THIRTY YEARS OF SHAREHOLDER RIGHTS AND STOCK RETURNS

Martijn Cremers
University of Notre Dame
mcremers@nd.edu

Allen Ferrell
Harvard Law School
fferrell@law.harvard.edu

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Abstract[*]

This paper explores the robustness of the positive association between shareholder rights and abnormal stock returns (using the Fama-French-Cahart four factor model) and potential explanations thereof. Utilizing hand-collected shareholder rights data for the 1978-1989 period in conjunction with the existing post-1990 RiskMetrics data, we document that: (1) over the 1978-2007, the association is generally robust to a variety of controls and estimating abnormal returns at the portfolio or firm-level; (2) this association co-varies with merger and acquisition (M&A) waves; (3) while being acquired and making acquisitions are both strongly associated with abnormal stock returns, these effects do not explain the positive association; and (4) once the four factor model is supplemented with the Cremers, Nair & John (2009) takeover factor – which captures risk associated with time-varying investment opportunities and thus relates to the state of the M&A market – the association disappears.

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1. Introduction

The association between shareholder rights and stock returns has been a subject of academic inquiry since Gompers, Ishii, and Metrick (2003, henceforth GIM). Using the G-Index as a measure of shareholder rights, they document that over the 1990-1999 period stocks with "weak" shareholder rights had negative abnormal stock returns and stocks with "strong" shareholder rights had positive abnormal stock returns. The G-Index counts the number of 24 anti-shareholder rights provisions, many of which are anti-takeover provisions (such as poison pills and classified boards), such that a higher G-Index score therefore indicates more anti-shareholder provisions. Economically, the results reported in GIM (2003) are strong, with a value-weighted portfolio that buys (sells) firms with strong (weak) shareholder rights having an annualized abnormal return of 8.7% over 1990-1999.[1]

Any association between stock returns and the strength of a firm's shareholder rights, as captured by the G-Index (or the E-Index, which focuses on six of the 24 G-Index provisions), may be puzzling *ex ante*. After all, any effect of shareholder rights (at some point after those are made public information) on firm performance would presumably be already capitalized into the firm's current stock price if markets are reasonably efficient at incorporating new information. A persistent association between corporate governance arrangements and returns would therefore require explanation. It is therefore not surprising that the reported association has generated an extensive debate in the literature over whether this association is in fact robust and, if so, what explains such an association. This literature on the relationship between stock returns and shareholder rights, whether addressing robustness or potential explanations, has focused almost exclusively on the 1990s and 2000s, given the general unavailability of pre-1990 shareholder rights data.

In this paper, we address the twin questions of robustness and potential explanations using new hand-collected annual shareholder rights data over the 1978-1989 (inclusive) period that was first introduced in our paper "Thirty Years of Shareholder

[1] This association between shareholder rights and abnormal stock returns also exists for the E-Index, which focuses on six of the 24 G-Index provisions (Bebchuk, Cohen & Ferrell (2009)).

Rights and Firm Valuation" (forthcoming *Journal of Finance* 2013). In conjunction with the shareholder rights data for 1990-2007 from RiskMetrics (previously Investor Responsibility Research Center or IRRC), this provides us with thirty years of shareholder rights data for some 2,200 unique firms.

Concerning robustness, which we address in Section 3, we find that the association between shareholder rights and stock returns is robustly positive over 1978-2007. For example, a value-weighted portfolio that buys stocks in the decile with strongest shareholder rights while simultaneously selling stocks in the decile with the weakest shareholder rights has a four-factor (Fama-French-Cahart) alpha of 3.93% per year (t-statistic of 2.43) over 1978-2007. The corresponding equally-weighted portfolio has an annualized alpha of 4.58% per year (t-statistic of 3.88). Controlling for industry effects (using either 48 Fama-French or 3-digit SIC industry groups) eliminates any alpha in value-weighted portfolios, though equally-weighted portfolios are not affected.

We also examine abnormal returns estimated at the stock-level in pooled panel regressions. This is in contrast to the existing literature, which has examined portfolio level abnormal returns or stock-level excess returns (i.e., without adjusting for factors) using the cross-sectional Fama-MacBeth methodology. Our approach has two important advantages (see Ang, Liu and Schwarz, 2010). First, it allows us to risk-adjust at the firm-level rather than the portfolio level, and it further allows us to consider time-variation in abnormal returns. Pooled panel regression confirm the persistence of an association between stock returns and the strength of shareholder rights, an association that persists even controlling for industry effects.

We also examine whether firms with strong (weak) shareholder rights experience positive (negative) abnormal returns associated with their quarterly earnings announcements. Such an association would provide additional evidence for the association between shareholder rights and stock returns. Consistent with Bebchuk, Cohen and Wang (2012), we find such an association, but fail to find evidence that such an association disappeared after 2001.

Moving beyond robustness, we document a novel finding: the positive association between shareholder rights and abnormal returns strongly varies over time as M&A activity varies, i.e. the association is particularly pronounced during the M&A waves over our thirty year period. This co-variation result suggests that the decline of the

association in recent years may be related to the corresponding decline of the M&A market, and further suggests that it could return in the next M&A wave. It also suggests that the outperformance of firms with strong shareholder rights and underperformance of firms with weak shareholder rights is not due to the market gradually learning about the importance of shareholder rights to firm valuation as these abnormal results occur over a long period of time: during the M&A boom of the 1980s and then again during the M&A boom of the late 1990s.

In Section 4 of the paper we consider two potential explanations of the M&A activity-varying association between stock returns and shareholder rights we document. First, it could be that the market did not fully anticipate that firms with strong shareholder rights would receive attractive takeover premiums (see Kadyrzhanova and Rhodes-Kropf (2011) and John and Kadyrzhanova (2011)), and/or that firms with weak shareholder rights would engage in value-destroying acquisitions (see Masulis, Wang and Xie (2007)) during M&A waves. The failure to fully anticipate these effects is consistent with the academic literature supporting the notion that M&A waves are the result, at least in substantial part, of unpredictable technological and/or regulatory shocks. (Andrade, Mitchell, and Stafford (2001)). We find that while both of these effects have a statistically and economically significant impact on stock returns, they do not account for the association between stock returns and shareholder rights.

The second explanation we consider is that the model used to document abnormal returns may be mis-specified, e.g. the abnormal positive (negative) returns accruing to firms with strong (weak) shareholder rights may be due to a missing risk factor. Of course, such missing factor has to be related to the presence of anti-shareholder provisions – i.e., the omitted source of systemic risk would have to be correlated with a firm's G-Index score. That would imply that the association between shareholder rights and stock returns might be driven by beta (i.e., exposure to systematic risk), and is not alpha (i.e., abnormal performance).

A natural candidate for such missing risk factor is given by Cremers, Nair, & John (2009), who introduce a model with time-varying investment opportunities and discount rates. Empirically, they propose a 'takeover factor' to capture a firm's sensitivity to changing systematic investment opportunities. The main idea is that firms that seem more likely takeover candidates have stock prices that are more sensitive to changes in the

level of M&A activity, and given the strongly pro-cyclical behavior of M&A activity (Andrade, Mitchell, and Stafford (2001)), these same firms would then also have stock prices that are more sensitive to changes in market-wide investment opportunities. Adding the takeover factor from Cremers, Nair, & John (2009) to the four-factor model completely eliminates any unconditional and conditional association between shareholder rights and abnormal stock returns if we allow the takeover beta to vary across time and to be firm-specific.[2]

We conclude that the finding that stocks with strong shareholder rights outperform stocks with weak shareholder rights seems to be largely driven by differences in exposures to various effects of M&A activity, an activity that is itself cyclical over time. Such a finding is not entirely surprising given that the G-Index, as a measure of the strength of shareholder rights, is substantially focused on anti-takeover provisions, provisions that assume particular salience during an M&A wave.

The remainder of the paper is as follows. Section 2 briefly describes the data, particularly the evolution of the G-Index distribution over 1978-2007. In section 3, we explore the robustness of the association between shareholder rights and abnormal stock returns, both looking at portfolio and firm-level abnormal return effects as well as abnormal returns associated with quarterly earnings announcements. Section 4 further explores the association of M&A activity with the strength of the association between stock returns and shareholder rights with section 5 concluding.

2. Data

The existing literature is mostly based on the RiskMetrics (previously IRRC) database for firms' G-Index scores. This database starts, however, only in 1990. This represents a real limitation, as the 1980s are an interesting period to study the relationship between shareholder rights and stock returns both from the standpoint of robustness and potential explanations. Adding data from this time period has the significant benefit not only of utilizing extensive "out of sample" data, but is from a time period (1978-1989)

[2] However, the association remains robust to allowing the same for betas with respect to the other four factors (market, size, book-to-market and momentum).

that experienced substantial changes in the domain of shareholder rights along three important dimensions: (i) the legal rules governing the effectiveness of shareholder rights; (ii) the incidence of these provisions at the firm level; and (3) the incidence and composition of merger and acquisition activity, including the rise and fall in the 1980s of a substantial hostile takeover market.[3] These three changes collectively represent significant cross-sectional and time series variation in terms of the incidence and impact of anti-shareholder rights provisions. In contrast, as documented in Cremers & Ferrell (2013) the post-1990 period has little time variation in the G-Index and little hostile takeover activity, though a substantial M&A wave around the year 2000.

