THIRTY YEARS OF CORPORATE GOVERNANCE:
DETERMINANTS & EQUITY PRICES

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Abstract

We introduce in this paper a dataset that tracks approximately 1,000 firms' G- and E-index scores, as well the individual provisions that constitute these indexes, over the 1978-1990 period. Combining this data with the 1990-2008 IRRC data we are able to track firms' corporate governance over a thirty year period. We document that most changes in firms' G- and E-index scores occurred during the 1980s (with relative stability thereafter) and that heightened M&A activity during the 1980s was an important determinant of firms' decisions to adopt G- and E- corporate governance provisions. We also document a robust negative association between the G-Index and Tobin's Q and that increases in a firm's G-Index has a far greater negative effect on firm valuation when a firm happens to be in an industry experiencing "high" levels of M&A activity. Moreover, we find the negative firm valuation effects of certain antitakeover provisions (classified boards, poison pills and G-Index generally) was significantly greater after the judicial approval of the poison pill in 1985. Finally, we find a robust association between "good" corporate governance and positive abnormal returns including controlling for industry effects as in Johnson, Moorman and Sorescu (2008).

I. INTRODUCTION

In this paper, we introduce a comprehensive corporate governance database, which starting in 1978 tracks for a sample of approximately 1,000 firms whether these firms had any of the 24 corporate governance variables tracked by IRRC (Investor Responsibility Research Center) for the 1990-2006 time period. The IRRC database became very prominent in empirical corporate governance research after Gompers, Ishii and Metrick (2003) introduced their G-Index based on this data and documented a strong empirical link between governance and equity prices. The G-Index is a composite of the 24 variables, adding one point if any of the provisions is present, where a higher score arguably indicates more restrictions on shareholder rights or a greater number of anti-takeover measures.

Our corporate governance database also includes data on state takeover statutes, firm opt-ins and opt-outs from these statutes, state default rules (such as states' default rules on ability of shareholders to act by written consent) as well as a number of firm-level corporate governance variables not tracked by IRRC, such as whether the provision was contained in the corporate charter or bylaw or whether shareholders had the ability to remove directors without cause. Based on our corporate governance database, we calculate each firm's G-Index and E-Index (see Bebchuk, Cohen and Ferrell (2009)) scores starting in 1978. By combining our dataset with the IRRC database which covers the 1990-2006 time period, we obtain comprehensive corporate governance data for the 1978-2006 time period. In turn, we combine this corporate governance data with data on M&A activity and firm financial data, including data on firms' returns.

The importance of studying the 1978 – 1990 period is underscored by the fact that this period is characterized by widespread corporate governance changes (such as changes in firms' G-Index and E-Index scores), while after 1990 such changes largely cease and little in the way of time variation is observed. For example, the median G-Index score equals 5 from 1978 – 1983, then increases by one a year until 1989, while the distribution of the G-Index remains basically constant after 1990. During this same time

period of rapid corporate governance changes, as we document, there were significant changes in the incidence and type of M&A activity. The two were not unrelated as our results document.

We investigate possible determinants of firms' corporate governance choices both for the 1978-1990 period as well as the entire 1978-2006 time period. We find no evidence for the "reverse causation" story in the 1978-1990 period, i.e. that firms with low firm value tended to adopt more G-Index and E-Index provisions. In fact, we find that the higher valued firms tended to adopt more provisions, although this relationship disappears once firm fixed effects are included. The "reverse causation" may play a (minor) role in explaining changes in firms' corporate governance in the 1990-2006 time period.

A very significant role as a determinant of firms' corporate governance choices during the 1978-1990 time period is given by M&A activity, such as friendly and leverage buyout (LBO) activity. For example during the 1979-1990 period, a one standard deviation shock increase in the percentage of the overall market value engaged in friendly deals in the past year is associated with an aggregate increase in the G-Index of 1.7 points. Furthermore, we find more specific associations between past industry-specific takeover activity and governance choices. Therefore, the increase in firm-level antitakeover measures seems in large part a response to (or in anticipation of) increased takeover activity. We also investigate how governance is related to the likelihood of being taken over in the future, which can shed light on the extent to which takeovers are anticipated by firms' corporate governance provisions.

Gompers, Ishii and Metrick (2003, henceforth GIM) document a strong cross-sectional association between corporate governance and firm value, finding that higher G-Index scoring firms are more prevalent at firms with lower Tobin's Q, and, also interesting, that firms with higher (lower) G-Index scores have lower (higher) subsequent stock returns. GIM advance different explanations for these findings, including investors learning about the importance of governance over this period. Subsequent literature has actively debated various competing explanations, see e.g. Cremers and Nair (2005), Core, Guay, and Rusticus (2006), Johnson, Moorman, and Sorescu (2008) and Cremers, Nair and John (2009).

The significant variation of governance provisions within firms across time in our sample allows another re-examination of the association between governance and firm value. In particular, the inclusion of firm fixed effects in pooled panel regressions mitigates the endogeneity of firms adopting governance provisions depending on their circumstances. Using both firm and year fixed effects, we document a robust negative association between the G-Index and Tobin's Q.

Given the observed link between governance changes and M&A activity, a natural source of this negative association may be that firms with greatly increased G-Index scores thereby strongly reduce expected takeover activity, as takeovers generally are very beneficial to the target shareholders. As takeover bids tend to cluster in industries, we conjecture that past industry-specific takeover activity is a good instrument for the channel through which governance affects firm value. And indeed, we document that increases in a firm's G-Index have a more negative effect on firm valuation when a firm happens to be in an industry that is experiencing "high" levels of M&A activity relative to firms with the G-Index score increases but in an industry experiencing "low" levels of M&A activity in that year (during the 1978-1990 time period, with firm and year fixed effects). To the extent that such industry-specific takeover waves are exogenous to the firm and not proxying for something else, this result suggests a causal link between governance and firm value.

Another way to address endogeneity concerns is through the occurrence of a major juridical event affecting the impact of corporate governance provisions, the occurrence of which was uncertain. The 1985 Delaware Supreme Court *Moran v. Household International* decision judicially approved, for the first time, poison pills (a provision in both the E-Index and the G-Index). This decision removed a substantial level of uncertainty surrounding how poison pills (which were only first deployed in 1982) would be treated by the Delaware judiciary. Moreover, this decision likely substantially increased the potency of classified boards as a takeover defense (Bebchuk, Coates & Subramanian 2002). Consistent with a causal relationship between governance and firm value, we find that the negative effect on firm valuation of certain antitakeover provisions (classified boards, poison pills and the G-Index generally) was much greater after the

poison pill passed judicial muster for the first time in 1985 (with often no effect at all before 1985).

Finally, we examine whether "good" corporate governance (i.e., low G-Index and E-Index scores) was associated with higher abnormal stock returns for the 1978-1990 period as well as the entire 1978-2006 period. We find that there was indeed such an association. Moreover, we find that the abnormal stock returns accruing to governance-sorted portfolios are robust to controlling for industry-effects as in Johnson, Moorman, and Sorescu (2008).

The remainder of this paper is organized as follows. Section II describes the data. As one of the major contributions of this paper is the introduction of the new dataset of corporate governance provisions over 1979-1990, we include significant details on the data collection process and how the data compares to the IRRC sample. Section III considers determinants of firms' corporate governance choices. In Section IV, we examine the association between firm value and governance. Section V employs the Delaware Supreme Court's 1985 *Moran v. Household International* decision as a structural break. Finally, Section VI investigates abnormal stock returns accruing to governance-sorted portfolios and Section VII concludes.

II. DATA

1. The 1978-2006 Corporate Governance Dataset

RiskMetrics (which acquired the Investor Responsibility Research Center (IRRC)) has maintained a corporate governance database which has served as an extremely important source of data on firms' corporate governance provisions since the publication of Gompers, Ishii & Metrick (2003). The IRRC data has now been used in a large number of published academic articles on corporate governance and even more that are currently still in working paper form. The IRRC database covers a number of firm-level corporate governance provisions, firms' states of incorporation, the presence of various state antitakeover statutes and firm opt-ins and opt-outs to these statutes for a large number of firms. A number of the firm-level provisions concern the presence of

takeover provisions (such as classified boards and poison pills), the presence of certain types of compensation arrangements (such as golden parachutes and compensation plans), and a variety of additional provisions that at least arguably affect the balance of power between managers and shareholders (such as supermajority voting requirements for amending the firm's charter or bylaw).

