage, we do not deflate it.

We also estimate the regressions on the restricted sample using democracy firms ($G \leq 5$) and dictatorship firms ($G \geq 14$) only:

$$\text{Analysts' forecast error}_{it} = \alpha + \beta_1 \text{Dict}_{i,t-1} + \beta_2 \log MVE_{i,t-1} + \beta_3 \log BME_{i,t-1} \quad (2b)$$

The variables are as defined above. If the causality hypothesis is correct, we expect to find negative coefficients on G-index and on Dict in Regressions (2a) and (2b), respectively.

The one-year forecast error estimates of Regressions (2a) and (2b) are reported in Table III. The results do not support the causality story in Hypothesis 2. The pooled and mean annual coefficients on both G-index and Dict are positive (and significant in the latter case), which is opposite to the predicted sign. These results suggest that analysts are aware of the negative effects of weak investor rights on operating performance, and if anything, seem to exaggerate the effect, meaning they are actually somewhat pessimistic about the high G-index firms compared to the low G-index firms. In other words, on a relative basis the high G firms tend to generate *positive* earnings surprises. This finding is inconsistent with the hypothesis that excess relative stock returns for low G-index firms are caused by investors misunderstanding the implications of governance for performance and therefore being subsequently surprised by low G-index firms' stronger operating performance. The one-year forecast results are confirmed in Tables IV and V, where we examine forecast errors for two-year ahead earnings and long-term growth,

respectively. In both Tables, the coefficients on G-index and Dict are positive and opposite the predicted sign under the causality hypothesis. However, in most cases, the coefficients are insignificant and consistent with analysts issuing forecasts that are unbiased with respect to G-index. We note that we also obtain very similar results when we examine forecasts of quarterly data earnings performance (untabulated). Thus, the results are consistent over the entire forecasting horizon, from quarterly forecasts to long-term forecasts.⁵

C. Robustness of analyst forecast results

In this section, we explore the influence on our results of two potentially confounding issues, mergers and acquisitions and earnings management.

C.I. Mergers and acquisitions

In our tests on operating performance and analysts' forecast errors, the maintained assumption is that if bad corporate governance leads managers to make bad decisions, the effects should ultimately show up in lower accounting earnings and negative forecast errors. When the market is surprised by the bad decision, stock prices fall. A potential concern is that if the bad decisions mainly come in the form of bad acquisitions, bad acquisitions could lower the stock price, but could lead to increases in accounting earnings and to positive forecast errors. This concern arises from the peculiarities of acquisition accounting, particularly the "pooling" method of accounting, which can cause short-term earnings increases even when the acquirer has overpaid for the acquisition target.

⁵ An alternative method of examining whether the market is surprised is to look at returns around earnings announcements (e.g. Bernard and Thomas, 1990; Bernard, Thomas and Wahlen, 1997; La Porta, Lakonishok, Shleifer and Vishny, 1997). In untabulated tests, we examine returns around earnings announcements for our sample. Consistent with the monthly return results, we find that the "Democracy" firms exhibit a significantly higher return than the "Dictatorship" firms. However, this return difference at the earnings announcement is not significantly different from the positive return difference over the remainder of the month. These findings are consistent with our analyst forecast results that the market is not surprised by the differential operating performance.

At an extreme, all of the bad returns for bad governance firms could occur around acquisitions, yet we could find positive earnings surprises after these firms made acquisitions. These spurious positive forecast errors would bias our forecast error tests. This is a particular concern because GIM find that high G-index firms are more likely to engage in acquisitions, and prior literature finds both negative announcement effects around acquisitions and post acquisition stock price underperformance.

To mitigate the concern that this explanation influences our results, we examine stock returns and forecast errors for periods in which the sample firms did not engage in acquisitions. We begin by gathering acquisition announcement dates from the SDC mergers and acquisitions database. We then re-run the stock return tests in GIM, but after excluding returns for windows of varying length around the acquisition announcements. When excluding the five months centered on the announcement, the excess return differential between dictator and democracy firms remains significant at 6.6% per year, compared to 8.3% over the full sample period. Using an even more conservative window that excludes the fourteen-month period starting two months before the acquisition through the eleventh month after the acquisition, we find that the excess return differential is 7.1% (an examination of raw stock returns yields similar results). These results indicate that mergers and acquisitions do not account for the majority of the stock return differential between the dictator and democracy firms.

To complete the analysis, we re-run the forecast error tests in Tables III, IV, and V, and exclude forecasts made for periods in which acquisitions occurred. The results of these tests are very similar to those shown in the Tables. Inconsistent with the hypothesis that the performance effects of governance are unanticipated, the coefficients on G-index and Dict remain positive or insignificant. Overall, this robustness analysis indicates that firms not engaging in acquisitions

yield results similar to the full sample of firms, and suggest that our inference is not biased by acquisitions and acquisition accounting.