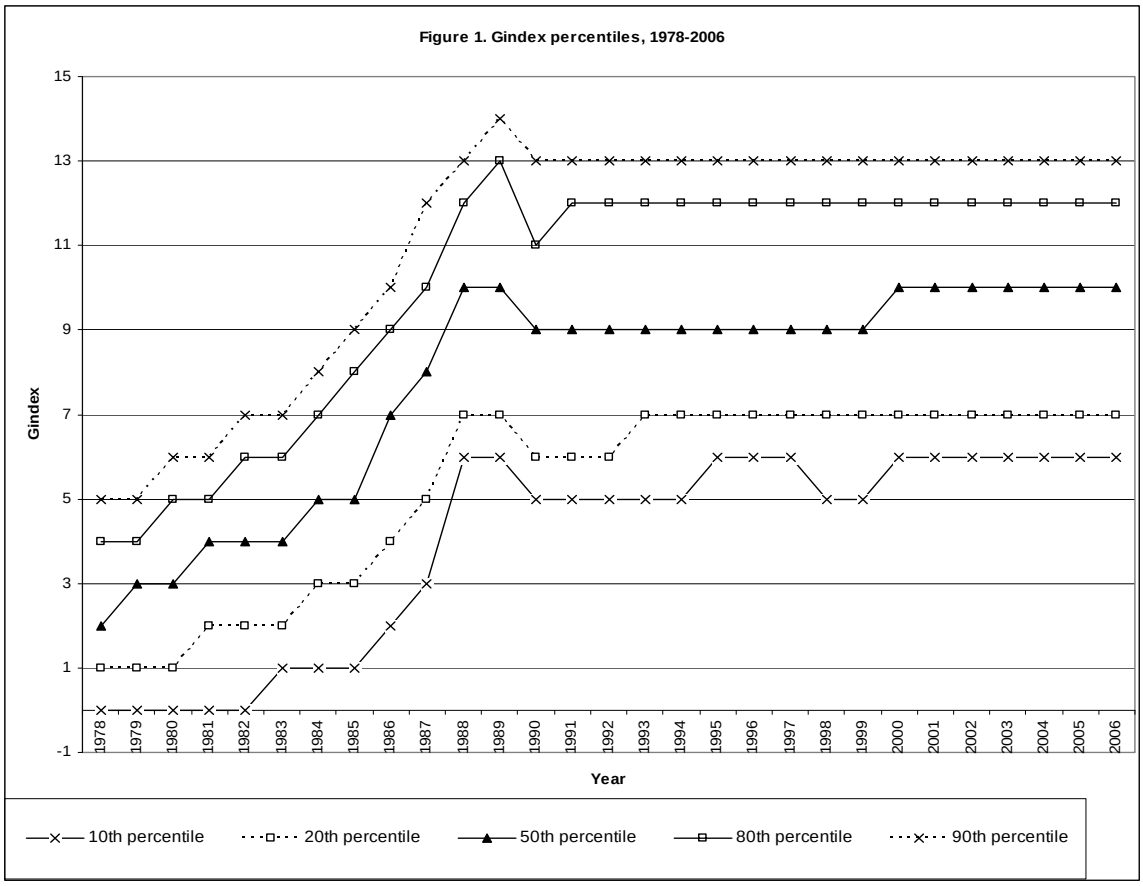
We hand-collected data from SEC filings (10-K, 10-Q, 8-K, proxy statements, and contracts attached thereto); corporate charters and bylaws (gathered from SEC filings and from the Delaware Division of Corporations); and state corporate governance defaults rules for the 1978-1989 (inclusive) time period on firms' G-Index provisions and, based on this, computed firms' annual G-Index scores. We then combine our new dataset with the RiskMetrics database for 1990-2007, resulting in a dataset covering approximately 2,200 unique firms over 1978 – 2007 (inclusive). The details on the sources for our data, data collection protocols, and firm selection criteria are provided in Cremers & Ferrell (2013) and the data appendix thereof.

Next, we add Compustat accounting data, CRSP return data, SDC Platinum's data on merger and acquisition activity and Thompson Financial data of institutional holdings (13F) to our database. We also use data on the Fama-French factors obtained from Kenneth French's data webpage.

Figure 1 tracks the evolution of the G-Index of all the firms in our sample (with fewer than 8 missing provisions) over the 1978-2007 time period. We plot the 10%, 20%, 50%, 80% and 90% percentiles in each year. As Figure 1 illustrates, the distribution of the G-Index significantly shifted upward across all the percentiles during the 1978-1989 period. The median G-Index score equals 5 from 1978-1983, then increases by exactly one point a year from 1983-1989 to reach 11 in 1989, shifts to 9 in 1990 and remains

[3] The last is potentially important given that many of the G-Index provisions are provisions that can render hostile takeovers substantially more difficult, such as classified boards and poison pills. The pre-1990 shareholder rights data are discussed in detail in Cremers & Ferrell (2011), which focuses on the relationship between shareholder rights and firm valuation, as proxied by Tobin's Q.

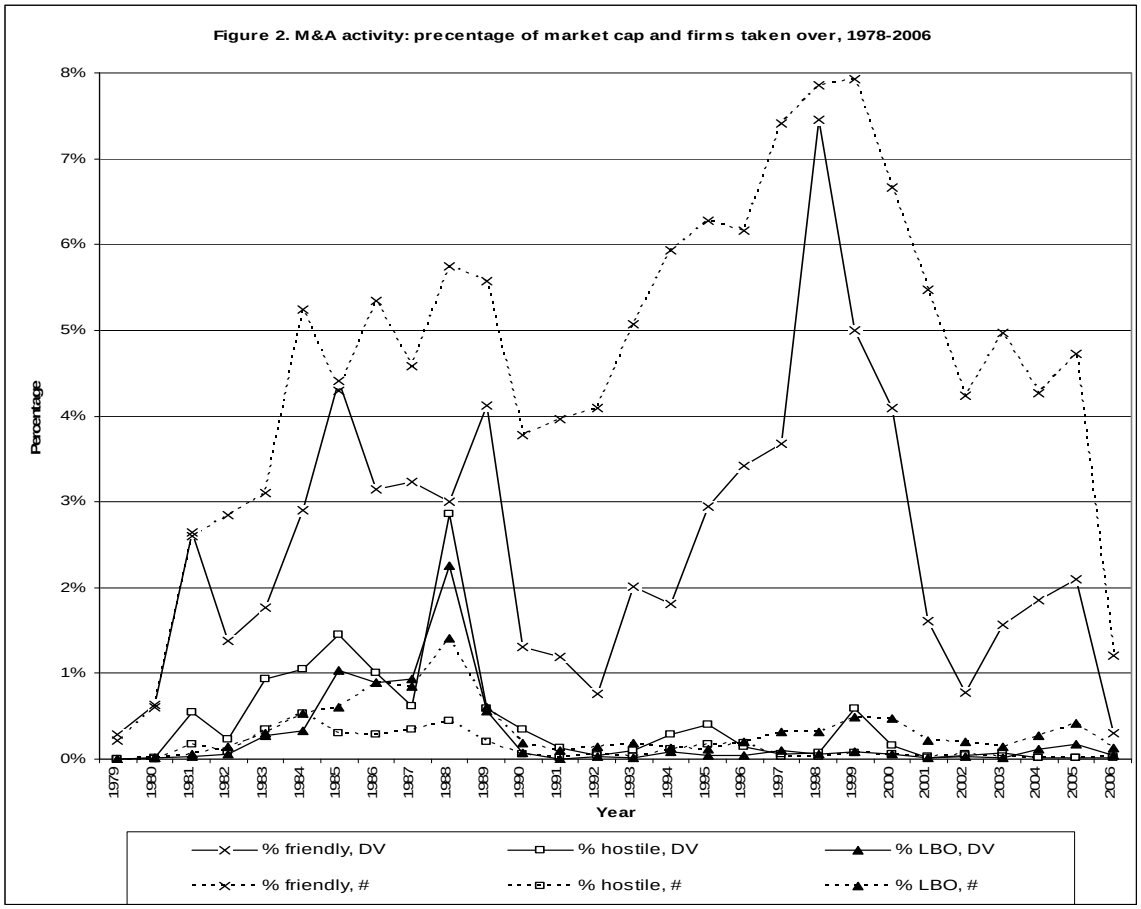
almost constant thereafter.[4] In other words, the changes in firms' G-Index scores, at least in the aggregate, largely occurred in the 1980s with relative stability thereafter.



Not only was the 1980s a period of substantial change in firms' corporate governance arrangements but it was also a period of substantial changes in M&A activity. Figure 2 displays the incidence of M&A activity broken down into three categories – friendly takeovers, hostile takeovers, and leveraged buyouts (LBOs) – over our time period based on all publicly traded companies on Compustat. For each of our three categories of M&A activity, we graph in Figure 2 their incidence as measured by (i) the aggregate dollar value of M&A activity in any given category and year, divided by the total market capitalization of all firms in our sample as of the beginning of the year (represented by the solid "DV" lines, henceforth the aggregate percentage of firm capitalization

[4] See Cremers and Ferrell 2013 for details comparing our 1989 data to RiskMetrics' 1990 data and, more generally, switching from our new hand-collected data to the existing RiskMetrics data.

undergoing M&A); and (ii) the aggregate number of firms subject to M&A activity in a given year, divided by the total number of firms in our sample (represented by the dotted "#" lines, henceforth the aggregate proportion of firms undergoing M&A).



As is apparent from Figure 2, M&A activity, while starting at a very low base at the beginning of this period, occurred on an extensive scale both during the 1980s and the 1990s. The dramatic uptick in M&A activity of all kinds began around 1982 (coincidental with the uptick in firms' G-Index scores). Figure 2 also indicates that the composition of M&A activity was substantially different in the 1980s relative to the 1990s, particularly in the incidence of hostile and LBO M&A activity (see also Andrade, Mitchell and Stafford 2001).

Table 1 provides the number of observations, means and standard deviations of our main variables of interest, pooled over the full sample. This includes such variables, among others, as firm's G-Index scores, number of firms acquired; number of firms acquiring; and firms' market betas. As Table I documents, there are 13,061 firm-year observations of the

G-Index which is based on the number of times the G-Index is updated (which is annual from 1978-1989 and generally every two years from 1990-2006).

3. Does an Association between Stock Returns and Shareholder Rights Exist?

3.1. Methodology: Portfolio versus Firm-Level Alphas

The literature on the negative association between "weak" shareholder rights and negative abnormal stock returns – whether documenting disputing or explaining such an association – has almost entirely relied upon a portfolio-based approach to estimate the abnormal returns. Researchers typically construct portfolios based on firms' G-Index scores, focusing on long-short portfolios with long positions in portfolios with "strong" shareholder rights and short positions in portfolios with "weak" shareholder rights. For instance, Gompers, Ishii & Metrick (2003) construct portfolios consisting of firms with G-Index scores of five or less (i.e., the "democracy" portfolio) and G-Index scores fourteen or more (i.e., the "dictatorship" portfolio). They analyze the abnormal returns associated with the long-short portfolio (going long the former portfolio and short the latter portfolio) by regressing this position on the four-factor Fama-French-Carhart model including market, size, value and momentum factors. The subsequent literature has followed this portfolio-based approach in the course of examining this association, including Cremers & Nair (2005), Core, Guay & Rusticus (2006); Bebchuk, Cohen & Ferrell (2009); Cremers, Nair & John (2009); Giroud & Mueller (2010); Lewellen & Metrick (2010) and Bebchuk, Cohen & Wang (2011).

While certainly informative, the portfolio-based approach is also quite restrictive in three ways. First, it only estimates portfolio-level betas and ignores dispersion of firms' betas for firms that are in the same portfolio. These portfolios are formed, however, based solely on having similar G-Index scores. However, there is no *ex ante* reason why the factor loadings of firms with similar G-Index scores are necessarily the same.

Second, the portfolio-based approach is typically implemented using *ex post* betas that are constant over the full time period being analyzed. This can be quite restrictive as well, with time periods running as long as 18 years in the existing literature. Empirically,

factor loadings can change significantly over time (see for example Cosemans et al. (2010) for documentation that firms' and portfolio betas exhibit strong time variation). For our sample, we also document substantial cross-sectional variation in firms' individual betas as well as firms' individual betas over time for firms within the various governance-based portfolios used.