In total, the IRRC corporate governance database covers twenty-three firm-level corporate governance variables for selected firms in 1990, 1993, 1995, 1998, 2000, 2002, 2004 and 2006. Each one of these volumes has this corporate governance data for between 1,400 and 1,800 firms. In any given year of publication, the firms in the IRRC volume accounted for more than 90% of the total U.S. stock market capitalization. The IRRC corporate governance database does not include any data on firms prior to 1990. Information on the IRRC's twenty-three firm-level corporate variables has simply not been available on a similar comprehensive basis for earlier time periods. As a result, studies that wish to use the IRRC database have been forced to begin their analysis in 1990.

We have comprehensively collected data for the 1978-1990 time period on (i) firms' firm-level corporate governance provisions (including those variables tracked by the IRRC for the 1990-2006 time period); (ii) states' corporate governance default rules; and (iii) state antitakeover statutes (including those tracked by the IRRC for the 1990-2006 time period).

We then combined our dataset with the corporate governance data maintained by IRRC for the 1990-2006 period resulting in a corporate governance dataset covering a total of about 2,200 of firms over the 1978-2006 period. We then combined the resulting 1978-2006 corporate governance database with (i) Compustat data containing financial data on each firm for the 1978-2006 period; (ii) CRSP return data for the 1978-2006 period; (iii) SDC Platinum's data on merger and acquisition activity for the 1979-2006 period, including data on friendly, leverage buyout and hostile takeovers.[1]

We will describe our construction of our 1978-1990 corporate governance dataset in five steps. First, we will provide an overview of the content of our corporate governance database. Second, we address the compatibility of our dataset with that of the

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[1] The SDC Platinum merger and acquisition data begins in 1979 and not 1978.

IRRC which covers the subsequent 1990-2006 time period. Third, we provide a detailed description how the firms were selected for inclusion in our dataset. Fourth, we describe the wide variety of the data used to gather information on firms' firm-level corporate governance provisions, state default rules and state antitakeover statutes. Fifth and finally, we describe various controls we conducted to ensure the accuracy and completeness of our data.

2. Content of the 1978-1990 Corporate Governance Database

a. Firm-Level Corporate Governance Provisions

The twenty-three IRRC firm-level corporate governance variables are (1) cumulative voting; (2) poison pill; (3) confidential (secret) voting; (4) unequal voting; (5) dual-class shares; (6) classified board; (7) fair price provisions; (8) director indemnification provisions; (9) limits on the ability of shareholders to amend the corporate charters; (10) limits on the ability of shareholders to amend the corporate bylaws; (11) supermajority voting requirements for mergers; (12) antigreenmail provisions; (13) director liability; (14) limits on the ability of shareholders to call special meetings; (15) limits on the ability of shareholders to act by written consent; (16) pension parachutes; (17) golden parachutes; (18) silver parachutes; (19) compensation plans; (20) severance agreements; (21) indemnification contracts; (22) blank check preferred; and (23) state of incorporation. The definitions of these variables are contained in the introduction to the 1990 IRRC volume as well as the appendixes to Gompers, Ishii, and Metrick (2003) and Bebchuk, Cohen and Ferrell (2009). For every year every firm in our database, we coded the presence or absence of these twenty-three firm-level corporate governance variables.[2]

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[2] In addition to these IRRC variables, we also collected data on four additional variables for all the firms in our database: (24) whether the board or shareholders are granted the power to fill vacancies on the board; (25) maximum board size; (26) actual board size; and (27) whether shareholders have the power, by majority vote, to remove a director with or without cause (or whether, instead, a supermajority vote is required for removal or director removal by shareholders is limited to "for cause"). These additional corporate governance variables can be quite consequential. Whether the current directors or the shareholders have the power to fill vacancies on a board, such as a vacancy caused by death, resignation or an increase in the board's size (variable 24) can be quite important in different contexts. For example, a board that can increase the size of the board and unilaterally appoint the directors that will fill the vacancies thereby created can effectively "pack" the board (Coates 2001). Whether the board's size can, in fact, be

b. State Defaults

Unlike the IRRC database, we also coded for several state defaults (i.e., the governing state rule when the company's charter or bylaw is silent on an issue) which can be quite important. Specifically, we coded for whether the state's default is to limit the ability of shareholders to call a special meeting (relevant to variable 14) and whether it is to limit the shareholders' ability to act be written consent (relevant to variable 15). We also coded for whether a majority of shareholders under the state's default rule can fill board vacancies (relevant to variable 24) and whether a majority of shareholders under the state's default rule can fire directors without cause (relevant to variable 27). State defaults were based on our researching the history of states' corporate law codes during the 1978-1990 period which was then double-checked against Coates (2003) and the Corporate Library's coding of these state defaults.

c. State Antitakeover Statutes

Whether a firm was subject to any of the following state statutes was also coded: (1) business combination laws; (2) control share cash-out statutes; (3) control share acquisition statutes; (4) fair price statutes; (5) directors' duties statutes; (6) antigreenmail statutes; (7) mandatory cumulative voting statutes; and (8) director liability statutes. The year of the statutes adoption was also coded to ensure that prior to adoption firms incorporate in that state were not treated as subject to the statute. The IRRC coded the first six types of antitakeover statutes, but not the last two – mandatory cumulative voting and director liability statutes – although the IRRC did track cumulative voting and director liability provisions at the firm-level.

We collected information on state statutes from a number of sources. We gathered information on state antitakeover statutes from Jarrell & Bradley (1980); Bhagat & Brickley (1984), Gilson (1988); Karpoff & Malatesta (1989), Mahla (1991); IRRC STATE TAKEOVER LAWS (1999), and Betrand and Mullainathan (2002). For some state statutes, firms in their charters or bylaws could, if they wanted to, opt-out (or more rarely opt-in)

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increased will turn on the difference between actual and maximum board size (variables 25 and 26). Actual board size can also modify the effects of a firm having cumulative voting (variable 26). In general, the impact of cumulative voting tends to become less important as the board size decreases (Bhagat & Brickley 1984). Whether shareholders have the power to remove a director without cause can obviously affect the balance of power between shareholders and management (variable 27).

of a state statute. Accordingly, whether firms opted-out or opted-in to any of the above state statutes in their charter or bylaw was also coded for when we coded firms' charters and bylaws.

Based on this data we coded for each firm in our database their E-Index score and their G-Index score.[3]

3. Compatibility of the C-F Database with the IRRC Database

Substantial effort was taken to ensure that our coding of the IRRC variables during the 1978-1990 time period was consistent with the coding by the IRRC over the 1990-2006 time period. This was important given our goal of ensuring that our database can be combined with the IRRC database to construct a comprehensive corporate governance database covering the entire 1978-2006 period.

Given the importance we attached to compatibility we began our data collection by developing a detailed coding protocol for the twenty-four G-Index corporate governance variables by replicating the IRRC's coding for these variables in the year 1990 for two hundred randomly selected firms covered by the 1990 IRRC volume. This was done by collecting and analyzing the two hundred firms' 1990 10-K, 10-Q, and documents and contracts attached thereto (which included firms' charters and bylaws and contracts relating to compensation arrangements).

Based on our construction of the IRRC coding protocol we adopted the same coding protocol for nineteen G-Index corporate governance variables. The remaining five corporate governance variables – limits on the ability of shareholders to call special meeting, limits on the ability of shareholders to act by written consent, limits on anti-greenmail, limits on director liability and director duties – were not coded using the IRRC coding protocol we constructed. The reason for this divergence with respect to the

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[3] The G-Index of a firm is the sum of the number of the following 24 provisions a firm has: (1) classified board; (2) limitation on amending bylaws; (3) limitation on amending the charter; (4) supermajority to approve a merger; (5) golden parachute; (6) poison pill; (7) limitation on special meeting; (8) limitation on written consent; (9) elimination of cumulative voting; (10) no secret ballot; (11) director indemnification; (12) director indemnification contract; (13) limited director liability; (14) compensation plan; (15) severance agreement; (16) unequal voting rights; (17) blank check preferred; (18) fair price requirements; (19) cash-out law; (20) director duties; (21) business combination statute; (22) antigreenmail provision: (23) pension parachute; and (24) silver parachute.

limits on the ability to call a special meeting variable is that the IRRC treats a firm as having no limit on the ability to call a special meeting if the firm's charter or bylaw is silent on the issue. However, for a number of states, including most prominently Delaware, the default is that shareholders cannot call a special meeting. A similar issue arises for limits on written consent. The state default in a number of states, such as New York and Ohio, is that a majority of shareholders cannot act by written consent. In other words, for both limits on special meeting and written consent silence in the charter or bylaws does not necessarily mean there are in fact no limits.