C.2. Earnings management

To this point, we assume that analysts' forecasts and firms' reported earnings are not opportunistically managed. Recent literature questions both assumptions. Some papers claim that managers bias earnings to meet the expectations of the market, that is, they try to meet-or-beat the forecast, e.g., Abarbanell and Lehavy (2002). Other papers discuss the guidance of analysts towards desired forecasts of earnings that can subsequently be beaten. Richardson, Teoh and Wysocki (2001) examine the process that firms use to guide analysts toward a forecast that is "beatable," and whether these actions are related to subsequent equity issuances. It is conceivable that either of these two phenomena is related to firms' shareholder rights and could potentially influence our results. For example, if firm with weak shareholder rights are more likely to engage in this type of earnings management, then one might expect those firms to have more positive forecast errors. However, in practice, Bowen, Rajgopal and Venkatachalam (2002) find that G-index is not related to measures of earnings management. In addition, while this "earnings game" might influence errors in forecasts made shortly before the earnings announcement, it is unlikely that it will affect forecast errors consistently over all the forecast horizons examined. In other words, management cannot consistently generate positive forecast errors over a long horizon: To do so, management would have to simultaneously manage earnings to meet the last consensus forecast, the forecast a year ago, two years ago and five years ago, or management would have to manage expectations in very complex ways many years in advance. Earnings management is thus an unlikely candidate to explain our forecast error results.

D. Cost of capital

An alternative to the causality explanation is that the strength of shareholder rights is correlated with risk and expected returns, and firms with weak shareholder rights happen to be firms with low risk and low expected returns. For example, low-growth, low-risk firms may have weak shareholder rights. In this case, the observed difference in realized returns reflects a difference in expected rates of return and is not evidence of mispricing. Note that we do not argue that the difference in risk is caused by the difference in shareholder rights, in which case one might expect the opposite relation, just that the risk factor is correlated with shareholder rights.

Prior literature has shown that it is difficult to obtain precise estimates of the cost of capital (e.g. Fama and French, 1997; Guay, Kothari and Shu, 2003). In our tests, we use recently developed accounting based cost of capital measures, in particular the models developed by Gebhardt, Lee and Swaminathan (2001) and by Claus and Thomas (2001). Similar to the prior tests, we regress each of the cost of capital estimates on G-index (Dict) and market value of equity and book to market. The results of the cost of capital analysis (not tabulated) are consistent with the risk-based explanation. That is, the firms with weak investor rights have the lowest accounting based cost of capital and also the lowest ex-post realized returns. The result is consistent across the two methods of estimating the cost of capital and is found in both the full and the restricted sample. However, the effect is too small to explain the return differential between dictator and democracy firms found in GIM: the highest estimated differential in expected returns between the extreme portfolios is only 0.7% per year (using the Gebhardt et al. measure). This difference in expected returns is far less than the difference in realized returns, but is about the same as the difference in expected returns that GIM document when they risk-adjust using four-factor time-series regressions. While risk can explain part of the results, it does

not seem to provide the whole picture. Alternatively, our proxies of cost of capital could be too noisy to pick up the real cost of capital effect.

E. Further discussion of results

Our analysis yields little evidence supporting the hypothesis that corporate governance causes the differential future returns found in GIM. The results do suggest that weak shareholder rights are associated with lower operating performance. However, we find that analysts do not under-react to shareholder rights when making earnings forecasts. The results are consistent with analysts forming rational and unbiased expectations of earnings. If there is a bias, it is that the analysts are too pessimistic about the weak investor rights firms. Accounting based cost of capital estimates indicate that firms with weak shareholder rights have lower cost of capital. Although this result confirms evidence in GIM that there are risk differences between the firms, like GIM, the effects we find are too small to explain the differences in stock returns.

One explanation that is consistent with our combined results is that analysts understand the impact of governance on firm performance, but the market does not. Analysts correctly foresee the lower operating performance of firms with weak investor rights and set their forecasts accordingly. Investors' earnings forecasts, however, may be temporarily more naïve than the analysts' forecasts and stock prices do not reflect the differential operating performance for weak and strong governance firms. Eventually, investors do adjust their expectations and the stock price drops for weak governance firms relative to strong governance firms. This story solves some of the problems of the original under-reaction hypothesis, namely by explaining why the analysts' forecasts are not optimistic for weak shareholder right firms relative to strong shareholder rights firms. However, this explanation is less than satisfactory because most existing empirical evidence suggests that the market as a whole is more, not less sophisticated,

than sell-side analysts. More importantly, such a modified underreaction story makes the main puzzle of the underreaction hypothesis even larger; that is, why does it take investors so much longer than analysts to figure out the performance implications of shareholder rights?

F. Stock returns after the initial period

Because our evidence does not support a causal relation between governance and stock returns, and because risk differences are too small to explain the return differentials, a final explanation is that the return differentials result from a period-specific factor that just happens to be correlated with governance. This explanation is speculative.