Third, using firm-level alphas allows us to easily control for other firm characteristics, such as institutional ownership; return on equity, sales growth; Herfindahl score of the firm's industry based on sales of all firms in Compustat; and dividend yield. This is helpful in assessing which firm characteristics, such as G-Index scores or some other characteristic, are associated with the firm-level alphas.

Ang, Liu, and Schwartz (2010) compare the portfolio and firm-level approaches, and document that both of these restrictions can mean that critical firm-level information is lost in the estimation process when using the portfolio approach. Accordingly, we analyze the association between shareholder rights and stock returns based on employing firm-specific, time-varying betas in Section 3.3., after presenting the standard portfolio-based results first in Section 3.2.

3.2. Portfolio-Based Results

We first present results based on the portfolio-based approach, forming long-short portfolios by buying the portfolio with strong shareholder rights (i.e., low G-Index stocks) and selling the portfolio with weak shareholder rights (i.e., high G-Index stocks), where strong (weak) are defined as being in the bottom (top) quintile or bottom (top) decile in the G-Index distribution for that year. We report both annualized "excess returns," defined as returns in excess of the risk-free rate, and annualized abnormal returns, i.e. alphas generated by regressing monthly returns of the long-short portfolio on the returns of the four Fama-French-Carhart factors (Fama & French (1993); Carhart (1997)).

In all cases, we use only information that would have been publicly available at the time of the portfolio construction. We thus update our portfolios sometime after the new G-Index data would be available. For 1978-1989, we update portfolios at the end of June each year, using only information that was contained in the corporate documents pertaining to the prior fiscal year. For data after 1990, we follow the convention in the

literature of updating portfolios in the month after IRRC made the data available (generally every two years).

Table II reports the abnormal return results for long-short portfolios that were formed based on either firms' G-Index decile or quintile rankings (using value weighted portfolios in Panel A and equally-weighted portfolios in Panel B).[5] As can be seen in Table II, there are positive, strongly statistically significant abnormal returns associated going long the bottom decile of firms and short the top decile of firms for the full 1978-2007 time period. The annualized alpha is 3.93% using value-weighted portfolios (Panel A, statistically significant at the 1% level with a t-statistic of 2.43), and an annualized alpha of 4.58% using equally weighted portfolios (Panel B, statistically significant at the 1% level with a t-statistic of 3.88). For quintile portfolios over the 1978-2007, the results are naturally a bit weaker since more firms towards the middle of the G-Index distribution are included in the long-short positions. The long-short position no longer generates statistically significant abnormal returns for value-weighted portfolios, though the abnormal returns remain economically and statistically significant for equally-weighted portfolios (annualized alpha of 3.26% and statistically significant at the 1% level with a t-statistic of 3.64).

We are particularly interested in any changes in the relationship between shareholder rights and stock returns over 1978-2007. Equally-weighted long-short portfolios generate considerably stronger abnormal return results for 1978-1989 than for 1990-2007, whether the long-short position is based on deciles or quintiles. For example, the equally-weighted long-short decile portfolios have an annualized alpha of 7.91% (t-statistic of 3.96) for 1978-1990 but of only 1.54% (with a statistically insignificant t-statistic of 1.10) for 1990-2007. For the equally-weighted quintile portfolios, the annualized alpha is 3.84% (t-statistic of 2.88) for 1978-1990 but 1.84% (being barely statistically significant at the 10% with a t-statistic of 1.64) for 1990-2007. For value-weighted decile portfolios, the annualized alphas are similar in the 1978-1990 and 1990-2007 periods (2.87% versus 3.43% respectively) albeit only statistically significant at the

[5] Gompers, Ishii and Metrick (2003) employ fixed G-Index cut-off points (the G-Index cut-offs of five and fourteen used in defining respectively the "democracy" and "dictatorship" portfolios) in sorting stocks in different governance-related portfolios over their time period (1990-1999). We cannot do so due to the large time variation of the G-Index over 1978-1989 (see Figure 1). However, after 1990 the top and bottom G-Index decile portfolios are very close to Gompers, Ishii and Metrick (2003)'s "dictatorship" and "democracy" portfolios, respectively.

10% level in the latter period. For value-weighted quintile portfolios, the annualized alphas in both periods are small and statistically insignificant (we do however find that the value-weighted annualized long-short alpha based on decile sorts of 8.46% with a t-statistic of 2.81 for GIM's time period of 1990-1999, replicating their result). These results are consistent with the finding in the literature that after the year 2000 the association between shareholder rights and abnormal returns disappears or is significantly diminished. We will return to the changing relationship between shareholder rights and stock returns in Section 3.4's discussion of time variation.

Table III provides a robustness check on our portfolio-based results motivated by Johnson, Moorman, and Sorescu (2009), who argue that the GIM abnormal return results for 1990-1999 are not robust to controlling for clustering of stocks with high and low G-Index scores across 3-digit SIC industries. Lewellen and Metrick (2010) argue, on the other hand, that industry adjusting at the three-digit SIC level does not yield well-specified tests and recommend using either the GICS or the 48 Fama-French industry classification. We use both the 48 Fama-French and three-digit SIC code industry groups to control for industry effects. GICS industry classifications cannot be used as those start in 1985 and are thus not available for our full sample period.

Johnson, Moorman and Sorescu (2009)'s main methodology involves forming matching portfolios based upon firms' three-digit SIC-codes. Every month and for each stock in, say, the lowest G-Index decile portfolio, we create a value-weighted industry-matched portfolio containing only stocks for which we know the G-Index score but that are not included in the lowest G-Index decile portfolio, and have the same three-digit SIC code as that particular stock. We form matching portfolios based upon firms' 48 Fama-French industry group analogously. We subtract the return of the value-weighted industry-matched portfolio from the firm's monthly stock return to create that month's industry-adjusted return for that stock.

Table III documents the four-factor Fama-French-Carhart abnormal portfolio returns using industry-adjusted stock returns. For equally-weighted decile portfolios, the abnormal return using 3-digit SIC-matched portfolios is 3.32% per year, statistically significant at the 1% level (t-statistics of 2.57), and is 2.92% per year using 48 Fama-French industry group-matched portfolios, also statistically significant at the 1% level. Industry-adjusting makes a significant difference for the 1990-1999 and 1990-2007

periods for value-weighted portfolios (replicating Johnson, Moorman, and Sorescu (2009)). For 1978-1990 and for the entire 1978-2007 period, equally-weighted portfolios are largely unaffected, though the value-weighted portfolios no longer produce abnormal returns after industry-adjusting. We thus conclude that the industry effects are primarily important for the largest stocks, while they do not seem to drive the association between shareholder rights and stock returns for the majority of stocks. In subsequent sections, we will do additional industry robustness checks to investigate this further.

3.3. Results using Firm-Specific Time-Varying Betas

This section considers the association between abnormal returns and the strength of firms' shareholder rights based on firm-level alphas, estimating individual firm betas which we allow to vary annually or biannually (based on when the G-Index is updated). Our analysis, as before, will utilize data over the entire 1978-2007 period.

We proceed in two steps. The first step consists of estimating abnormal returns for each stock over annual or two-year periods. Specifically, we regress each individual firm's daily stock return on the standard four factor model. We incorporate non-synchronous trading and other microstructure issues by also adding a one-day lag of each factor (Dimson (1979)), and calculate the firm beta as the sum of the coefficients on the contemporaneous and the one-day lagged factor loading. We run these regressions separately by stock and separately for each period over which the stock's G-Index is updated (i.e., annually using July-June data for 1978-1989 and generally using two years of data thereafter, i.e. using periods between IRRC updates), requiring at least 100 daily returns. As a result, the factor loadings vary both across firms and across time. The alpha is annualized by the multiplying coefficient on the constant by 250.

Panel A of Table IV shows the distribution of the firm-level market betas by G-Index quintile using the four-factor Fama-French-Carhart model. This indicates very significant dispersion of market betas within each G-Index quintile, whereas there is almost no variation in the median market betas across G-Index quintiles.[6] Results are similar for the other factor loadings (not reported). As a result, estimating betas at the

[6] Panel B reports analogous results for takeover factor loadings (a fifth factor in addition to the Fama-French-Carhart four factors from Cremers, Nair & John (2009)). Again, there is significant dispersion of takeover betas within each G-Index quintile, but very little dispersion in the median takeover betas across G-Index quintiles.

portfolio level thus ignores considerable variation in firm level betas (see further Ang, Liu, and Schwartz (2010)).

In our second step, we regress our annualized abnormal stock return estimates on dummy variables representing the bottom and top quintile ranking in the G-Index distribution (Table V) or just the G-Index itself (Table VI). For instance, a firm in the bottom G-Index quintile (20% of firms with the strongest shareholders rights as measured by their G-Index scores), the dummy variable representing the bottom quintile would assume a value of one. Additional controls for other variables that may potentially impact our daily abnormal stock returns are also considered. These additional controls consist of the lagged values for the following variables: inclusion in the S&P 500 index; log of market capitalization; institutional ownership; return on equity, sales growth; Herfindahl score of the firm's industry based on sales of all firms in Compustat; dividend yield; and the log of the firm's book-to-market ratio. The resulting coefficient values are multiplied by 100, such that these are expressed in percentage terms.

All second-step specifications use year fixed effects. We control for industry using fixed effects based either on the Fama-French (FF) 48 industry classification or the firm's 3-digit SIC code or 48FF x year fixed effects. Finally, the robust standard errors are always clustered at the firm level (except when explicitly stated otherwise, e.g. for variables that only vary across time, for which we report the standard errors clustered by time). In unreported regressions we confirm that our results are robust to incorporating the estimation risk of the first step by weighting the observations by the volatility of the standard errors in the first step.

The results of the second step using the four-factor Fama-French Carhart abnormal returns and G-Index quintiles are presented in Table V. Panel A (B) presents results using G-Index quintile dummies without (with) any additional controls. In column 1 of Panel A, using only year fixed effects, there is a strongly statistically significant association between having "weak" shareholder rights (i.e., top quintile in the G-Index distribution) and negative abnormal returns, and between having "strong" shareholder rights and positive abnormal returns. Economically, firms in the top (bottom) quintile have annualized abnormal returns of -1.78% (1.5%), which estimates are consistent with the results for equally-weighted portfolios in Panel B of Table II. The negative association between weak shareholder rights and abnormal returns remains whether one

uses 48 FF fixed effects or 3-digit SIC or 48FF x. year fixed effects, both with and without additional controls. This shows that the association between shareholder rights and alpha is robust to estimating firm level alphas and betas that vary across time.