A second difference from IRRC is the number of state antitakeover statutes we identify. This affects our coding of the anti-greenmail, limits on director liability and director duties variables (as will be documented in Table I, this only makes a material difference for the last two variables). As for antigreenmail statutes, we agree with all five states identified as having antigreenmail statutes in the IRRC database (AZ, MN, NY, TN and WI) but with one addition. Michigan as of 1988 had an antigreenmail statute, still in effect as of 1990, which is not coded as such in the IRRC. In addition to coding for charter and bylaw provisions that limit director liability, as IRRC also does, we identified five state statutes adopted during the 1980s that limited director liability without the need for a charter or bylaw provision (IN, OH, FL, WI and ME). Finally, as for director duties statutes, only two states (IN and PA) were identified as having these statutes in 1990 in the IRRC. We have identified a total of nineteen states (GA, HI, IA, ID, IL, IN, KY, LA, MA, ME, MI, MN, MY, NJ, NM, NY, OH, OR, and WI) that had a director duties statute at some point in the 1980s, all of which was in effect in 1990 (with a number of additional states passing director duties statutes in the 1990s such as Pennsylvania in 1990).

In order to test the compatibility as well as the accuracy of our coding we compared the incidence of the twenty-four G-Index corporate governance provisions as of 1989 in our database to the incidence of these provisions as reflected in the IRRC database as of 1990. This comparison is reflected in Table I. For the nineteen corporate governance provisions for which we used the same coding protocol as the IRRC, there were only two noticeable discrepancies. The incidence of director indemnification in our dataset is 96% while the IRRC reports an incidence of 44%. After checking a number of

instances in which the IRRC reports no director indemnification provision against the firm's charter, we conclude that the IRRC has very substantially underreported the incidence of this provision. The second discrepancy is the incidence of blank check which is far higher in the IRRC database (76% versus 24% in our database). As for this variable, we have concluded that the IRRC's figure is likely the more accurate number given the spotty reporting of blank check in firm's 10-Ks, our primary source of information for this variable. We have rerun the results reported in this paper without using the blank check variable and they remain unaltered.

There are two other noticeable discrepancies between our data and that of the IRRC and that is the incidence of limits on special meeting (88% in 1989 versus 24% in 1990) and limits on written consent (71% in 1989 versus 24% in 1990). Using our best efforts to incorporate state defaults for these variables into IRRC's 1990 data, these discrepancies largely disappear (limits on special meeting in 1989 having an incidence of 88% versus 75% in 1990, and limits on written consent in 1989 having an incidence of 71% in 1989 and 64% in 1990).

4. Firms Covered

The 1978 panel set in our database was based on an initial list of all firms that appear either (1) on the 1978 Fortune 1,000 list of firms; (2) in the S&P 500 as of January 1, 1978; or (3) had more than one billion dollars in sales for 1977 as reported in Compustat. The year 1977 was used for sales because inclusion in the Fortune 1,000 is based on 1977 data. Any firms that meet any of these three criteria were included in our 1978 panel if they met the following two conditions: (1) the firm was also tracked in the CRSP/Compustat merged database for 1978 (and could, therefore, be assigned a permno number); and (2) had filed either a 10-K or proxy statement at any point in the 1978-1989 as reflected in the comprehensive SEC reports microfilm database at Harvard Business School's Baker Library – the primary source for SEC reports used in constructing our database – or, alternatively, Thomson Financial. Thomson Financial was used as it would on occasion, albeit rarely, have SEC filings not on microfilm at the Baker Library. The vast majority of firms on our initial list had, in fact, permno numbers and had filed a 10-

K or proxy statement during the 1978-1989 period. There were, in total, 1,079 firms in our 1978 panel set. This panel set contains approximately 88% of all our firm-year observations in our corporate governance dataset.

Given the rate of drop-outs, due to factors such as acquisition and going-private activity, we updated our database at two five-year intervals: 1983 and 1988. The year 1983 is interesting as it is at the start of the huge boom in acquisition activity in the 1983-1987 period, while the year 1988 is interesting as it immediately presages the collapse of the takeover market, in particular the hostile takeover market, in the late 1980s. The 1983 panel set consisted of all firms that appear on the 1983 Fortune 500 list (the Fortune 1,000 list was not published in 1983); all firms in the S&P 500 as of January 1, 1983; and all firms with more than one billion dollars in sales in 1982 as reported in Compsutat if, as with the 1978 panel set, (1) the firm was also tracked in the CRSP/Compustat merged database for 1983: and (2) had filed a 10-K or proxy statement in the 1983-1989 period. Again, the vast majority of firms meet these two conditions. There were 152 firms in our 1983 panel set that were not already being tracked in the 1978 panel set consisting of approximately 9% of all our firm-year observations in our corporate governance dataset. Finally, we created a 1988 panel set consisting of all firms on the 1988 Fortune 500 list (as with 1983, the Fortune 1,000 was not published in 1988); all firms in the S&P 500 as of January 1, 1988; and all firms with more than one billion dollars in sales in 1987 as reported in Compustat if the same two conditions – inclusion in CRSP/Compustat and SEC filing – were satisfied. There were 252 firms in our 1988 database not already being tracking in either the 1978 or 1983 panel set contributing approximately 4% of the year-firm observations in our corporate governance database.

For each one of the firms in our three panel sets, we tracked for every year during the relevant time period (period 1978-1989 inclusive for the 1978 panel set; 1983-1989 inclusive for the 1983 panel set; and 1988-1989 inclusive for the 1988 panel set), the corporate governance variables, states laws and opt-ins/opt-outs referred to earlier. Coverage of a firm ceased if the firm was acquired by another firm or ceased filing 10-K and proxy statements. However, if a firm was the acquirer, the firm remained in our database post-acquisition. This treatment is consistent with the Compustat protocol on when firms are still tracked under their original firm identifier post-acquisition. The year

1989 was chosen as the last year for all three of our panels given that the IRRC database begins in 1990.

5. Data Collection for the Firm-Level Corporate Governance Variables

In order to code for firms' firm-level corporate governance variables, we first pulled every 10-K, 10-Q, and proxy statement for every firm in one of our three panels for every year starting with the year that the firm was added to the database (either 1978, 1983 or 1988). More specifically, information on cumulative voting, poison pills, confidential (secret) voting, unequal voting, dual-class shares, classified boards, blank check preferred, state of incorporation and compensation plans was gathered from a firm's 10-K and 10-Q reports for every year the firm was in the database (in contrast to the IRRC which did not update firm-level corporate governance provisions each year, but every two or three years). A number of the IRRC's compensation variables – pension parachutes; golden parachutes; silver parachutes; compensation plans; severance agreements; and indemnification contracts – were coded based on the various contracts and documents attached as exhibits to the firm's 10-K and 10-Q, such as employment contracts, stock option plans and pension agreements.

A number of firm-level corporate governance variables were coded based on an analysis of firms' charters and bylaws. To this end, we gathered approximately a quarter of a million pages of charters, bylaws and amendments thereto. Firms' charters and bylaws were obtained from three sources: (a) attachments to the firm's 10-K which often included the firm's charter, bylaws and amendments thereto; (b) attachments to the firm's 10-Q which occasionally included the firm's charter, bylaws and amendments thereto; and (c) the Delaware Bureau of Corporations, which very generously provided all the charters and charter amendments for all the Delaware firms – 415 firms in total – in our 1978 panel.

Based on an analysis of firm's charters and bylaws, information on a number of variables was obtained. These bylaw- or charter-based variables included classified board (for which information was also gathered directly from the 10-K); fair price provisions; director indemnification provisions; limits on the ability of shareholders to amend the

corporate charters; limits on the ability of shareholders to amend the corporate bylaws; supermajority voting requirements for mergers; antigreenmail provisions; director liability provisions; limits on the ability of shareholders to call special meetings; limits on the ability of shareholders to act by written consent; whether the board or shareholders are granted the power to fill vacancies on the board; maximum board size; actual board size; and whether shareholders have the power, by majority vote, to remove a director with or without cause.