We explore whether the GIM result is potentially time-period specific by looking at the returns to the strategy in the three years immediately after the original sample period (2000-2002). The results are displayed in Table VI. Panel A shows the value of a hedge portfolio that takes a short position of \$1 in the dictatorship portfolio and invests it in the democracy portfolio on September 1, 1990. At the end of the original sample period, December 31, 1999, this hedge portfolio has grown from \$0 to \$3.62. However, in the subsequent three years ending December 31, 2002, there is a sharp decline in the value of the hedge portfolio, mainly because of the poor performance of the democracy portfolio. The second part of Panel A shows the annualized returns in the two sub periods (1990-1999 and 2000-2002) and for the whole period (1990-2002). Weak shareholder rights firms outperform strong shareholder rights firms by about one percent per month in raw returns over the three years immediately following the original sample period (2000-2002). This drastically reduces the out-performance of the democracy portfolio for the 1990-2002 period compared to the original 1990-1999 period.⁶

⁶ For these tests we use the 1998 data on G-indices for the later periods instead of utilizing the new data that became available in 2000 and 2002. Using the 1998 fits the notion that the stock market performance of a particular set of firm reverses. However, if we examine performance using the updated data on G-index, we find similar results.

In panel B of Table VI, we show stock return results after controlling for the Fama French three factor model plus momentum (consistent with GIM, Table VI). We first show the results from GIM followed by our replication over the same period, which is very similar. Next is the analysis of the three years after the initial sample period (2000-2002). Controlling for the four factors substantially reduces the reversal effect. Further analysis reveals this is largely due to the strong loading of the hedge portfolio return on the market factor. While in the original sample period the hedge portfolio return is unrelated to the market factor, it is strongly positively related to the market factor in the 2000-2002 period. This is consistent with a longer period of gradual mispricing followed by a shorter period of sharp simultaneous reversal, that is, it is consistent with a bubble. A caveat to this analysis is that these reversals are not statistically significant, possibly due to the limited time series observations. However, adding these three years to the original sample reduces the observed abnormal returns by over one third and reduces their significance for the 1990-2002 period. While the annualized excess returns to the strategy exceed 8.5% per year from 1990-1999, they fall to about 5% a year over the extended period 1990-2002.⁷

To ensure that the return reversal is not driven by unexpected changes in operating performance, we re-do our analysis in Tables II to V to include the years 2000 to 2002 (not tabulated). We find that weak governance firms continue to have lower operating performance during this latter 2000-2002 period, and that analysts continue to forecast this difference.

The results on the return reversal are surprising in light of claims that in the last few years we have witnessed a “governance crisis.” In that case one would expect well-governed firms to outperform poorly governed firms as investors realize the importance of good governance. This

⁷ There is a suggestion of this finding in Cremers and Nair (2003): they modify the GIM sample to exclude ADRs and extend this sample to the end of 2001, and find that excess returns fall from 8.5% to 7.5%.

thus raises doubts about whether the observed stock returns are caused by governance characteristics or by some other factors. Given the pattern and timing of the stock returns, an obvious candidate to consider here is the influence of the “new economy.” In untabulated tests, we follow Anderson and Reeb (2003) and exclude firms with two digit SIC codes of 35 (Industrial machinery and equipment), 36 (Electronic and other electrical equipment), 38 (Instruments and related products), and 73 (Business Services). We acknowledge that this is a rather crude approximation of “new economy” firms, e.g., Amazon is classified as a retail firm and hence not excluded. Excluding these firms from the sample drops the monthly hedge returns to 0.44% ($t = 1.74$) over the original sample period (1990-1999), and 0.28% ($t = 1.21$) over the full period (1990-2002). When excluding the sample of Internet firms identified in Hand (2000), a much smaller and more focused sample, we find very similar results, namely 0.46% ($t = 1.83$) and 0.29% ($t = 1.26$), respectively. Since excluding observations without a clear theory is rather arbitrary, we view these results mainly as exploratory in nature. The results are suggestive of the shareholder rights anomaly being connected to the larger new economy pricing anomaly of the (late) nineties.

G. Application to other research on governance and stock returns

The framework developed above can be used to investigate other governance-related anomalies. For example, Cremers and Nair (2003) extend GIM by hypothesizing that a combination of strong shareholder rights and strong external monitoring (as proxied by high institutional or public pension fund ownership) results in more effective governance than strong shareholder rights alone. To test this hypothesis, they form a portfolio restricted to contain firms in the highest quartile of institutional (or public pension fund) ownership. Within this portfolio, they buy firms with low G-indices and sell firms with high G-indices. They document that these

portfolios exhibit abnormal returns of 10% - 15% per year from 1990 to 2001. These abnormal returns are greater than the abnormal returns documented by GIM, who do not sort on institutional (or public pension fund) ownership. As in GIM, interpreting the results in Cremers and Nair (2003) as evidence that governance causes abnormal stock returns requires that investors do not understand the implications of high ownership / low G-index for performance, and that they are subsequently surprised by superior operating performance.