However, when adding firm fixed effects (column 5 of Panel A and Panel B) the association becomes insignificant. With firm fixed effects, we are in effect measuring whether the average return is different before versus after a change in the G-Index. This lack of significance with firm fixed effects might indicate that the association is primarily cross-sectional, and that abnormal returns do not change significantly after a firm makes large relative changes in its G-Index. As we seem to have considerable firm-level time variation in the G-Index, this would indicate a lack of robustness. At the same time, this leaves open the possibility that the association between abnormal returns and a firm's G-Index is time-varying. The firm fixed results remove only the time-invariant portion of abnormal returns, leaving open a conditional association between returns and shareholder rights. The subsequent Section 3.4 considers this latter possibility by considering the interaction of the G-Index with the level of M&A activity, a state variable that is arguable related to the business cycle or the level of investments opportunities.

Similar results emerge when using the (continuous) G-Index, rather than G-Index quintiles, as an explanatory variable. These results are presented in Table VI (Panel A without additional controls and Panel B with additional controls). In Panel A, there remains an economically meaningful, negative association (significant at the 1% level) between the (continuous) G-Index and abnormal stock returns, whether one uses fixed effects or introduces industry fixed effects (either based on the 48 Fama-French, 3-digit SIC industry classification, or 48 FF x year fixed effects). When adding controls (Panel B), the negative association still remains except for when the 3-digit SIC classification is used. As in Table V, the negative association disappears when firm fixed effects are used (column 5 of Panel A and B).

3.4. The Cyclicality of Abnormal Returns with M&A Waves

Unconditional specifications, such as those presented in Table VI, may be missing an important aspect of the relationship between shareholder rights and stock returns over time. As discussed in Cremers & Ferrell (2013) and Bebchuk, Cohen & Ferrell (2009), the G-Index to a significant extent tracks firms' anti-takeover provisions, such as

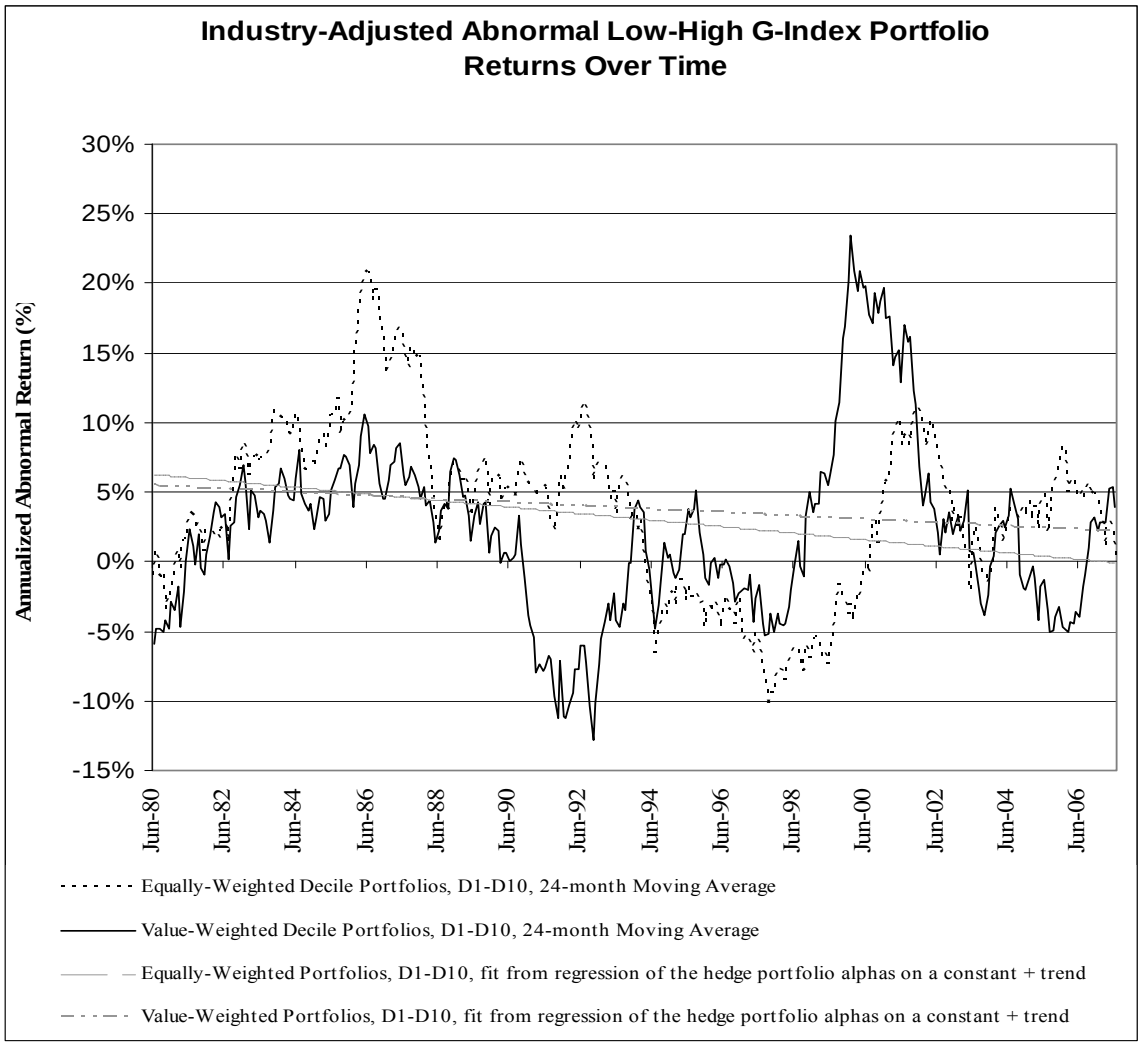
classified boards and poison pills, and hence might potentially affect the probability of shareholders receiving an attractive takeover bid (see Kadyrzhanova and Rhodes-Kropf (2011) and John and Kadyrzhanova (2011)). Consistent with this, Cremers & Ferrell (2013) document that the G-Index has a significantly stronger negative firm valuation effect for firms that happen to be in industries experiencing a merger and acquisition wave. On the acquirer side, Masulis, Wang and Xie (2007) document that acquirer firms with high G-Index scores are likely to engage in value-destroying acquisitions (as proxied by negative acquirer returns around with the merger announcement). These results suggest that the impact and importance of shareholder rights, as measured by the G-Index, might depend on the level of M&A activity. In turn, the level of M&A activity strongly varies over time, as seen in Figure 2 (see, also, e.g., Andrade, Mitchell and Stafford 2001).

We find that the pattern of the abnormal returns associated with G-Index portfolios corresponds to the two large M&A waves over the course of 1978-2007. Figure 3 graphs the 24-month moving average of the annualized abnormal returns associated with these various long-short portfolios over time (using the four-factor Fama-French-Cahart model and controlling for firms' industry using 3-digit SIC industry as in Panel A of Table III). The association between shareholder rights and stock returns appears to be particularly pronounced in the mid-1980s and then again in the late 1990s. In the late 1980s/early 1990s and early 2000s, in contrast, the association reverses. In particular, the negative association between weak shareholder rights and stock returns appears to come into full force in years in which there are high levels of M&A activity, as can be seen by comparing Figure 3 with Figure 2. The mid-1980s and the late 1990s saw very high levels of M&A activity with a collapse of the M&A market in the late 1980s/early 1990s and early 2000s.

The covariance of abnormal returns associated with shareholder rights and M&A waves is in tension with the hypothesis that the abnormal returns are driven by the market learning about the importance of shareholder rights to firm valuation (Bebchuk, Cohen & Wang (2012)). The association appears during the M&A boom of the 1980s and reappears yet again, very significantly, during the M&A boom of the 1990s. Bebchuk, Cohen & Wang (2012) argue that investors didn't fully appreciate the importance of corporate governance in the early 1990s, and that their learning about this over the next

decade can explain the abnormal returns. However, Figure 3 indicates that a strong association already existed during the M&A wave in the 1980s, raising the question of how long it plausibly could take investors to learn about the importance of shareholder rights. We thus interpret our new evidence as in tension with the learning hypothesis.

Figure 3



We formally consider co-movement with M&A waves by regressing the firm-level abnormal returns (from the Fama-French-Carhart four factor model) on the interaction of the G-Index and the level of M&A activity in that year. Our proxy for the level of M&A activity is the percentage of all Compustat firms that receives a bid in the year that the G-Index is measured.

Results are presented in Table VII. Irrespective of the industry or even firm fixed effects used, the interaction is negative, statistically significant and economically meaningful. Indeed, with the interaction included the G-Index by itself is either no longer statistically significant or positive albeit small in magnitude. The negative association of the G-Index with abnormal returns thus appears to be entirely captured by its interaction with the level of M&A activity.

The importance of M&A activity for the strength of the association between shareholder rights and abnormal stock returns is one of our central findings. Section 4 will be concerned with exploring various potential explanations for why this relationship might exist. Before doing so, we will turn to the issue of whether there are positive (negative) abnormal returns associated with the quarterly earnings announcements of firms with strong (weak) shareholder rights.

3.5. Abnormal returns associated with Quarterly Earnings Announcements

A final robustness check for the relationship between the strength of a firm's shareholder rights and its stock returns is whether there are positive (negative) abnormal returns associated with the quarterly earnings announcements of firms with strong (weak) shareholder rights. Core, Guay & Rusticus (2006) fail to find such a relationship while Bebchuk, Cohen and Wang (2012), using a different data filter than Core, Guay & Rusticus (2006), do find such an association up until 2001. After 2001, they find that such an association ceases, supporting their argument that by this point the market finally fully appreciated the importance of shareholder rights to firm performance.

With the benefit of our thirty years of data, we too examine whether such an association exists. Our implementation aims to follow that of Bebchuk, Cohen and Wang (2012) as closely as possible. As a result, and similar to Giroud and Mueller (2011), we filter out firms covered by fewer than five analysts as well as exclude dual-class firms and REITs. We regress the abnormal returns (adjusted for the Fama-French-Carhart factors) around quarterly earnings announcement dates (from IBES or Compustat, whichever is earliest) on the G-Index. We measure abnormal returns over five different windows starting one day, three days, five days, ten days and twenty trading days prior to the earnings announcement and then through the earnings announcement day with the window ending the day after. Our results are robust to whether one clusters standard

errors by firm and by year, as well as just clustering by firm or clustering by year. Our results are also robust to using raw excess returns, i.e. unadjusted returns. We will report our results using abnormal returns as the dependent variable and report the robust standard errors clustered by year as these tend to be the most conservative.

The earnings announcement return results are reported in Table VIII. In Panel A, columns (1)-(5) replicate a key result in Bebchuk, Cohen and Wang (2012). Consistent with their paper but inconsistent with Core, Guay & Rusticus (2006), we find a negative association between the G-Index and earnings announcements returns. Our coefficient estimates are very close to those of Bebchuk, Cohen and Wang (2012) despite our addition of data from 1984 - 1989 to their time period (IBES data start in 1984). Columns (6)-(10) of Panel A report a new result. Positive earnings surprises are more likely in years with greater M&A activity. This does not necessarily suggest that these surprises are to some extent predictable, as overall M&A activity seems hard to predict.