For four of these variables (special meeting, written consent, ability to fill vacancies and fire without cause), we coded whether the firm's bylaws or charter were silent on the ability of shareholders to engage in the activity or whether it affirmatively stated there was no limitation on shareholders ability to engage in these activities. If the bylaw and charter were silent on the issue, whether shareholders could engage in the activity will turn on the state's default rules. Whether a particular provision, such as for example a classified board or supermajority voting requirements for mergers, appears in the corporate charter or a bylaw was also coded. The reason why this distinction can be important is due to the fact that it is often the case that it is relatively easy for shareholders to change the corporate bylaws, assuming there is no limitation on the ability of shareholders to amend the corporate bylaws, while it can be difficult if not impossible for shareholders to unilaterally change the corporate charter (Coates 2001). In the IRRC, the distinction between relevant provisions appearing in the corporate charter or bylaw is not taken into account.

6. Quality-Controls

In addition to the primary sources of information on firms' corporate governance we performed a number of quality-controls to ensure the accuracy and completeness of our dataset. First, the 1990 IRRC volume occasionally contained information on when a provision was adopted prior to 1990. Each one of these entries was double-checked against the coding in our database.

Second, IRRC published corporate governance volumes in 1984, 1985 and 1986, which covered whether some firms had certain corporate governance provisions. These

volumes mostly covered firms that were in the S&P 500 and therefore covered far fewer firms than the 1990 IRRC volume. These pre-1990 volumes also tracked only a modest subset of the twenty-three firm-level variables with the variables tracked and the firms covered varying from volume to volume. Again, every entry in these IRRC volumes was compared with our coding of the primary data.

Third, all the corporate governances reported in the annual 10-K reports – cumulative voting; poison pill; confidential (secret) voting; unequal voting; dual-class shares; classified board; and compensation plans – were checked against the firm's 10-K a second time for every firm by a second researcher.

Fourth, several studies contained information on dual-class companies against which we checked our coded for dual-shares. The GIM database of dual-class shares companies for the 1994-2005 period was used to ensure that any firms in that database coded as having dual-class shares that also appear in our database are also coded as having dual-class shares unless they adopted dual-class shares after 1989. In addition, the Lease, McConnell & Mikkelson (1983); Deanglo & Deanglo (1985) and Jarrell & Paulson (1988) studies contain lists of dual-class companies for their firm samples against which we checked our database.

Fifth, several studies compiled data on corporate governance provisions in addition to dual-class provisions for samples of firms that overlaps with our database. These studies are Lambert & Larcker (1985), which contains a list of 90 firms with golden parachutes between 1975-1982, and Jarrell & Paulson (1987), which lists firms with various antitakeover protections. Our database was double-checked against these studies.

Sixth, *Corporate Control Alert*, a monthly publication that started in 1983, compiled comprehensive listings periodically during our time period of all firms that had adopted poison pills and the date of adoption. We used this publication to double-check all the poison pill codings in our database.

7. Missing Data

Despite our efforts, there remained some firms for some years, especially for the year 1978, for which we were unable to collect the full complement of 24 G-Index provisions. For purposes of our empirical analyses, we disregard a firm in a given year if it has more than 8 missing G-Index provisions. With the removal of these firms for these years, the median number of missing provisions for a firm in our dataset was 6 in 1978 and zero thereafter. Starting in 1981, over 80% of firms have no missing provisions at all in the sample we used for our analysis. However, before 1981, the sample as used still includes many firms with several missing provisions. In the regression analyses we present in this paper, we reran our regressions so as to include a variable indicating how many provisions were missing as a robustness test. This variable was always statistically insignificant. We also make sure all results are robust to excluding the pre-1981 data.

III. DETERMINANTS OF FIRMS' CORPORATE GOVERNANCE CHOICES

1. The Changing Corporate Governance Picture in the 1980s

The 1980s saw dramatic changes in firms' corporate governance arrangements with far more stability in those arrangements prevailing during the 1990s. As a result, it is imperative to have corporate governance data for a large sample of firms over the 1980s in order to understand the reason for why firms have the corporate governance arrangements they currently have and to identify the determinants of firms' corporate governance choices. A clearer understanding of the determinants of firms' corporate governance choice, besides being an important issue in its own right, can also help cast light on the extent to which poor corporate governance (as proxied by the G-Index and E-Index) causes lower firm valuation or, alternatively, low valued firms adopt poor corporate governance.

The G-Index consists of 24 corporate governance provisions which appear to be beneficial to management and which may or may not be harmful to shareholders (Gompers, Ishii, & Metrick (2003)). A number of these provisions relate to antitakeover provisions, shareholder rights and compensation arrangements. The E-Index consists of 6

corporate governance provisions, which are a subset of the 24 G-Index provisions, and consists of classified boards, limits on the ability of shareholders to amend the charter or bylaw, supramajority voting requirements for mergers, poison pills, and golden parachutes. (Bebchuk, Cohen & Ferrell 2009)

Figure 1 tracks the evolution of the G-Index of all the firms in our sample (with fewer than 8 missing provisions) over the 1978-2006 time period. We plot the 10%, 20%, 50%, 80% and 90% percentiles in each year.

Figure 1. G-Index percentiles, 1978-2006
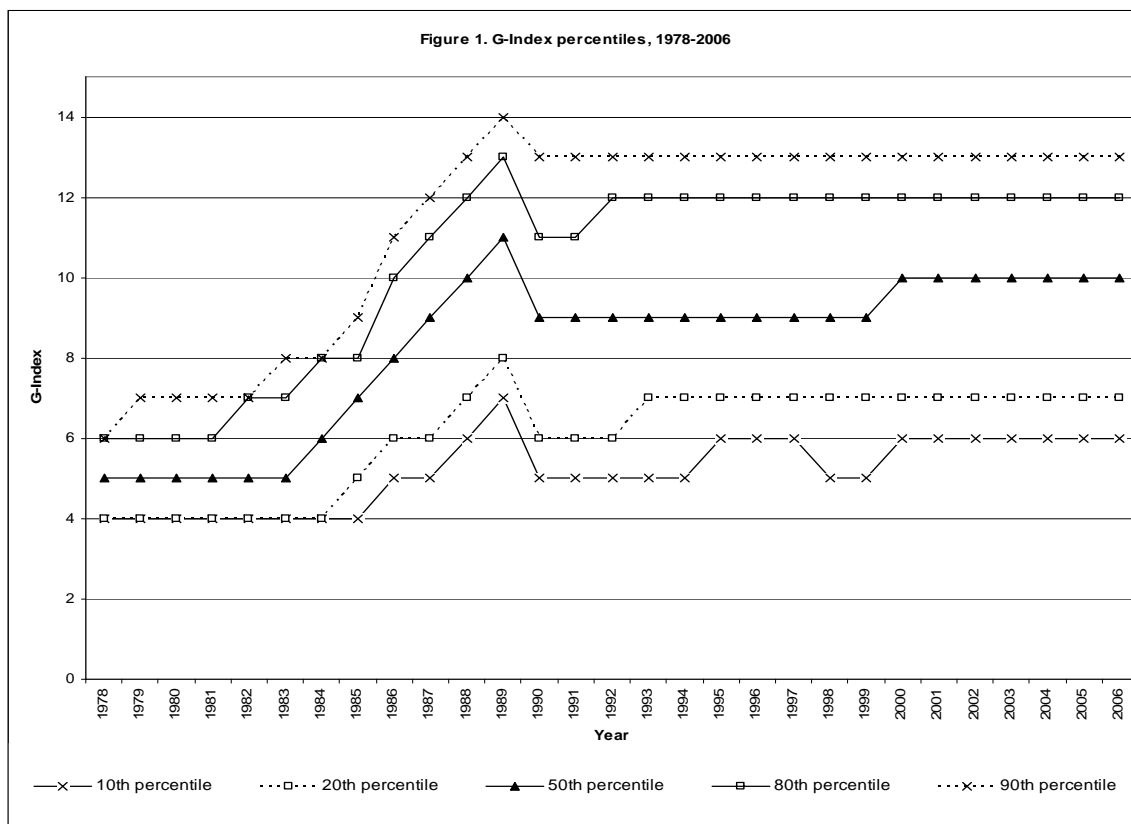
As Figure 1 illustrates, the distribution of the G-Index significantly shifted upward across all the percentiles over this time period. The median G-Index score equals 5 from 1978-1983, then increases by exactly one point a year from 1983-1989 to reach 11 in 1989, shifts to 9 in 1990 and remains almost constant thereafter.

Firms likewise also experienced substantial increases in the E-Index scores during the 1980s. Changes in firms' E-Index scores, again broken down by their percentile rankings, is graphed in Figure 2.