To test whether investors are surprised by the performance of high ownership / low G-index firms, we conduct an analysis similar to that in Tables III to V, except that we modify it to follow Cremers and Nair's procedure of restricting the sample to the highest quartile of institutional (or public pension fund) ownership. Within this restricted sample, we then test whether low G-index firms have more positive forecast errors. Consistent with the forecast error findings in Tables III to V, we find no evidence that analysts are surprised by the operating performance of low G-index firms in the high institutional (or public pension fund) ownership sample.⁸ Combined with other evidence provided in Cremers and Nair (2003), our results suggest that the abnormal returns are due to risk or some other factor that happens to be correlated with governance.

IV. Summary and conclusion

We extend GIM's comparative investigation of stock returns and operating performance for firms with strong and weak shareholder rights. The key puzzle that we explore is why public information about governance does not appear to be impounded in stock prices in a timely manner. Specifically, what accounts for GIM's intriguing result that abnormal stock returns for strong governance firms are greater than for weak governance firms? We begin our analysis by

⁸ Results available on request.

providing evidence that firms with weak shareholder rights have lower operating performance. Then, using analysts' earnings forecasts as a proxy for investor expectations, we find that analysts correctly predict this difference in operating performance. We also show that these forecast error results hold for the anomalous stock returns documented by Cremers and Nair (2003) for firms with strong shareholder rights and high institutional ownership. Under the assumption that investors' earnings forecasts are at least as informed as analysts' forecasts, our evidence is inconsistent with the hypothesis that governance causes future abnormal stock returns.

This inference about causality, however, makes the abnormal stock returns for strong governance firms even more puzzling. One possibility is that the differential stock returns reflects differences in risk and expected returns. Using an accounting-based valuation model, we estimate firms' ex ante cost of capital and find that firms with strong shareholder rights have higher expected returns. The magnitude of the difference in expected returns, however, is not sufficient to explain the differential realized stock returns. We then consider the possibility that the time period under study is somehow unusual. In particular, we examine stock returns and operating performance for weak and strong governance firms after GIM's original sample period. During this later period, we find that weak governance firms continue to have lower operating performance and that analysts continue to forecast this difference. However, abnormal stock returns for firms with weak shareholder rights are somewhat greater than returns for strong governance firms. Overall, our evidence points away from the hypothesis that better governance causes higher returns, and suggests that time-period specific returns and/or differences in expected returns likely play a role in explaining the documented abnormal stock returns of strong governance firms.

Although we have focused our analysis on carefully examining a single governance anomaly, we believe that we have provided a framework for investigating other governance-related anomalies. We illustrate a use of this framework by providing supporting evidence for that in Cremers and Nair (2003) that the abnormal returns are due to risk or some other factor that happens to be correlated with governance.

Such a framework is important because it is important to understand the implications of governance for performance. We understand the attractiveness of directly examining stock returns for this link. However, we believe that stock returns are difficult to interpret because bad governance can impose substantial ongoing costs on shareholders with no return effect so long as shareholders are not surprised by the costs. Moreover, it is well-known that current models of asset pricing are imperfect, and that researchers regularly find new examples of trading strategies that appear to generate substantial and significant excess returns (see Schwert, 2003, for a survey). Unlike other anomalies, however, anomalous returns to governance need not be a puzzle. Results finding an association between governance and stock returns can be verified and strengthened following the approach in our paper. If governance causes long-term stock returns, governance also causes systematic differences in operating performance, and these systematic differences cause systematic performance surprises to the market, which should appear in unexpected earnings.

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Table I: Descriptive statistics**Panel A:**

Variable	Mean	Std Dev	Minimum	Q1	Median	Q3	Maximum	N
G-index	9.30	2.82	2	7	9	11	17	9917
Total assets (in millions of \$)	8,932	29,952	14	582	1,756	5,894	716,937	9917
Market value of equity (in millions of \$)	5,199	16,738	5	478	1,271	3,705	508,329	9905
Log(market value of equity _{t-1})	7.12	1.51	1.34	6.06	7.03	8.08	12.72	9917
Log(book-to-market equity _{t-1})	-0.66	0.70	-6.49	-1.07	-0.58	-0.19	2.86	9917
Industry-adjusted ROA (after depreciation.)	0.04	0.10	-1.43	0.00	0.02	0.07	0.81	9917
Industry-adjusted ROA (before depreciation)	0.05	0.10	-0.73	0.00	0.02	0.08	0.81	9704
Forecast error (one year)/price	-0.02	0.23	-13.81	-0.01	0.00	0.00	1.43	9917
Forecast error (one year)/total assets per share	-0.01	0.06	-3.00	-0.01	0.00	0.00	1.70	9917
Number of forecasts in consensus	12.72	8.83	1.00	6.00	11.00	18.00	50.00	9917
Log (dispersion in analysts' forecasts)	-2.92	1.18	-5.94	-3.73	-3.12	-2.30	3.58	9220
Forecast error (two years)/price	-0.02	0.21	-16.91	-0.03	-0.01	0.01	1.14	8869
Forecast error (two years)/total assets per share	-0.01	0.08	-5.11	-0.02	0.00	0.00	1.86	8836
Median long term growth forecast	12.21	5.68	0.00	9.00	12.00	15.00	52.50	5437
Actual annualized five year EPS growth rate	11.89	36.93	-83.78	-0.21	9.06	18.21	1297.20	5437
Forecast error in long term growth forecast	-0.31	37.02	-108.78	-12.27	-1.47	6.02	1288.20	5437