Turning to Panel B of Table VIII, we consider whether the association between the G-Index and announcement returns co-varies with M&A activity. We find only weak, suggestive evidence of this, as the interaction of M&A activity and the G-Index is statistically significant only when we use the longest 20 day event window. The interactions using all the other event windows have a negative coefficient, but are statistically insignificant.

We cannot replicate the other main finding in Bebchuk, Cohen and Wang (2012), i.e. their finding that the negative association between the G-Index and earnings announcement returns disappears after 2001. We create a dummy variable (POST2001) that takes a value of 1 if the quarterly earning occurs in 2002 or thereafter. The interaction of this dummy variable with the G-Index is always insignificant, see columns (6) – (10), irrespective of whether the interaction of M&A activity and the G-Index is included as well. We do not have a clear explanation of why we can replicate one but not the other finding in Bebchuk, Cohen and Wang (2012). However, we note that there is relatively little time variation in the G-Index post-2001. As a result, there is a surprisingly high correlation of 96% in our sample between the POST2001 dummy and its interaction with the G-Index. This suggests that multicollinearity could potentially explain why they find a very significant positive coefficient on one and a very significant negative coefficient on the other. Of course, it doesn't explain why we do not find the same, and

can only conclude that the evidence of a negative association between the G-Index and earnings announcement returns seems more robust than its disappearance after 2001.

In conclusion, we draw three inferences from the quarterly earnings announcement results that span our entire thirty year period. First, and most importantly, they constitute additional evidence of a real positive association between shareholder rights and stock returns. Second, the results are at least somewhat suggestive that the association between earnings announcement returns and the G-Index is stronger during M&A waves. Third, our results do not appear to support the view that there is a structural break in 2001.

4. The Association of Abnormal Returns with M&A Waves

This section further investigates one of our central new findings: the importance of M&A activity on the strength of the association between shareholder rights and abnormal stock returns (see Figure 3 and Table VII). Section 4.1 will specify two hypotheses that might explain the link with M&A activity, and we then test these hypotheses in the subsequent three sections.

4.1. Two Potential Explanations

In order to construct a framework for articulating our hypotheses we will start with the following general factor structure for stock returns:

$$R_t^i = \alpha_t^i + \beta_t^i \cdot F_t + \tau_t^i + \varepsilon_t^i$$

where R_t^i is the stock return of firm i in period t. On the right hand side, β_t^i is a vector of firm i's factor loadings in period t and F_t is the vector of systematic (priced) factor realizations. τ_t^i, in turn, represents the idiosyncratic return related to unexpected takeover activity. Such takeover activity, for example, could include an attractive unexpected takeover bid that is offered and realized, or an unexpected value-destroying acquisition by firm i in period t. α_t^i is the pricing error of firm i in period t (abnormal return) and ε_t^i is the idiosyncratic error, i.e. the residual of $\alpha_t^i + \beta_t^i \cdot F_t + \tau_t^i$.

Assuming that markets are semi-strong efficient means that $E[\alpha_t^i]=0$. Also, under efficient markets, the expected value of the idiosyncratic factors are zero, i.e. $E[\tau_t^i]=0$ and

$E[\varepsilon_t^i]=0$. However, in small sample, and for example during periods with unexpectedly high M&A activity, it could very well be that the average realized τ is non-zero for many firms or even in aggregate. Assuming that the stock market allows temporary mispricing that is subsequently corrected in period t means that $E[\alpha_t^i] \neq 0$. Specifically, if there is temporary overvaluation at the beginning of the time period then $E[\alpha_t^i]<0$ and, conversely, $E[\alpha_t^i]>0$ if there is temporary undervaluation. Furthermore, if a relevant factor is omitted from F_t – i.e., in case of model misspecification – then the estimate of α_t^i might not equal 0, even if it is in fact 0 in case the omitted factor had been included.

Our first hypothesis is that the abnormal return associated with strong shareholder rights is due to τ_t^i , the idiosyncratic return related to unexpected takeover activity. τ_t^i would cover all the returns associated with M&A activity other than those associated with systematic (priced) risk. If attractive unexpected takeover premiums or the effects of unexpected value-destroying acquisitions on firm valuation are not associated with a systematic risk factor, this will manifest itself in the realization of τ_t^i. If the likelihood of these realizations are associated with the strength of shareholder rights, this might explain the co-variance of M&A waves with the association between the G-Index and stock returns. In sum, if M&A waves are partially unanticipated and we happen to look at a time period with a more active takeover market than expected *ex ante*, we could find an association between the G-Index and abnormal stock returns *ex post*.

Our second hypothesis is that there is an omitted risk factor in the four-factor model, where the omitted risk factor is correlated with M&A activity and where the factor loading on this omitted risk factor is correlated with the G-Index. Our prime candidate for such omitted risk factor is the "takeover factor" proposed by Cremers, Nair & John (2009). Adding this risk factor would change the estimated abnormal returns, and thereby the association between abnormal returns and the G-Index.

4.2. Hypothesis One: Idiosyncratic Takeover Realizations

There are at least two possible effects that unexpected takeovers and M&A waves can have on stock returns, even if such effects are unrelated to any source of systematic risk that is priced. The first is the possibility that firms with fewer anti-takeover provisions are more likely to be taken over and/or accept a takeover offer during an

M&A wave. If the M&A wave is not fully anticipated by the market then for firms with stronger (weaker) shareholder rights, there could be a positive (negative) abnormal stock return when the unexpected takeover activity occurs. We will call this the takeover premium effect. This possibility is consistent with the work on entrenchment by Kadyrzhanova & Rhodes-Kropf (2011) and John & Kadyrzhanova (2011).

The second possibility is that firms with weak shareholder rights may be more severe agency problems, such that they are more likely to overpay for firms when acquiring and hence reduce their own shareholder returns in this way. If acquisition activity is not fully anticipated (or M&A waves more generally) by the market then for these firms engaged in value-destroying acquisitions there would be a negative abnormal stock return. Consistent with this possibility, Masulis, Wang and Xie (2007) document negative abnormal returns are associated with acquisition announcements by firms with weak shareholder rights or high G-Index scores.

Both of these effects work off of the idea that M&A waves are not fully anticipated by the market. The academic literature on M&A waves suggests that M&A waves are, at least in substantial part, a function of technological or regulatory shocks; i.e., changes that might not have been fully anticipated earlier (Andrade, Mitchell, and Stafford (2001)). Further supportive of the idea that M&A waves are at least partially unanticipated is the fact that M&A waves tend to be strongly pro-cyclical with the stock market and it is presumably difficult to time the aggregate market.

To explore the first takeover premium effect, we add a 'target' dummy, representing whether a firm was acquired in a particular year, to the firm-level abnormal return regressions used in Tables V and VI. This dummy should be positive, as being acquired is associated with higher stock returns due to the generally large takeover premium paid to target shareholders. If the likelihood of being a target or the size of the takeover premium is positively related to having more shareholder rights, this could potentially explain the association between shareholder rights and abnormal stock returns. If so, then the coefficient for the G-Index and its interaction with M&A activity would weaken or even become statistically insignificant once this target dummy variable is included in the regression.

We test the second effect of value-destroying acquisitions by including the acquisition announcement returns of the acquiring firms. Specifically, Acq_Return is the

three-day window abnormal return around the day of the acquisition announcement for the firm doing the acquisition, estimated using a market model. We would generally expect the acquisition announcement return to have a positive coefficient. If its relation to the level of shareholder rights (see Masulis, Wang and Xie (2007)) is sufficiently large, it could potentially explain the negative association of the G-Index or the negative coefficient of the G-Index interaction with M&A activity.

The results are presented in Table IX. Both effects are supported by the data. The dummy on the target dummy is consistently positive, economically meaningful and statistically significant at the 1% level regardless of the fixed effects used. Likewise the coefficient value on acquisition returns is also consistently positive, economically meaningful and statistically significant regardless of the fixed effects used (columns 2, 4, 6 and 8).

However, neither becoming a target nor acquisition announcement returns diminish the coefficient on the interaction of the G-Index with M&A activity, which remains consistently negative, economically meaningful and statistical significant (columns 1-8). In other words, the takeover premium effect and value-destroying acquisitions are supported by the data but these effects do not explain the association between stock returns and shareholder rights.

4.4. Hypothesis Two: Omitted Risk Factor

The primary candidate for the omitted risk factor is the "takeover factor" proposed by Cremers, Nair & John (2009), which co-varies with the level of activity in the M&A market discussed earlier. Specifically, the takeover factor is a long-short portfolio that buys firms with a high *ex ante* probability of being taken over, and sells firms where such probability is estimated to be low. The economic intuition is that takeover waves are strongly pro-cyclical and thus related to systematic investment opportunities. For example, Bruner (2004) and Rhodes-Kropf, Robinson, and Viswanathan (2005) show that takeover activity is strongly pro-cyclical, and more generally related to the conditions in the equity market. As a result, firms that are more likely takeover candidates are expected to be more sensitive to changes in investment opportunities. This could be a priced risk if investors have time-varying discount rates, and become more risk averse in bad times such that they are willing to pay a premium for

stocks that provide a kind of 'insurance' and tend to do well when in such bad times. In this case, firms that are likely targets may be considered more risky, as they will generally perform best during M&A waves, which generally happen during bull markets when the investors put less value on such outperformance.

This factor is intended to capture a firm stock return's sensitivity to changes in the investment opportunity set, as proxied by a firm's exposure to the M&A environment. Therefore, the factor itself is created to naturally co-move with M&A activity, while a firm's sensitivity to it could be related to the G-Index. This latter sensitivity is not by construction, however, as the takeover factor used does not incorporate G-Index information itself. Rather, the specification relies on logit regressions of the takeover likelihood on firm characteristics such as market cap, book-to-market, profitability, institutional blockholders and whether firms in the same industry were taken over in the previous year.

We test this hypothesis by appending the takeover factor to the Fama-French-Carhart four-factor model, and then estimate firms' daily abnormal returns based on the resulting five factor model. The resulting estimated annual abnormal returns, based on the five factor model, are then regressed on the firms' G-Index (or using quintile dummies). We also regress these returns on the (continuous) G-Index and its interaction with M&A activity. In other words, we undertake the same analysis as was done in Tables V and VI but now utilizing a five-factor model. Year fixed effects are used throughout, plus various fixed effects and using robust standard errors clustered at the firm level. The results are presented in Table X.

As documented in Table X, the G-Index and the interaction with M&A activity are all statistically insignificant in all the specifications (columns 5-8). This stands in contrast to Tables VII and IX where, using the four-factor model, this interaction effect is consistently economically meaningful and statistically strongly significant. For the top quintile dummy variable, i.e. the firms with weakest 20% of shareholder rights, the evidence is more mixed. Using only year fixed effects in column 1, the negative association is still statistically significant. If 48 industry group fixed effects are added in column 2, this negative association becomes only marginally statistically significant in column 2 with a t-statistic of 1.67. Finally, using 3-digit SIC industry fixed effects in column 3 renders the association insignificant, and likewise with firm fixed effects.