Figure 2. E-index percentiles, 1978-2006
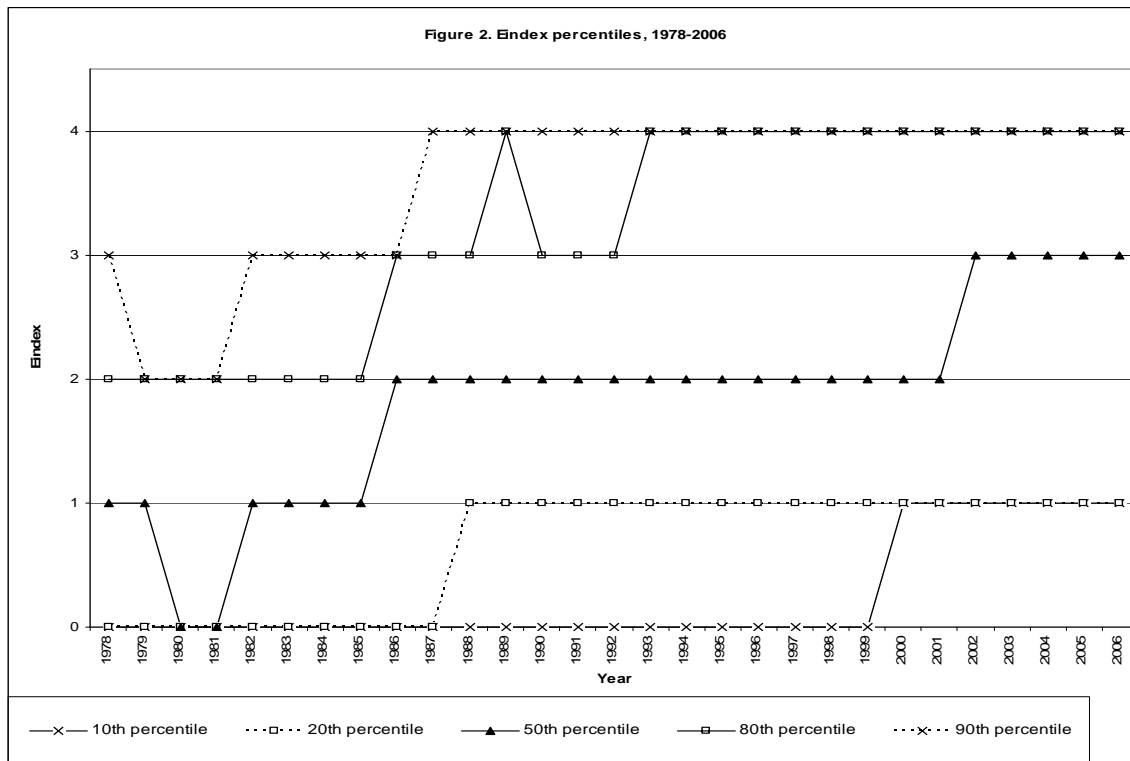
As is also evident from Figure 2, the variation between firms in their E-Index scores, particularly in the first half of the 1980s, was lower than that for firms' G-Index score.

Not only was the 1980s a period of dramatic change in firms' corporate governance arrangements, but it was also a period of substantial changes in M&A activity. The simultaneity of changes in firms' corporate governance arrangements and the M&A landscape during the 1980s is, as section 3 will document, far from coincidental. Figure 3 displays the incidence of M&A activity broken down into three categories – friendly takeovers, hostile takeovers, and LBOs – over the 1979-2006 time period for all the companies in our sample. LBOs are separately broken out as these transactions constitute a noteworthy subset of the friendly takeover activity that occurred during the 1980s. LBOs are characterized by the use of high leverage to fund the purchase price, with a completed LBO resulting in ownership being concentrated in the merchant bank that structured the transaction and, typically, in the firm's management.[4]

For each of our three categories of M&A activity we graphed in Figure 3 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

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[4] See Black & Gilson, pp. 399-400.

of the beginning of the year (represented by the solid lines); 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).

Figure 3. M&A activity: precentage of market cap and number of firms, 1979-2006
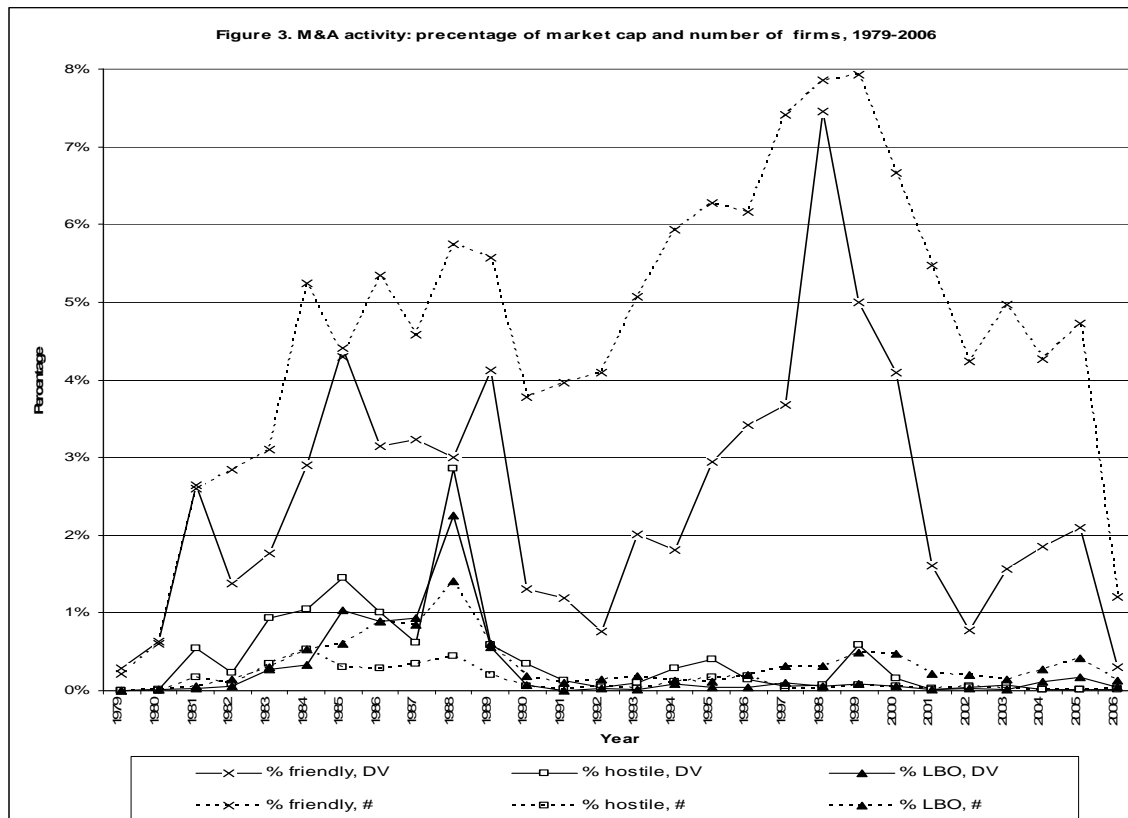
As is apparent from Figure 3, M&A activity, while starting at a very low base at the beginning of this period, occurred on an extensive scale both during the 1980s and the 1990s. Consistent with findings documented in other papers the composition of M&A activity was substantially different in the 1980s relative to the 1990s (e.g. Andrade, Mitchell and Stafford 2001). As Figure 3 documents, a meaningful portion of the M&A activity in the 1980s took the form of LBOs and hostile takeovers with M&A activity largely consisting of friendly takeovers thereafter. In terms of deal value as a percentage of market capitalization, LBO and hostile takeover activity experienced a significant jump in 1983, remained strong till 1988 at which point LBO and hostile takeover activity peaked and thereafter quickly declined.

In fact, in terms of the numbers of transactions, as the descriptive statistics on M&A activity in Panel A of Table III documents, LBOs exceeded the number of hostile

takeovers in the 1980s. The mean incidence of the percentage of firms subject to a LBO for the 1979-1990 period is 0.39% versus 0.31% for hostile takeovers. On the other hand, in terms of deal value, hostile takeover activity tended to be modestly higher than that of LBOs during the 1980s.