Panel B:	Correlation with G score		Democracy firms		Dictatorship firms		Difference		
	correlation	p-value	Mean	Std Dev	Mean	Std Dev	Mean	t-statistic	
Log(market value of equity _{t-1})	0.08	<.0001	6.89	1.60	7.22	1.29	-0.33	-4.54	**
Log(book-to-market equity _{t-1})	0.01	0.251	-0.73	0.76	-0.60	0.62	-0.12	-3.58	**
Industry-adjusted ROA (after depr.)	-0.03	0.002	0.05	0.11	0.03	0.07	0.02	4.72	**
Industry-adjusted ROA (before depr.)	-0.03	0.001	0.06	0.11	0.03	0.07	0.02	4.65	**
Forecast error (one year)/price	0.02	0.021	-0.02	0.17	0.00	0.05	-0.02	-2.90	**
Forecast error (one year)/assets per share	0.04	<.0001	-0.01	0.05	-0.01	0.02	-0.01	-4.09	**
Number of forecasts in consensus	0.10	<.0001	10.45	8.56	12.81	8.49	-2.35	-5.45	**
Log (dispersion in analysts' forecasts)	-0.05	<.0001	-2.79	1.13	-2.97	1.04	0.17	3.02	**
Forecast error (two years)/price	0.02	0.026	-0.02	0.11	-0.01	0.07	-0.01	-2.56	*
Forecast error (two years)/assets per share	0.03	0.012	-0.02	0.07	-0.01	0.03	-0.01	-2.95	**
Median long term growth forecast	-0.13	<.0001	14.74	6.92	12.08	4.49	2.66	6.77	**
Actual five year EPS growth rate	0.00	0.805	10.68	27.11	14.11	50.51	-3.43	-1.19	
Forecast error in long term growth forecast	0.02	0.241	-4.07	27.23	2.03	50.75	-6.10	-2.09	*

*significant at 0.05 level, **significant at the 0.01 level

Variable definitions

G-index = number of restrictions on shareholder rights (full sample, 9917 observations)

Total assets = book value of total assets: data6

Market value of equity = outstanding shares at the end of the fiscal year multiplied by the share price at the end of the fiscal year: data199 x data25

Book to market equity = book value of equity plus book value of deferred taxes divided by market value of equity: (data60 + data74)/(data199*data25)

Industry-adjusted ROA (after depreciation.) = operating income after depreciation divided by total assets: data178/data6

Industry-adjusted ROA (before depreciation) = operating income before depreciation divided by total assets: data13/data6

The two operating performance measures above are industry adjusted by deducting the median performance of the corresponding Fama-French industry

Forecast error/price = forecast error based on I/B/E/S actual scaled by price: (I/B/E/S actual -forecast)/(share price at beginning of fiscal year)

Forecast error/assets = forecast error based on I/B/E/S actual scaled by yearend total assets per share: (I/B/E/S actual -forecast)* # shares/data6

Number of forecasts in consensus = number of analysts having a forecast of earnings per share outstanding eight months before fiscal year end

Dispersion in analysts' forecast = standard deviation of analysts' forecasts outstanding eight months before fiscal year end divided by the mean consensus forecast

Forecast error in long term growth forecast = I/B/E/S actual annualized growth in earnings per share minus I/B/E/S forecast of long term growth in earnings per share, expressed in percentage terms

I/B/E/S data items used:

Forecast: mean consensus earnings per share forecast that is (one year and) eight months before fiscal year end (e.g., mid April for firms with December fiscal year end)

Actual: actual earnings per share as reported by I/B/E/S

Median long term growth forecast = median consensus forecast of long term growth in earnings per share, expressed as the percentage growth per year

Actual annualized five year EPS growth rate = realized long term growth in earnings per share, expressed as the percentage growth per year