To verify that the weakening of the G-Index coefficient is indeed driven by exposure to the takeover factor, we regress the estimated takeover beta (the beta on the takeover factor estimated using the five-factor model) on the G-Index and the interaction of the G-Index with M&A activity. In general, firms that increase their G-Index add additional takeover defenses, which may lower their exposure to the market for corporate control, and thus to the takeover factor. This would suggest a negative association between their takeover beta and changes in the G-Index. The evidence documented in Table XI is consistent with this, as the coefficient on the G-Index is negative and statistically significant (columns 1 and 4), as is the interaction with M&A activity (columns 2 and 5). However, when both the G-Index and its interaction with M&A activity are included (columns 3 and 6), both are insignificant.

Another important caveat is that the addition of the takeover factor using the portfolio approach makes no difference on the abnormal returns (not reported). That may not be surprising, as Panel B of Table IV show that the median takeover beta across the G-Index quintile portfolios is essentially identical. As a result, the G-Index portfolios do not have meaningful exposures to the takeover factor. However, that is different once we estimate takeover betas at the firm level. According to Panel B of Table IV, the principal difference across G-Index portfolios seems to be the 90^{th} percentile in the takeover beta, which higher for low G-Index firms; i.e. the firms with the most positive loadings on the takeover factor are more likely to be firms with strong shareholder rights or low G-Index scores. That is consistent with the results in Table XI that a firm that increases the G-Index scores lowers their beta to the takeover factor. Moreover, as we document in Cremers & Ferrell (2012), firms tend to change their G-Index scores during M&A waves.

5. Conclusion

In this paper, we address both the robustness of and the potential explanations for the association between shareholder rights, as proxied by the G-Index, and abnormal stock returns, as estimated by the Fama-French-Carhart four-factor model. Our analysis combines the post-1990 RiskMetrics governance data with hand-collected data from 1978-1989, resulting in a 30-year time period covering 1978-2007. Besides having a

substantially longer time period, governance data from the 1980s is of particular interest given the significant time variation in the G-Index and the rise and fall of a substantial M&A market, including a hostile takeover market, during the 1980s.

We find that equally-weighted long-short portfolios that buy (sell) firms with strong (weak) shareholder rights have economically meaningful and statistically significant positive abnormal returns using the four-factor model over this time period. This result is robust to controlling for industry using 48 Fama-French industries or 3-digit SIC industries (as well as using 48 Fama-French fixed effects that change every year). The strength of the association appears to be cyclical over time, co-varying with the level M&A market. As a result, the abnormal returns accruing to portfolios based on shareholder rights are particularly large during the mid-1980s and the late 1990s.

Moving beyond the standard portfolio-based approach to estimating abnormal returns, we estimate firm-level abnormal returns by allowing betas to vary across firms and time. This is methodologically important given the wide dispersion of betas on all four Fama-French-Cahart factors within groupings of firms with similar shareholder rights. The use of firm-level time-varying betas ensures that this information is not ignored, and using pooled panel regressions of firm-level alphas allows for the use of additional firm-level controls. Again, we find that the association, whether we categorize firms by their G-Index quintile ranking or by their G-Index score, is robust to this approach. Interestingly, we find the novel result that the association is entirely accounted for by the interaction of shareholder rights with the level of M&A activity. Once firm fixed effects are included, the unconditional association between the G-Index and abnormal returns disappears though the interaction between the G-Index and M&A activity remains negative and statistically significant.

We confirm the association of shareholder rights with stock returns by examining abnormal returns around quarterly earnings announcements. We find, consistent with Bebchuk, Cohen and Wang (2012), that strong (weak) shareholder rights are associated with positive (negative) abnormal returns. We further find some suggestive evidence that these positive abnormal returns are larger during M&A waves. We fail to find any evidence that this association disappears after 2001.

We then turn to potential explanations for our novel result that the association between shareholder rights and abnormal stock returns is entirely accounted for by the

interaction of shareholder rights with the level of M&A activity. We consider two hypotheses. First, the possibility that M&A waves, if partially unanticipated, could generate the association *ex post*. One possible mechanism is the positive abnormal returns associated with being an acquired firm and its shareholders receiving an attractive takeover bid, an event that might be a partial function of having strong shareholder rights. A second mechanism is negative abnormal returns associated with being a firm making a poor acquisition, an event that might be a partial function of having weak shareholder rights. We find that both being acquired and making an acquisition have significant abnormal stock return effects (in the predicted directions), but neither effect accounts for the association between shareholder rights and stock returns.

We then consider the possibility that the association is the result of an omitted risk factor, and specifically a risk factor that covaries with the state of the M&A market. To this end, we supplement the Fama-French-Cahart four factors with the takeover factor proposed in Cremers, Nair & John (2009). With the introduction of this fifth factor, the association disappears. Consistent with a direct connection between the G-Index and the takeover factor, if shareholder rights become weaker a firm's exposure to this risk factor falls (i.e. the loading on the takeover factor declines after the G-Index increases).

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TABLE I
DESCRIPTIVE STATISTICS

This table presents the number of observations, the means and standard deviations of our main variables of interest. The number of observations is counted as the number of times the G-Index is updated, which is annual from 1978-1989, and generally every two years from 1990-2006. G-Index is the proxy for shareholder rights. Institutional Ownership is the percentage of equity owned by institutions based on their quarterly 13F filings from the Thomson database. Return on Equity is the firm's earnings divided by the book value of equity based on Compustat. Sales Growth is the annualized percentage change in total sales based on Compustat. The Herfindahl Index is a concentration index based on sales in the firm's 48 Fama-French industry group, also based on Compustat. Dividend Yield is the ratio of dividends paid over the market capitalization at fiscal year-end based on Compustat. S&P500 Dummy equals one if the firm is included in the S&P 500 index and zero otherwise. Q is a proxy of the market-to-book of the firm's assets based on Compustat. Compustat Firms Acquired is the percentage of all Compustat firms that were acquired in a full takeover based on Compustat and SDC. Firm Acquired is a dummy variable equal to one if the firm is acquired. Firm Acquiring is a dummy variable equal to one if the firm acquires another firm in a full takeover according to the SDC database. Acquisition CAR is the 3-day cumulative abnormal return around the announcement date of the acquisition for the acquiring firm based on a market model and CRSP daily return data. Takeover Beta is the firm's loading on the takeover factor based on daily CRSP returns, using a model that also includes market, size, BM and momentum factors. Market Beta is the firm's loading on the CRSP market return based on daily CRSP returns, using a model that also includes size, BM, momentum and takeover factors.

Variable	# Obs	Mean	Std. Dev.
G-Index	13,061	8.66	3.02
Institutional Ownership	13,043	50.20%	21.56%
Return on Equity	13,058	10.10%	25.19%
Sales Growth	13,055	8.17%	19.58%
Herfindahl Index	13,061	6.45%	6.44%
Dividend Yield	13,046	0.09%	8.63%
S&P500 Dummy	13,061	46.96%	49.91%
Q (M/B of firm assets)	12,920	1.47	0.79
Compustat Firms Acquired	12,732	4.82%	1.70%
Firm Acquired	13,061	1.93%	13.76%
Firm Acquiring	13,061	10.35%	30.46%
Acquisition CAR	13,061	-0.08%	2.28%
Takeover Beta	12,302	0.02	0.64
Market Beta	12,302	1.05	0.47

TABLE II
PORTFOLIO-BASED ABNORMAL RETURNS ASSOCIATED WITH THE G-INDEX

Panel A presents excess returns and abnormal return results (alpha) as measured by the Fama-French-Carhart four-factor model, with portfolios value-weighted by stock's market capitalization. Panel B presents excess and abnormal return results (alpha) with portfolios that are equally weighted. Both excess and abnormal returns are annualized with t-statistics presented below the returns. We use four different time periods. Q1 and Q5 are the results for the portfolio consisting of firms with, respectively, the 20% lowest and highest G-Index scores, while Q1-Q5 is the long-short portfolio that consists of buying stocks in Q1 and simultaneously selling stocks in Q5. D1, D10 and D1-D10 are the analogous results based on sorting stocks into deciles according to firms' G-Index scores.

PANEL A. VALUE-WEIGHTED PORTFOLIOS

	1978 - 2007		**1978 - 1990**		**1990 - 2007**		**1990 - 1999**	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
G-Index	Excess	Carhart	Excess	Carhart	Excess	Carhart	Excess	Carhart
Group	Returns	Alphas	Returns	Alphas	Returns	Alphas	Returns	Alphas
Q1	8.79%	1.59%	7.80%	1.82%	9.50%	1.80%	16.64%	1.87%
	(0.59)	(2.45)	(0.47)	(2.05)	(0.70)	(1.95)	(1.26)	(1.96)
Q5	8.81%	-0.12%	8.12%	1.78%	9.31%	0.89%	12.03%	-2.47%
	(0.57)	(0.10)	(0.43)	(1.38)	(0.73)	(0.59)	(0.92)	(1.60)
Q1-Q5	-0.02%	1.71%	0.31%	0.04%	0.19%	0.91%	4.61%	4.34%
	(0.00)	(1.30)	(0.05)	(0.03)	(0.02)	(0.53)	(0.78)	(2.13)
D1	10.21%	2.37%	10.42%	3.68%	10.06%	2.48%	17.09%	2.46%
	(0.66)	(2.40)	(0.58)	(2.65)	(0.74)	(1.91)	(1.23)	(1.60)
D10	8.40%	-1.56%	7.72%	0.81%	8.89%	-0.95%	9.40%	-6.00%
	(0.52)	(1.07)	(0.39)	(0.42)	(0.67)	(0.55)	(0.69)	(2.72)
D1-D10	1.82%	3.93%	2.71%	2.87%	1.17%	3.43%	7.69%	8.46%
	(0.21)	(2.43)	(0.34)	(1.23)	(0.13)	(1.66)	(0.81)	(2.81)