2. The Effect of Firm Valuation on Firms' Corporate Governance Choices

A common "reverse causation" story in the corporate governance literature is the possibility that a firm with lower firm valuation will tend to adopt more G-Index provisions in order to insulate the firm from hostile takeovers (see e.g. Lehn, Patro & Zhao 2006). As a result, the documented correlation between low firm valuation and the G-Index index, according to this story, might be at least in part due to reverse causation.[5]

With this "reverse causation" story in mind, we examined whether a firm's valuation, as measured by that firm's Tobin's Q, helps explain a firm's G-Index score. In our regressions we control for a number of other variables including, importantly, firm fixed effects. All the independent variables, including the firm's Tobin's Q, are lagged by one year to the firm's G-Index score (the dependent variable). All our regressions cluster standard errors at the firm-level. The results of this analysis are contained in Panel A of Table II. For a description of Tobin's Q and all other firm controls, see the Appendix (which is not available yet, but all variable construction follows GIM).

Interestingly, the coefficient on Tobin's Q is actually positively associated with 1% statistical significance with having an increased G-Index index for both the entire 1979-2006 period (coefficient of 0.29) as well as the 1979-1990 period separately (1.23) when year fixed effects were not controlled for. However, when year fixed effects are added this statistically significant positive association disappears for both the entire 1979-2006 period (coefficient of -0.07, 1% statistical significance) and the 1979-1990 period considered separately (0.05, no statistical significance even at the 10% level). This substantial change in the regression results of adding year fixed effects indicates that firms tended to increase their G-Index scores in years in which firm valuations were

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[5] Of course, the cause for why firms can maintain their low firm valuation after insulating themselves from hostile takeovers might be the corporate governance provisions that provide such insulation. In other words, the ability to maintain a low firm valuation might be caused by the corporate governance provisions.

generally rising with the result that the positive association between firms' valuation and changes in firms' G-Index scores either disappears (1979-1990 time period) or actually reverses (1979-2006 time period). As for the 1991-2006 time period, there is also a negative association between Tobin's Q and a firm's G-Index score controlling for both year and fixed effects (-.05, 1% statistical significance). Finally, when one looks at the relationship between a firm's return on assets (ROA), while controlling for a firm's Tobin's Q, there is no statistical significant association with changes in a firm's G-Index for any of the time periods (1979-2006; 1979-1990; and 1991-2006) when year fixed effects are included.

In short, for the period in which firms' corporate governance arrangements were changing most rapidly (the 1979-1990 period), there was no identifiable effect of firm valuation on firms' corporate governance choices, though the effect of a low firm valuation on a firm's corporate governance choices predicted by the "reverse causation" story does hold true to some extent during the 1990-2006 time period. However, the association seems quite minor, which a one standard deviation decrease in Tobin's Q being associated with an increase in the G-Index score of 0.05 x 0.8 = 0.04. Of course, these results are still entirely consistent with a firm's corporate governance choices themselves having in turn a substantial impact on the firm's firm valuation, an issue which Sections IV and V will address.

3. The Effect of M&A Activity on Firms' Corporate Governance Choices

As already discussed, there were significant levels of hostile and LBO activity, as well as friendly takeovers, in the 1980s. This naturally raises the question of the effect that the incidence of hostile, LBO or friendly M&A activity had on firms' corporate governance choices.

Accordingly, Panel B of Table II investigates the effects of the lagged values of aggregate LBO, friendly and hostile M&A activity on firms' corporate governance changes using the same lagged independent variables used in the Panel A regressions. And, as before, all these regressions cluster standard errors at the firm-level and include firm fixed effects, such that we effectively try to predict changes in the G-Index, while

controlling for the endogenous choice of the G-Index when the firm first appears in our sample. We first consider aggregate takeover activity in Panel B, and then examine industry-level (using the 48 Fama-French (1997) industry groups) M&A activity with year fixed effects in Panel C.

Panel B documents that there is a clear association (with 1% statistical significance) between a firm's decision to increase its G-Index score during the 1979-1990 period and the aggregate number of firms undergoing LBOs (coefficient value of 304). Aggregate LBO activity by deal value also had a noteworthy association, with 1% statistical significance, during the 1979-1990 period (148). Not surprisingly, LBOs are not important drivers of corporate governance choices in the 1990-2006 period (with neither the LBO, deal value nor the number of LBO coefficients having statistical significance) a period in which there was a sharp decline in LBO activity (see Panel A of Table III).

With respect to friendly takeovers, whether by number or deal value, they had relatively little effect on changes in firms' G-Index scores in either the 1979-1990 period or the 1990-2006 period when LBO activity is separately controlled for. On the other hand, the number of friendly M&A activity does have a positive and statistically significant effect on changes in firms' G-Index scores for the entire 1979-2006 period (coefficient of 25, 1% statistical significance) even while controlling for LBO activity. Lastly, there is no discernable relationship in the Panel B regressions between hostile takeovers and firms' corporate governance choices.

When one looks at the effect of the type of M&A activity at the industry level using both firm and year fixed effects (and using the Fama-French 48 industry groups classification (1997)) on changes in firms' G-Index scores in that industry, which are documented in Panel C of Table II, LBO activity again emerges as a noteworthy variable. The strongest effect is that of the number of LBOs in a firm's industry which is associated, at the 10% statistical significance level, with increases in firms' G-Index scores during the 1979-1990 period (3.7 coefficient) and the entire 1979-2006 period (3.0 coefficient) even after controlling for year and fixed effects as well as the other independent variables used in the Panel A regressions.

4. Discussion of the M&A Activity Results

What might explain why LBO activity, whether at the aggregate or industry level, and whether by number of LBOs or LBO deal value, has a strong association with increasing firms' G-Index scores? Our interpretation is that LBOs were, to a significant degree, defensive reactions to actual or potential unwanted third party acquisitions and, accordingly, when firms observed an increase in LBO activity they perceived an increased likelihood of being subject to such an unwanted acquisition with the result that these firms adopted more GIM provisions.[6]

In assessing the plausibility of this interpretation, it is important to bear in mind that it is well documented that many LBOs in the 1980s were in fact undertaken against the backdrop of a possible third party acquisition of the firm. For instance, Lehn and Poulsen (1989) report that for their sample of 263 LBOs over the 1980-1987 time period, 43% were undertaken against the explicit backdrop of either the submission of a competing takeover bid or the rumor that such a bid was about to be proffered. They also found that the rumor of or submission of a competing takeover bid was an important predictor of LBO activity in the 1980s. The importance they place on a potential third party acquisition on the incidence of LBOs is consistent with other papers focused on LBO activity in the 1980s (see also, e.g., Easterwood 1989; Morck, Shleifer & Vishny 1988).

In other words, many LBOs in the 1980s can be viewed as a defensive reaction by existing management to the possibility of an unwanted third party acquisition (see also Lowenstein 1985). In such a setting it would be natural to expect that firms observing an increased level of LBO activity might react be adopting various defensive arrangements. To further explore our interpretation for why LBOs had a strong statistically association with firms' corporate governance changes we formulated the following three hypotheses:

(1) Firms that increase their G-Index scores will experience fewer LBOs given the reduced need to worry about unwanted third party acquisition offers and, hence, the need to engage in a defensive LBO. Of course, if firms anticipate such unwanted offers

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[6] See, e.g., Renneboog & Simons (2005) (surveying the academic literature on the determinants of LBOs and concluding that "U.S going-private decisions in the 1980s frequently are motivated by anti-takeover strategies.") Id. at 17.

sufficiently far in advance, they could load up on sufficient antitakeover provisions such that in equilibrium, no association between LBO activity is apparent in the data. As a result, any empirical link would also suggest that these unwanted advances by third parties are not fully anticipated.

(2) Firms that would most likely face unwanted third party acquisition offers are, all else being equal, those firms with lower Tobin's Q as a lower Tobin's Q would suggest an increased likelihood of management being replaced in the event of a successful third party acquisition. Accordingly, firms with lower Tobin's Q are, all else being equal, more likely to experience a LBO as a reaction to a potential unwanted third party acquisition.

(3) Firms that would most likely face unwanted third party acquisition offers are, all else being equal, those firms with lower G-Index scores. Hence, firms that actually undergo LBOs are more likely to have lower G-Index scores.

To test these first two hypotheses, we examined the effect on the probability of a firm experiencing an LBO of a change in a firm's G-Index score during the 1979-2006 period with, of course, controlling for a number of other potentially relevant variables. We also examined the effect on the probability of a firm experiencing a friendly or hostile takeover of a change in the firm's G-Index score during this same period. The results of these logit regressions are presented in Panels B and C of Table III. For each logit regression, we also report the marginal effect associated with a one standard deviation shock to the independent variable.