Compustat data items used:

data6 = total assets

data13 = operating earnings before depreciation

data25 = number of shares outstanding at the end of the fiscal year

data60 = book value of common equity

data74 = deferred taxes

data178 = operating income after depreciation

data199 = share price at the end of the fiscal year

Table II: Operating performance

Panel A presents the coefficients on G-index in regressions of industry-adjusted ROA on G-index alone, G-index and log(book-to-market equity), and G-index, log(market value of equity) and log(book-to-market equity) (coefficients on control variables are not reported). Panel B presents the coefficients on the Dict indicator variable in regressions of industry-adjusted ROA on Dict alone, Dict and log(book-to-market equity), and Dict, log(market value of equity) and log(book-to-market equity). Dict is a dichotomous variable that takes the value 1 if the firm is in the decile with the weakest shareholder rights (G-index greater or equal to 14), and 0 if the firm is in the decile with the strongest shareholder rights (G-index less than or equal to 5). The sample in Panel B is restricted to firms in the highest and lowest deciles of G-index. We measure ROA as operating income divided by year-end total assets. We measure operating income in two ways, after and before depreciation. ROA is industry-adjusted by subtracting the ROA of the median firm in the corresponding Fama-French (1997) industry. Results are based on median regressions by year. Then the time series mean of coefficients, and the standard deviation and t-statistics for the average of the coefficients are calculated. Also reported is the result of the pooled regression using median regressions. All coefficients are multiplied by 100 for expositional convenience.

Panel A: *Industry-adjusted $ROA_{it} = \alpha + \beta_1 G\text{-index}_{i,t-1} + \beta_2 \log MVE_{i,t-1} + \beta_3 \log BME_{i,t-1}$* (1a)

	Sub-panel A1: Operating income after depreciation				Sub-panel A2: Operating income before depreciation			
Control variables	-	BME	BME, MVE		-	BME	BME, MVE	
Variable of interest	G-index	G-index	G-index	Obs	G-index	G-index	G-index	Obs
1991	-0.01	-0.04	-0.03	1093	-0.06	-0.03	-0.02	1054
1992	0.02	-0.05	-0.06	1060	0.06	-0.05	-0.04	1015
1993	-0.07	-0.16**	-0.16**	1038	-0.04	-0.12*	-0.12*	997
1994	-0.08	-0.14**	-0.16**	1145	-0.12	-0.12*	-0.13*	1128
1995	-0.08	-0.13*	-0.15**	1092	-0.07	-0.10	-0.13	1076
1996	0.02	-0.05	-0.05	1166	0.02	-0.03	-0.02	1153
1997	0.04	-0.06	-0.05	1038	0.08	-0.01	-0.03	1028
1998	0.05	-0.10	-0.10	989	0.09	-0.06	-0.03	974
1999	-0.21 **	-0.09	-0.10	1296	-0.33 **	-0.19*	-0.10	1279
time series mean	-0.03	-0.09**	-0.10**	9	-0.04	-0.08**	-0.07**	9
time series std	0.03	0.02	0.02		0.04	0.02	0.02	
t-statistic	-1.25	-5.92	-5.53		-0.95	-4.04	-4.22	
Pooled coefficient	-0.04	-0.09**	-0.09**	9917	-0.05	-0.09**	-0.08**	9704
t-statistic	-1.74	-4.55	-4.20		-1.65	-3.56	-3.97	

Panel B (Restricted Sample): *Industry-adjusted* $ROA_{it} = \alpha + \beta_1 Dict_{i,t-1} + \beta_2 \log MVE_{i,t-1} + \beta_3 \log BME_{i,t-1}$ (1b)

	Sub-panel B1: Operating income after depreciation				Sub-panel B2: Operating income before depreciation			
Control variables	-	BME	BME, MVE		-	BME	BME, MVE	
Variable of interest	Dict	Dict	Dict	Obs	Dict	Dict	Dict	Obs
1991	-0.25	-0.70	-0.52	180	-1.02	-1.06	-0.39	169
1992	-0.43	-0.00	-0.49	173	-0.00	-0.19	0.48	158
1993	-1.03	-1.19*	-1.09	169	-0.84	-0.67	-0.86	155
1994	-2.16*	-1.32*	-1.26*	192	-1.70	-1.40	-1.39	187
1995	-1.64*	-1.00	-1.02	182	-0.67	-0.45	-0.58	179
1996	-0.34	-0.32	-0.34	179	-0.21	0.26	0.03	176
1997	-0.02	0.61	0.29	159	-0.07	0.30	0.32	157
1998	0.72	0.17	-0.10	155	1.09	0.88	-0.25	153
1999	-1.53	0.03	-0.13	227	-1.16	-0.78	-0.25	225
time series mean	-0.74*	-0.41	-0.52**	9	-0.51	-0.35	-0.32	9
time series std	0.30	0.22	0.17		0.27	0.24	0.19	
t-statistic	-2.44	-1.85	-2.99		-1.87	-1.43	-1.66	
Pooled coefficient	-0.61*	-0.62*	-0.73*	1616	-0.61	-0.53	-0.41	1559
t-statistic	-2.11	-2.34	-2.51		-1.45	-1.82	-1.14	