PANEL B. EQUALLY-WEIGHTED PORTFOLIOS

	1978 - 2007		1978 - 1990		1990 - 2007		1990 - 1999	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
G-Index	Excess	Carhart	Excess	Carhart	Excess	Carhart	Excess	Carhart
Group	Returns	Alphas	Returns	Alphas	Returns	Alphas	Returns	Alphas
Q1	12.68%	3.09%	11.93%	5.55%	13.23%	2.40%	18.50%	3.40%
	(0.73)	(3.43)	(0.60)	(5.46)	(0.87)	(2.16)	(1.24)	(2.22)
Q5	10.75%	-0.17%	8.60%	1.71%	12.31%	0.56%	16.94%	1.56%
	(0.63)	(0.15)	(0.43)	(1.48)	(0.86)	(0.41)	(1.20)	(0.90)
Q1-Q5	1.93%	3.26%	3.33%	3.84%	0.92%	1.84%	1.56%	1.84%
	(0.35)	(3.64)	(0.75)	(2.88)	(0.15)	(1.64)	(0.32)	(1.33)
D1	13.25%	3.53%	14.93%	8.64%	12.04%	1.36%	16.54%	2.02%
	(0.76)	(3.10)	(0.73)	(5.82)	(0.81)	(1.05)	(1.14)	(1.19)
D10	10.42%	-1.05%	8.49%	0.73%	11.82%	-0.18%	15.86%	0.19%
	(0.60)	(0.80)	(0.41)	(0.52)	(0.81)	(0.11)	(1.08)	(0.09)
D1-D10	2.83%	4.58%	6.45%	7.91%	0.21%	1.54%	0.69%	1.83%
	(0.43)	(3.88)	(0.96)	(3.96)	(0.03)	(1.10)	(0.11)	(0.92)

TABLE III
INDUSTRY-ADJUSTED PORTFOLIO-BASED ABNORMAL RETURNS

This table presents results for portfolios sorted on the level of the G-Index, using abnormal returns (alphas) from the four-factor Fama-French-Carhart model adjusted by industry-matched portfolios at the 3-digit SIC level (as done in Johnson, Moorman & Sorescu (2009)) in panel A, and at the 48 Fama-French industry groups level in panel B. See the text for an explanation for industry-adjusting procedures. We show results both for portfolios weighted by stock's market capitalization (VW) and for portfolios that are equally weighted (EW). The abnormal returns are annualized with t-statistics presented below the returns. We use four different time periods. Q1 and Q5, respectively, are the results for the portfolio with the 20% lowest and highest G-Index stocks at portfolio formation, while Q1-Q5 is the long-short portfolio that consists of buying stocks in Q1 and simultaneously selling stocks in Q5. D1, D10 and D1-D10 are the analogous results based on sorting stocks into deciles according to firms' G-Index scores.

PANEL A. INDUSTRY-ADJUSTED ALPHAS USING 3-DIGIT SIC-MATCHED PORTFOLIOS

	1978 - 2007		**1978 - 1990**		**1990 - 2007**		**1990 - 1999**	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
G-Index	Ind-Adjusted Alphas		Ind-Adjusted Alphas		Ind-Adjusted Alphas		Ind-Adjusted Alphas	
Group	VW	EW	VW	EW	VW	EW	VW	EW
Q1	0.14%	1.72%	1.41%	4.45%	-1.06%	0.03%	0.47%	0.50%
	(0.11)	(2.44)	(1.10)	(5.29)	(0.49)	(0.03)	(0.14)	(0.39)
Q5	0.33%	0.05%	0.39%	0.07%	0.79%	0.59%	-0.64%	-0.37%
	(0.39)	(0.07)	(0.32)	(0.07)	(0.67)	(0.69)	(0.41)	(0.32)
Q1-Q5	-0.19%	1.67%	1.02%	4.38%	-1.86%	-0.55%	1.11%	0.87%
	(0.12)	(1.90)	(0.60)	(3.65)	(0.78)	(0.46)	(0.30)	(0.56)
D1	0.42%	3.42%	2.58%	7.72%	0.20%	1.05%	-2.14%	0.32%
	(0.29)	(3.64)	(1.82)	(5.65)	(0.09)	(0.91)	(0.67)	(0.21)
D10	-0.66%	0.09%	0.66%	0.53%	-1.17%	0.21%	-1.20%	0.54%
	(0.61)	(0.10)	(0.37)	(0.36)	(0.86)	(0.17)	(0.64)	(0.33)
D1-D10	1.08%	3.32%	1.93%	7.19%	1.37%	0.84%	-0.94%	-0.22%
	(0.58)	(2.57)	(0.80)	(3.51)	(0.50)	(0.51)	(0.24)	(0.10)

PANEL B. INDUSTRY-ADJUSTED ALPHAS USING 48 FF INDUSTRY GROUP-MATCHED PORTFOLIOS

	1978 - 2007		1978 - 1990		1990 - 2007		1990 - 1999	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
G-Index	Ind-Adjusted Alphas		Ind-Adjusted Alphas		Ind-Adjusted Alphas		Ind-Adjusted Alphas	
Group	VW	EW	VW	EW	VW	EW	VW	EW
Q1	1.02%	2.26%	1.72%	4.49%	0.75%	1.02%	1.83%	0.87%
	(1.02)	(3.11)	(1.53)	(5.55)	(0.50)	(0.97)	(1.09)	(0.70)
Q5	-0.35%	0.08%	-0.16%	0.64%	0.39%	0.49%	-0.90%	0.01%
	(0.40)	(0.11)	(0.13)	(0.60)	(0.34)	(0.57)	(0.60)	(0.00)
Q1-Q5	1.37%	2.18%	1.88%	3.85%	0.36%	0.53%	2.73%	0.87%
	(1.09)	(2.54)	(1.15)	(3.02)	(0.20)	(0.47)	(1.24)	(0.66)
D1	0.75%	2.66%	2.92%	6.94%	0.60%	0.50%	-0.04%	-0.82%
	(0.68)	(2.83)	(2.31)	(5.03)	(0.39)	(0.45)	(0.02)	(0.60)
D10	-0.91%	-0.26%	0.74%	0.43%	-1.22%	-0.06%	-2.10%	-0.06%
	(0.81)	(0.29)	(0.40)	(0.30)	(0.89)	(0.05)	(1.13)	(0.04)
D1-D10	1.66%	2.92%	2.18%	6.51%	1.81%	0.56%	2.07%	-0.75%
	(1.06)	(2.46)	(1.01)	(3.31)	(0.82)	(0.38)	(0.69)	(0.38)

TABLE IV
DISTRIBUTION OF TIME-VARYING FIRM-LEVEL BETAS BY G-INDEX QUINTILE

Over each period over which the G-Index is updated, we regress the daily excess stock return on a constant, daily factor returns plus their one-day lags. The firm level beta is calculated as the sum of the loading on the contemporaneous factor return plus the loading on the one-day lagged factor return. Next, every period we construct G-Index quintiles based on the firm's G-Index score at the beginning of the period. In panel A, we report the percentiles of the market beta using the four-factor Fama-French-Carhart model, by G-Index quintile. In panel B, we report the percentiles of the takeover beta using a five-factor model that also includes the takeover factor from Cremers, Nair and John (2009).

PANEL A: MARKET BETAS

Percentiles of Firm Market Betas, by G-Index Quintile					
Percentile	10%	25%	50%	75%	90%
G-Index Quintile					
1	0.46	0.73	1.02	1.36	1.72
2	0.45	0.73	1.01	1.32	1.69
3	0.46	0.73	1.02	1.36	1.70
4	0.49	0.74	1.01	1.32	1.66
5	0.54	0.78	1.05	1.35	1.68

PANEL B: TAKEOVER BETAS

Percentiles of Firm Takeover Betas, by G-Index Quintile					
Percentile	10%	25%	50%	75%	90%
G-Index Quintile					
1	-0.79	-0.34	0.04	0.41	0.91
2	-0.83	-0.35	0.02	0.39	0.89
3	-0.77	-0.35	0.03	0.40	0.87
4	-0.73	-0.33	0.03	0.40	0.84
5	-0.75	-0.32	0.03	0.39	0.77

TABLE V
FIRM-SPECIFIC, TIME-VARYING BETAS: G-INDEX QUINTILES

The dependent variable, firms' annualized abnormal return, is estimated for each firm for each year using the Fama-French-Carhart four factor model. The Fama-French four factor model was estimated for each firm for each time period between updates of the G-Index (annual for 1978-1989 and approximately every 2 years for 1990-2007) using daily return data. Both Panels A and B regress this dependent variable on dummies representing inclusion in bottom (Q1) or the top quintile (Q5) of the G-Index distribution for the particular year. Panel B uses (but does not report) as additional controls the lagged values of the following variables: inclusion in the S&P 500 index; log of market capitalization; institutional ownership; return on equity; sales growth; Herfindahl score of the firm's industry; dividend yield; the log of the firm's book-to-market ratio and the daily abnormal return. In all specifications year fixed effects were used with some specifications using industry fixed effects (based either on the Fama-French (FF) 48 industries or 3-digit SIC or FF48 x. year fixed effects) or firm fixed effects. Robust standards errors are clustered at the firm level. Coefficient values are multiplied by 100 so they are expressed in percentage terms.

PANEL A: WITHOUT ADDITIONAL CONTROLS

Dependent Variable: Annualized Abnormal Return

	(1)	(2)	(3)	(4)	(5)
Q1	1.51**	1.29*	0.92	1.27*	0.00
	(2.12)	(1.86)	(1.31)	(1.88)	(-0.06)
Q5	-1.78***	-1.47***	-1.48***	-1.31***	-1.00
	(-3.47)	(-2.89)	(-2.83)	(-2.65)	(-1.15)
Fixed Effects	No	48FF	3-digit SIC	48 FF x Year	Firm
Year Fixed	Yes	Yes	Yes	Yes	Yes
Controls	No	No	No	No	No
N	16,256	16,256	16,256	16,256	16,256
R-sq	0.02	0.03	0.05	0.18	0.02

PANEL B: WITH ADDITIONAL CONTROLS

Dependent Variable: Annualized Abnormal Return

	(1)	(2)	(3)	(4)	(5)
Q1	0 .61	0.54	0.11	0.57	0.49
	(0.82)	(0.74)	(0.14)	(0.79)	(0.36)
Q5	-1.18**	-1.17**	-1.21**	-1.08**	-1.41
	(-2.14)	(-2.12)	(-2.11)	(-2.06)	(-1.39)
Fixed Effects	No	48FF	3-digit SIC	48FF x Year	Firm
Year Fixed	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
N	13,130	13,130	13,130	13,130	13,130
R-sq	.02	.04	.06	0.189	.02

TABLE VI
FIRM-SPECIFIC, TIME-VARYING BETAS: CONTINUOUS G-INDEX

The dependent variable, firms' annualized abnormal return, is estimated as in Table V. Panel A regresses this dependent variable on the (continuous) G-Index. Panel B uses (but do not report) as additional controls the lagged values of the following variables: inclusion in the S&P 500 index; log of market capitalization; institutional ownership; return on equity; sales growth; Herfindahl score of the firm's industry; dividend yield; the log of the firm's book-to-market ratio and the daily abnormal return. In all specifications year fixed effects were used with some specifications using industry fixed effects (based either on the Fama-French (FF) 48 industries or 3-digit SIC or FF48 x. year fixed effects) or firm fixed effects. Robust standards errors are clustered at the firm level. Coefficient values are multiplied by 100 so they are expressed in percentage terms.