Consistent with hypothesis one, there is a strong negative relationship, with statistical significance at the 1% level, between a firm's G-Index score (an independent variable) and the probability of that firm experiencing an LBO (the dependent variable), controlling for a number of other variables including Tobin's Q, year fixed effects, and different types of M&A activity, both at the aggregate and industry level. The marginal effect of the G-Index in the Panel B regressions (which control for M&A activity by deal value) equals -0.17% with 1% statistical significance (and again -0.19 with 1% statistical significance in the Panel C regressions, which control for M&A activity by the number of deals). Given the infrequent occurrence of LBOs (0.21% of firm-years in 1979-2006 and 0.39% in 1979-1990), this is a large effect.

Consistent with hypothesis two is the fact that the probability of a LBO is in fact negatively affected by a firm's Tobin's Q. When LBO activity is measured by deal value, Tobin's Q has a coefficient of -1.01 with 1% statistical significance (Panel B) and a similar statistically significant at the 1% negative coefficient on Tobin's Q was found when LBO activity was measured by the number of LBOs (Panel C). The marginal effect of -0.12% is again economically meaningful.

These results are consistent with the literature on firm's Tobin's Q and LBO activity. Morck, Shleifer & Vishny (1988) report that in their sample firms undergoing defensive LBOS, approximately half their sample of LBOs, had dramatically lower Tobin's Q than other firms in their sample. Opler and Titman (1993) report that once industry effects were controlled for Tobin's Q had a statistically significant (at the 10% level) negative effect on the probability of a LBO for the 1985-1990 period and a negative effect, albeit without statistical significance, for the 1980-1984 period. The increased probability of low-valued firms being targeted by LBOs is also consistent with studies suggesting that the new ownership structure created by a LBO often created higher powered incentives for management, particularly with respect to their use of free cash, with increases in firm value resulting, incentives that were lacking prior to the LBO (see, e.g., Kaplan (1989) and Smith (1990)).

As for hypothesis three, we examined the G-Index scores of companies that underwent a friendly non-LBO takeover versus the G-Index scores of companies that underwent a LBO. LBO companies had a mean G-Index score of 7.1 while friendly, non-LBO takeover companies had a G-Index score of 9.1 which was statistically significant difference at the 1% level using a t-test of means. Firms undergoing a hostile takeover had a mean G-Index score of 8.9 which was also a statistically significant difference from that of LBO companies at the 1% level using a t-test of means.

Interestingly, an increase in a firm's G-Index score is not associated with a lower probability of a hostile (or friendly) takeover. Of course, such a finding is entirely consistent with a G-Index score having an effect on hostile takeover probability if those firms that knew they were particularly likely to be subject to a hostile takeover had already "loaded" up on antitakeover defenses. In such a situation, the lack of correlation would be due to the market being in "equilibrium" with increased antitakeover defenses

offsetting what would otherwise have been an increased probability of takeover. In assessing the likelihood of the market being in "equilibrium", it is worth noting that in contrast to both hostile and friendly takeovers, which were well-known transactions long before 1978 and were in fact were both common transactions in the 1960s, LBOs were an entirely new and unexpected type of transaction with the very first one of a public company occurring in 1979 (Black & Gilson, p.35).

IV. CORPORATE GOVERNANCE AND FIRM VALUATION

We now turn to the central issue of whether firm valuation is affected by a firm's corporate governance arrangements (as proxied by the G-Index and E-Index). GIM document a strong cross-sectional association between corporate governance and firm value, finding that higher G-Index score (i.e., more anti-takeover provisions) are more prevalent at firms with lower Tobin's Q. GIM propose different explanations for this, including investors learning about the importance of governance over this period and thereby increasing firm values for well-governed firms. The significant variation of governance provisions within firms across time in our sample allows another re-examination of the association between governance and firm value. In particular, the inclusion of firm fixed effects in pooled panel regressions mitigates the endogeneity of firms adopting governance provisions depending on their circumstances. Using both firm and year fixed effects, we document a robust negative association between the G-Index and Tobin's Q. This is our first primary finding. However, the negative association of the G-Index with firm valuation does not survive the introduction of firm fixed effects for the 1990-2006 time period.

Second, given the observed link between governance changes and M&A activity, a natural source of this negative association may be that firms with greatly increased G-Index scores thereby strongly reduce expected takeover activity. As Andrade, Mitchell and Stafford (2001) report, the median bid premium — approximately 38% — is very high, suggesting that takeovers generally are very beneficial to the target shareholders. As takeover bids tend to cluster in industries, we conjecture that past industry-specific takeover activity is a good instrument for the channel through which governance affects

firm value. The negative association of firm valuation and a higher G-Index is substantially affected by whether the firm happens to be in an industry that is subject to a LBO or friendly takeover merger wave at that time. Specifically, increases in a firm's G-Index have a more negative effect on firm valuation when a firm happens to be in an industry that is experiencing "high" levels of M&A activity relative to firms with the G-Index score increases but in an industry experiencing "low" levels of M&A activity in that year (during the 1978-1990 time period, with firm and year fixed effects). To the extent that such industry-specific takeover waves are exogenous to the firm (and not proxying for something else), this result suggests a causal link between governance and firm value.

1. Corporate Governance and Firm Valuation

Panel A of Table IV presents annual cross-sectional regressions of firms' industry adjusted Tobin's Q on the G-Index covering the 1978-2006 time period for a total of twenty-nine regressions. For each of these annual regressions the coefficient value on G-Index was consistently negative, except for one year (1981, though not statistically significant). The Fama-MacBeth coefficient value for the 1978-2006 period was -1.71 with 5% statistical significance. Focusing on sub-periods, the 1978-1990 Fama-MacBeth coefficient is -1.43 with 10% statistical significance and the 1991-2006 Fama-MacBeth coefficient is -1.95 with 1% statistical significance.[7]

As for the E-Index, all twenty-nine annual cross-sectional regressions of firms' industry-adjusted Tobin's Q on the E-index covering the 1978-2006 time period were negative with a Fama-McBeth coefficient value of -4.50% and 5% statistical significance. For the 1978-1990 the Fama-McBeth coefficient is -2.57 with 10% statistical significance and -5.97% for the 1991-2006 time period with 1% statistical significance.

Panel B of Table IV contains pooled regressions of industry adjusted Tobin's Q on the G-Index, along with a number of other controls, including year fixed effects

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[7] If one focuses instead on the 1982-1990 period (given that 1982 was the year M&A activity began to sharply accelerate) the Fama-MacBeth coefficient is -1.82 with 1% statistical significance. The relationship between M&A activity and the firm valuation effects of firms' corporate governance will be explored more thoroughly in the next section.

throughout. A higher G-Index again is associated with lower firm valuation with the coefficient estimate (-0.02) being negative and statistically significant at the 1% level for the 1978-2006 period. This basic finding of a negative and statistically significant relationship between a firm's G-Index and a firm's industry-adjusted Tobin's Q survives the introduction of industry fixed effects (coefficient value -0.02 and 1% statistical significance) and firm fixed effects (coefficient value of -0.01 with p value of 6%). Perhaps not unsurprisingly given the data demands of these regressions, when one looks at sub-periods (1978-1989 and 1990-2006) the coefficient value on the G-Index with firm and industry fixed effects is not statistically significant, although the negative coefficient estimate for the G-Index of -0.02 for the 1990-2006 period is suggestive with a p-value of 11%.

The results for when one uses firms' return on assets (ROA) and net profit margins (NPM) as dependent variables rather than Tobin's Q, are reported in Panel C of Table IV. The results are not as clear-cut. While the coefficient value on the G-Index is negative for both the entire 1978-2006 both when ROA is the dependent variable (-0.03) and when NPM is the dependent variable (-0.1) neither is statistical significant even at the 10% level. Therefore, GIM's findings of a negative association between the G-Index and accounting profitability do not seem robust to extending the time period. However, these findings on ROA and NPM are consistent with the possibility that the negative effect of the G-Index on firm valuation significantly operates through reducing the probability of takeover, and hence (among other things) lowering the probability of obtaining the high premiums that are often associated with takeovers. One would expect such an effect to show up in Tobin's Q which presumably would reflect future expected takeover premiums. The relationship between M&A activity and the G-Index's negative effect on firms' Tobin's Q is further explored in the next section.