*significant at 0.05 level, **significant at the 0.01 level

Table III: Differences in one-year analysts' forecasts

Panel A presents the coefficient on G-index in the regression of analysts' forecast errors on G-index, log(market value of equity) and log(book-to-market equity) (coefficients on control variables are not reported). Panel B presents the coefficient on the Dict indicator variable in the regression of analysts' forecast errors on Dict, log(market value of equity) and log(book-to-market equity). Dict is a dichotomous variable that takes the value 1 if the firm is in the decile with the weakest shareholder rights (G-index greater or equal to 14), and 0 if the firm is in the decile with the strongest shareholder rights (G-index less than or equal to 5). The sample in Panel B is restricted to firms in the highest and lowest deciles of G-index. Results are based on median regressions by year. Then the time series mean of coefficients, and the standard deviation and t-statistics for the average of the coefficients are calculated. Also reported is the result of the pooled regression using median regressions. All coefficients are multiplied by 100 for expositional convenience. The regressions for each of the panels are as follows:

Panel A: $\text{Analysts' forecast error}_{it} = \alpha + \beta_1 \text{G-index}_{i,t-1} + \beta_2 \log MVE_{i,t-1} + \beta_3 \log BME_{i,t-1}$ (2a)

Panel B: $\text{Analysts' forecast error}_{it} = \alpha + \beta_1 \text{Dict}_{i,t-1} + \beta_2 \log MVE_{i,t-1} + \beta_3 \log BME_{i,t-1}$ (2b)

	Panel A: Full sample			Panel B: Restricted sample		
Dependent variable	fce/price	fce/assets		fce/price	fce/assets	
Variable of interest	G-index	G-index	Obs	Dict	Dict	Obs
1991	-0.03	-0.01	1093	-0.31	-0.18	180
1992	0.00	0.00	1060	-0.00	0.02	173
1993	0.01	0.01	1038	0.02	0.20	169
1994	0.00	0.00	1145	0.01	-0.01	192
1995	0.00	0.00	1092	0.24	0.04	182
1996	0.02**	0.01**	1166	0.37*	0.18	179
1997	0.00	0.00	1038	0.12	0.11	159
1998	0.00	-0.01	989	0.06	0.10	155
1999	0.01	0.01	1296	0.16	0.11	227
time series mean	0.00	0.00	9	0.07	0.06	9
time series std	0.00	0.00		0.06	0.04	
t-statistic	0.37	0.95		1.19	1.70	
Pooled coefficient	0.01**	0.01*	9917	0.15*	0.10*	1616
t-statistic	2.07	2.32		2.33	2.09	

*significant at 0.05 level, **significant at the 0.01 level

Table IV: Differences in two-year analysts' forecasts

Panel A presents the coefficient on G-index in the regression of analysts' forecast errors on G-index, log(market value of equity) and log(book-to-market equity) (coefficients on control variables are not reported). Panel B presents the coefficient on the Dict indicator variable in the regression of analysts' forecast errors on Dict, log(market value of equity) and log(book-to-market equity). Dict is a dichotomous variable that takes the value 1 if the firm is in the decile with the weakest shareholder rights (G-index greater or equal to 14), and 0 if the firm is in the decile with the strongest shareholder rights (G-index less than or equal to 5). The sample in Panel B is restricted to firms in the highest and lowest deciles of G-index. Results are based on median regressions by year. Then the time series mean of coefficients, and the standard deviation and t-statistics for the average of the coefficients are calculated. Also reported is the result of the pooled regression using median regressions. All coefficients are multiplied by 100 for expositional convenience. The regressions for each of the panels are as follows:

Panel A: $\text{Analysts' forecast error}_{it} = \alpha + \beta_1 \text{G-index}_{i,t-1} + \beta_2 \log MVE_{i,t-1} + \beta_3 \log BME_{i,t-1}$ (2a)

Panel B: $\text{Analysts' forecast error}_{it} = \alpha + \beta_1 \text{Dict}_{i,t-1} + \beta_2 \log MVE_{i,t-1} + \beta_3 \log BME_{i,t-1}$ (2b)

	Panel A: Full sample			Panel B: Restricted sample		
Dependent variable	fce/price	fce/assets		fce/price	fce/assets	
Variable of interest	G-index	G-index	Obs	Dict	Dict	Obs
1991	0.056	0.012	978	0.008	-0.079	155
1992	-0.020	-0.014	961	-0.414	-0.099	149
1993	-0.004	0.007	954	0.362	0.600	151
1994	0.017	0.010	1030	0.156	0.023	169
1995	-0.009	0.004	1000	0.019	0.205	164
1996	0.038	0.031*	1017	0.641	0.543	149
1997	0.012	0.003	943	0.178	0.524	140
1998	0.021	0.044	879	0.720	1.063*	134
1999	-0.006	0.016	1107	-0.059	-0.027	183
time series mean	0.012	0.013*	9	0.179	0.306*	9
time series std	0.008	0.006		0.118	0.133	
t-statistic	1.449	2.258		1.516	2.298	
Pooled coefficient	0.014	0.016*	8869	0.263	0.275*	1394
t-statistic	1.588	2.506		1.660	2.487	