PANEL A: WITHOUT ADDITIONAL CONTROLS

Dependent Variable: Annualized Abnormal Return

	(1)	(2)	(3)	(4)	(5)
G-Index	-0.32***	-0.26***	-0.22***	-0.31***	-0.21
	(-4.26)	(-3.46)	(-2.97)	(-4.1)	(-1.06)
Fixed Effects	No	48FF	3-digit SIC	48FF x Year	Firm
Year Fixed	Yes	Yes	Yes	Yes	Yes
Controls	No	No	No	No	No
N	16,256	16,256	16,256	16,256	15,669
R-sq	.02	.03	.05	.05	0.23

PANEL B: WITH ADDITIONAL CONTROLS

Dependent Variable: Annualized Abnormal Return

	(1)	(2)	(3)	(4)	(5)
G-Index	-0.18**	-0.18*	-0.14	-0.17**	-0.27
	(-2.23)	(-1.88)	(-1.63)	(-2.18)	(-1.23)
Fixed Effects	No	48FF	3-digit SIC	48FF x Year	Firm
Year Fixed	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	No	Yes
N	12,799	12,799	12,799	12,799	12,799
R-sq	.03	.04	.06	.19	.24

Table VII

THE ASSOCIATION AND M&A ACTIVITY

The dependent variable, firms' annualized abnormal return, is calculated in the same manner as in Table V. The annualized daily abnormal returns are regressed on the (continuous) G-Index; the number of M&A transactions in the particular year; and the interaction of the G-Index and the M&A variable. All specifications use the additional controls of Panel B of Tables V and VI. In all specifications year fixed effects were used with some specifications using industry fixed effects (based either on the Fama-French (FF) 48 industries or 3-digit SIC or 48 FF x. year fixed) or firm fixed effects. Robust standards errors are clustered at the firm level. Coefficient values are multiplied by 100 so they are expressed in percentage terms.

Dependent Variable: Annualized Abnormal Return

	(1)	(2)	(3)	(4)	(5)
G-Index	0.52*	0.57*	0.50*	0.67**	0 .55
	(-1.74)	(-1.92)	(-1.66)	(-2.3)	(-1.32)
G-Index * M&A	-14.1**	-14.4**	-12.8**	-16.7***	-15.7**
	(-2.49)	(-2.56)	(-2.26)	(-3.05)	(-2.43)
Fixed Effects	No	48FF	3-digit SIC	48FF x Year	Firm
Year Fixed	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
N	12,799	12,799	12,799	12,799	12,799
R-sq	.03	.03	.05	.19	.24

Table VIII
Quarterly Earnings Announcements

The dependent variable is firms' abnormal returns during their quarterly earnings announcements. Abnormal returns are measured by reference to the Fama-French-Carhart factors. The announcement windows are 1, 3, 5, 10 and 20 trading days prior to the earnings announcement through the day following the earnings announcement. In Panel A, these are regressed on the (continuous) G-Index and the number of M&A transactions in the particular year. In Panel B, these are also regressed on the interaction of M&A transactions and the G-Index; a dummy variable (POST) taking the value of 1 for the time period after 2001; and the interaction of the POST variable with the G-Index. Robust standards errors are clustered by year.

Panel A

	(1) (T-1, T+1)	(2) (T-3, T+1)	(3) (T-5, T+1)	(4) (T-10, T+1)	(5) (T-20, T+1)	(6) (T-1, T+1)	(7) (T-3, T+1)	(8) (T-5, T+1)	(9) T-10,T+1)	(10) (T-20, T+1)
G-Index	-0.0002	-0.0004**	-0.0004**	-0.0007***	-0.001***	-0.0002*	-0.0004**	-0.0004**	-0.0007***	-0.001***
	(-1.65)	(-2.50)	(-2.53)	(-3.32)	(-3.38)	(-1.73)	(-2.59)	(-2.63)	(-3.41)	(-3.50)
M&A						0.07***	0.08***	0.08***	0.08**	0.11*
						(-4.49)	(-3.95)	(-3.07)	(-2.23)	(-1.96)
N	47933	47933	47933	47933	47933	47092	47092	47092	47092	47092
R-sq	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Panel B

	(1) (T-1, T+1)	(2) (T-3, T+1)	(3) (T-5, T+1)	(4) (T-10, T+1)	(5) (T-20, T+1)	(6) (T-1, T+1)	(7) (T-3, T+1)	(8) (T-5, T+1)	(9) T-10,T+1)	(10) (T-20, T+1)
G-Index	0.0000	0.0000	0.0003	0.0002	0.0005	0.0001	-0.0001	0.0004	0.0004	0.001
	(-0.19)	(-0.13)	-0.55	-0.3	-0.6	-0.24	(-0.14)	-0.47	-0.38	-0.79
M&A	0.09	0.13	0.22*	0.24**	0.41*	0.13	0.14	0.24*	0.29*	0.49*
	-1.07	-1.40	-1.98	-2.09	-1.99	-1.32	-1.21	-1.76	-1.79	-1.96
G-Index*M&A	-0.002	-0.006	-0.01	-0.02	-0.03*	-0.005	-0.006	-0.02	-0.02	-0.04*
	(-0.28)	(-0.58)	(-1.23)	(-1.35)	(-1.70)	(-0.53)	(-0.45)	(-1.10)	(-1.21)	(-1.80)
POST						0.006	0.002	0.003	0.004	0.006
						(-1.40)	(-0.54)	(-0.63)	(-0.51)	(-0.61)
G-Index*POST						-0.0004	-0.0002	-0.0002	-0.0003	-0.0007
						(-1.09)	(-0.35)	(-0.45)	(-0.42)	(-0.84)
N	47,092	47,092	47,092	47,092	47,092	39,260	39,260	39,260	39,260	39,260
R-sq	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

TABLE IX
ABNORMAL RETURNS AND ACQUISITION ACTIVITY

The dependent variable, firms' annualized abnormal return, is calculated in the same manner as in Table V. The annualized abnormal returns are regressed on the (continuous) G-Index; the number of M&A transactions in the particular year; the interaction of the G-Index and the M&A variable; a dummy for whether the company was acquired in the particular year (Target); and the acquisition announcement returns using a three-day window if the firm made an acquisition announcement (Acq_Return). The regressions use (but do not report) as controls the lagged values of the same additional variables used in Panel B of Table V. In all specifications year fixed effects were used with some specifications using industry fixed effects (based either on the Fama-French (FF) 48 industries or 3-digit SIC) or firm fixed effects. Robust standards errors are clustered at the firm level. Coefficient values are multiplied by 100 so they are expressed in percentage terms.

Dependent Variable: Annualized Abnormal Return

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Target	12.4***	12.4***,	12.1***	12.1***	12.1***	12.1***	11.5***	11.4***
	(6.64)	(6.61)	(6.51)	(6.48)	(6.47)	(6.43)	(4.66)	(4.62)
Acq_Return		31.2***,		31.9***		32.5***		27.4**
		(2.96)		(2.98)		(3.02)		(2.13)
G-Index	0.31	0.31	0.35	0.35	0.29	0.29	0.36	-0.36
	(1.11)	(1.11)	(1.27)	(1.27)	(1.02)	(1.03)	(0.89)	(0.89)
G-Index*M&A	-10.6**	-10.5**	-10.7**	-10.6*	-9.00*	-8.98*	-12.1*	-12.0*
	(-1.97)	(-1.96)	(-2.01)	(-2.00)	(-1.66)	(-1.66)	(-1.91)	(-1.90)
Fixed Effects	No	No	48 FF	48 FF	3-digit SIC	3-digit SIC	Firm	Firm
Year Fixed	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	12,799	12,799	12,799	12,799	12,799	12,799	12,799	12,799
R-sq	0.03	0.03	0.04	0.04	0.06	0.06	0.24	0.24

TABLE X
ABNORMAL RETURNS CONTROLLING FOR TAKEOVER FACTOR

The dependent variable, firms' annualized abnormal returns, is calculated using the Fama-French-Carhart four factor model and, in addition, the takeover factor of Cremers, Nair, and John (2009). The annualized abnormal returns so calculated are regressed on the G-Index (either continuous or using dummies for bottom (Q1) and top (Q5) of the G-Index distribution); the number of M&A transactions in the particular year; and the interaction of the two. The regressions use (but do not report) as controls the lagged values of the same variables as in Panel B of Tables V and IV. In all specifications year fixed effects were used with some specifications using industry fixed effects (based either on the Fama-French (FF) 48 industries or 3-digit SIC) or firm fixed effects. Robust standards errors are clustered at the firm level. Coefficient values are multiplied by 100 so they are expressed in percentage terms.

Dependent Variable: Annualized Abnormal Return

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
G-Index					0.21	0.28	0.16	0.44
					(0.49)	(0.66)	(0.37)	(0.79)
Q1	1.0	1.3	1.0	0.3				
	(1.19)	(1.50)	(0.84)	(0.22)				
Q5	-1.3**	-1.0*	-1.1	-1.5				
	(-2.05)	(-1.67)	(-1.47)	(-1.28)				
G-Index * M&A					-8.1	-8.7	-5.9	-10.5
					(-1.04)	(-1.13)	(-0.76)	(-1.17)
Fixed Effects	No	48 FF	3-digit SIC	Firm	No	48 FF	3-digit SIC	Firm
Year Fixed	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
N	12,302	12,302	12,302	12,302	12,799	12,799	12,799	12,799
R-sq	0.02	0.036	0.056	0.26	0.026	0.04	0.06	0.24

TABLE XI
TAKEOVER BETAS

The dependent variable is the beta on the takeover factor of Cremers, Nair and John (2009). The takeover beta is estimated by regressing daily stock returns for a particular firm on the Fama-French four factor model plus the takeover factor using the same time periods as in Table V. The takeover betas are then regressed on the (continuous) G-Index; the number of M&A transactions in the particular year and the interaction of the two. Some specifications control for lag value of the takeover beta. All specification control for (but do not report) the lagged values of the same variables as used in Panel B of Table V. In all specifications year and firm fixed effects were used. Robust standards errors are clustered at the firm level.

Dependent Variable: Takeover Betas

	(1)	(2)	(3)	(4)	(5)	(6)
G-Index	-0.16***		-0.004	-0.02***		-0.004
	(-3.02)		(-0.31)	(-3.10)		(-0.37)
G-Index * M&A		-0.30***	-0.25		-0.30***	-0.26
		(-3.29)	(-1.29)		(-3.38)	(-1.29)
Fixed Effects	Firm	Firm	Firm	Firm	Firm	Firm
Year Fixed	Yes	Yes	Yes	Yes	Yes	Yes
Lag Takeover Beta	No	No	No	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
N	12,314	12,105	12,105	12,302	12,094	12,094
R-sq.	0.25	0.25	0.26	0.25	0.25	0.25