*significant at 0.05 level, **significant at the 0.01 level

Table V: Differences in analysts' long term growth forecasts

Panel A presents the coefficient on G-index in the regression of analysts' forecast errors on G-index, log(market value of equity) and log(book-to-market equity) (coefficients on control variables are not reported). Panel B presents the coefficient on the Dict indicator variable in the regression of analysts' forecast errors on Dict, log(market value of equity) and log(book-to-market equity). Dict is a dichotomous variable that takes the value 1 if the firm is in the decile with the weakest shareholder rights (G-index greater or equal to 14), and 0 if the firm is in the decile with the strongest shareholder rights (G-index less than or equal to 5). The sample in Panel B is restricted to firms in the highest and lowest deciles of G-index. Results are based on median regressions by year. Then the time series mean of coefficients, and the standard deviation and t-statistics for the average of the coefficients are calculated. The years 1997 and 1998 are combined due to the low number of observations with realized growth available for 1998. Also reported is the result of the pooled regression using median regressions. The regressions for each of the panels are as follows:

Panel A: $Analysts' forecast error_{it} = \alpha + \beta_1 G-index_{i,t-1} + \beta_2 \log MVE_{i,t-1} + \beta_3 \log BME_{i,t-1} \quad (2a)$

Panel B: $Analysts' forecast error_{it} = \alpha + \beta_1 Dict_{i,t-1} + \beta_2 \log MVE_{i,t-1} + \beta_3 \log BME_{i,t-1} \quad (2b)$

	Panel A: Full sample		Panel B: Restricted sample	
Dependent variable	Long term growth forecast error		Long term growth forecast error	
Variable of interest	G-index	Obs	Dict	Obs
1991	0.00	852	1.02	129
1992	-0.17	835	0.92	129
1993	0.01	761	-0.42	113
1994	0.20	799	0.46	133
1995	0.48*	727	3.01	120
1996	0.26	718	4.83	107
1997/1998	-0.40	745	-2.89	118
time series mean	0.05	7	0.99	7
time series std	0.11		0.93	
t-statistic	0.49		1.07	
Pooled coefficient	0.04	5437	1.55	849
t-statistic	0.56		1.53	

*significant at 0.05 level, **significant at the 0.01 level

Table VI: Performance attribution regressions

This table presents the returns realized by a trading strategy based on G score. Panel A shows the development of the returns on the hedge portfolio based on total returns. The first part shows the cumulative growth of the hedge portfolio and the second part shows the annualized stock returns in each of the two sub-periods and over the total period. Panel B shows the abnormal returns. Following GIM we estimate four-factor regressions using monthly hedge portfolio returns. The hedge portfolio is constructed by taking a long position in a value weighted portfolio of Democracy firms ($G \leq 5$) and taking a short position in a value weighted portfolio of Dictatorship firms ($G \geq 14$). The intercept measures the abnormal returns to such a strategy after controlling for the four factors.

Panel A: Total returns on the hedge portfolio

<i>Cumulative results in dollars</i>	<i>9/1/1990</i>	<i>12/31/1999</i>	<i>12/31/2002</i>
Value of \$1 invested in the Democracy portfolio:	1.00	7.04	4.46
Value of \$1 invested in the Dictatorship portfolio:	1.00	3.42	3.21
Value of hedge portfolio:	0.00	3.62	1.25
<i>Annualized stock returns</i>	<i>1990-1999</i>	<i>2000-2002</i>	<i>1990-2002</i>
Democracy portfolio	23.3%	-14.1%	12.9%
Dictatorship portfolio	14.1%	-2.1%	9.9%
Difference	9.2%	-12.0%	3.0%

Panel B: Monthly abnormal returns*Original results by GIM, table VI (Sept. 1990 - Dec. 1999)*

	Intercept	RMRF	SMB	HML	Momentum
Coefficient	0.71**	-0.04	-0.22*	-0.55**	-0.01
Standard error	0.26	0.07	0.09	0.10	0.07
t-statistic	2.73	-0.57	-2.44	-5.50	-0.14

Our replication over the original sample period (Sept. 1990 - Dec. 1999)

	Intercept	RMRF	SMB	HML	Momentum
Coefficient	0.69**	-0.04	-0.22*	-0.54**	-0.01
Standard error	0.26	0.07	0.09	0.10	0.07
t-statistic	2.72	-0.59	-2.47	-5.35	-0.09

Analysis of period following the original sample period (Jan. 2000 - Dec. 2002)

	Intercept	RMRF	SMB	HML	Momentum
Coefficient	-0.05	0.40**	0.13	-0.26	0.01
Standard error	0.68	0.14	0.13	0.17	0.06
t-statistic	-0.08	2.75	1.04	-1.59	0.23

Analysis of the combined sample period (Sept. 1990 - Dec. 2002)

	Intercept	RMRF	SMB	HML	Momentum
Coefficient	0.42	0.11	-0.06	-0.49**	-0.01
Standard error	0.25	0.07	0.07	0.08	0.04
t-statistic	1.66	1.59	-0.95	-5.80	-0.16

*significant at 0.05 level, **significant at the 0.01 level