2. Lower Firm Valuation Significantly Affected by Industry-level M&A Activity

Our hypothesis in this section is that a firm in a given year that was in an industry experiencing high levels of LBO or friendly takeover activity would experience a more negative effect from having a higher G-Index than firms in the same industry with lower

G-Index scores and firms with the same G-Index score but in an industry that year that was not experiencing high levels of LBO or friendly takeover activity. Our hypothesis exploits the fact that the level of M&A activity in an industry in a given year can help identify whether the G-Index causes lower firm valuation. For example, Mitchell and Mulherin (1996) report that mergers occur in waves; and within a wave, mergers strongly cluster by industry. This is further exemplified by the logit results in Table III, indicating a link between past and future takeover activity, both at the aggregate and industry levels. The literature (see e.g. also Andrade, Mitchell and Mulherin (2001) has interpreted these findings as suggesting that mergers might be reactions to unexpected shocks to industry structure, such that industry-specific waves could be considered as exogenous to the firm (and not proxying for some other endogenous choice by the firm, if these merger waves are thus driven by unexpected industry shocks). In other words, to the extent that industry M&A merger waves are exogenous, this can help both identify whether the G-Index causes lower firm valuation and whether that lower firm valuation is related to its interaction with M&A activity.

In order to test this hypothesis, we created several dummy variables. One dummy variable indicates whether a firm in a given year is in an industry (using the 48 Fama-French industry groups) experiencing a "high" level of friendly takeover activity, and another dummy for whether a firm in a given year was in an industry experiencing a "high" level of LBO activity, and analogously we construct dummies for "low" levels of friendly or LBO activity. "High" and "low" levels of activity are determined by whether the industry was in the top quartile or the bottom quartile in terms of the M&A activity. We used one-year lagged values for LBO and friendly takeover activity, which according to the Table III takeover logit results predict next year's LBO and friendly takeover activity. We interact these dummy variables with the G-Index in pooled panel regressions with industry-adjusted Tobin's Q as the dependent variable. In our regressions, we controlled for a number of other variables including year fixed effects plus industry or firm fixed effects.

Our hypothesis implies that the interaction between the G-Index and being in an industry in a given year with a "high" level of LBO or friendly activity should have a negative coefficient given that antitakeover provisions are more harmful the more likely

M&A activity happens to be. It is worth noting that the G-Index should be relevant to firm valuation in industries undergoing a friendly merger wave if in fact a significant number of friendly deals either start out as "hostile" or are consummated against the implied threat of a hostile takeover. The SDC Platinum database, which we use, defines friendly takeovers as takeovers that ultimately received the approval of the target board even if the initial bid was hostile or the target board's approval was obtained only against the backdrop of a hostile bid otherwise being launched.

The results of our analysis can be found in Panel D of Table IV. Turning first to the 1979-2006 period, the coefficient value on the interaction between being a firm in an industry with a "high" level of friendly takeover activity and the G-Index is statistically significant at the 1% (-0.01) but with the introduction of firm fixed effects the interaction effect is still slightly negative but no longer statistically significant. The G-Index standing by itself still has a statistically significant at the 1% level negative effect on firm valuation (-0.02) and remains statistically significant negative even with the introduction of firm fixed effects (-0.01).

Turning to the 1979-1990 period, the coefficient value on the interaction term of being a firm in an industry experiencing "high" levels of LBO activity and the G-Index is 1% statistically significant and negative even controlling for firm and industry fixed effects (-0.01). With the introduction of this interaction term and controlling for firm and industry fixed effects, the G-Index by itself does not have any statistically significant association with firm valuation. As for the interaction term of being a firm in an industry experiencing "high" levels of friendly takeover activity and the G-Index for the 1979-1990 period, the coefficient value (-0.01) is negative and 1% statistical significant even controlling for firm fixed effects. And again, the G-Index by itself no longer has any statistically significant relationship with firm valuation.

Finally, focusing on the 1990-2006 period, the interaction term for "high" levels of friendly takeover activity and the G-Index is 1% statistically significant (-0.01) without firm fixed effects, but is no longer statistically significantly negative with firm fixed effects. It was not possible to run the interaction term with "high" levels of LBO activity in the 1990-2006 period given the low incidence of LBOs during this period.

In short, we find that an industry with "high" levels of LBO M&A activity or "high" levels of friendly M&A activity is associated with statistical significance at the 1% level with a more pronounced negative effect of the G-Index on firm valuation for firms in that industry for the 1979-1990 period. These results survive the introduction of firm fixed effects. In terms of the 1991-2006 period we find negative and statistically significant interaction effects for friendly takeover activity, but this result is not robust to firm fixed effects.

<center>V. 1985 AS A STRUCTURAL BREAK</center>

1. The Pre-1985 Legal Landscape

Poison pills were first deployed in 1982 and were adopted by a rapidly increasing number of firms throughout 1983 and 1984. However, the legality of poison pills, and the circumstances under which boards could use poison pills to block unwanted third party acquisitions, was an important, widely commented upon, unresolved legal question during this time. The seminal decision validating (although not unconditionally) the poison pill was in 1985 in the *Moran v. Household International* decision.[8] The firm's decision to adopt a poison pill in that case was subject, according to the Delaware Supreme Court, to the business judgment rule. The Delaware Supreme Court, it is also worth emphasizing, did indicate at the same time that the use of the poison pill would be subject to judicial review to ensure that it was being used consistent with the board of directors' fiduciary obligations.

The judicial validation of the poison pill also had the effect of increasing (perhaps dramatically) the antitakeover effect of a classified board given that control of the board was now necessary in a situation where a poison pill was outstanding. In contrast, as emphasized in Bebchuk, Coates and Subramanian (2002), classified boards prior to the ability of a firm to use the poison pill poised little if anything in the way of a barrier to a bidder who wished to acquire a control block. Classified boards would still have arguably had pre-1985, however, the potentially beneficial effects of increasing board stability and

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[8] 500 A.2d 1346 (Del. 1985).

board independence, common justifications for having a classified board other than their antitakeover effect.

In other words, 1985 arguably marked a critical turning point in the ability of firms to use poison pills, and poison pills combined with classified boards, to block unwanted third party acquisitions. We therefore test to see whether the firm valuation effect of the G-Index in general, and the poison pill and classified board in particular, were different pre- versus post-1985. As this judicial decision resolved a major source of legal uncertainty surrounding the use of antitakeover tactics, this event is another useful way to address endogeneity concerns of the negative association between firm value and takeover provisions.

2. Empirical Results

Given our discussion in preceding subsection, the hypothesis we wish to test is that the G-Index, poison pills and classified boards have a more significant negative effect on firm valuation post-1985 relative to pre-1985. Our dependent variable is industry-adjusted Tobin's Q. We create dummy variables for whether the year is prior to 1985 or 1985 (with post-1985 being our baseline time period) and interacted these dummy variables with the G-Index, classified board and poison pill. We control throughout for year fixed effects. The results of our analysis are reported in Table V.

As the interaction results for the G-Index x Pre-1985 variable documented in columns (1)-(3) show, the G-Index did indeed have a more negative impact in the post-1985 period versus pre-1985 with the interaction effect having a p value of 7% in columns (1) and (2). The G-Index standing alone is also statistically significant negative with a p value of 8% even in the fixed effects regression (column (3)).

Turning to the individual corporate governance provisions, classified boards with 1% statistical significance had a stronger negative effect on firm valuation post-1985 relative to the pre-1985 period. Moreover, classified boards standing alone also have a 1% statistically significant negative effect on firm valuation. As for poison pills, poison pills are strongly negatively associated with firm valuation with 1% statistical significance. However, the interaction effect, while indicating a more negative firm

valuation effect of poison pills post-1985, is not quite statistically significant at the 10% level.

VI. RETURNS

Finally, one of the most intriguing findings in Gompers, Ishii, and Metrick (2003) is that stocks with low G-Index scores vastly outperform stocks with high G-Index scores in their time period of 1990-1999. Subsequent papers exploring these return findings are, for example, Cremers & Nair (2005), Bebchuk, Cohen & Ferrell (2009), Cremers, Nair & John (2009), and Giroud & Mueller (2008). We investigate whether having "better" corporate governance (as proxied by a lower G-Index) resulted in positive abnormal stock returns. As these papers do, we weighted our portfolios of "good" and "poor" corporate governance firms by firms' respective market capitalizations as well as use equally weighted portfolios. We report both annualized "excess returns" (over the risk-free rate) and annualized abnormal returns, i.e. alphas generated by the Fama-French-Carhart four-factor model that includes market, size, value and momentum factors.

Table VI reports the results for value-weighted portfolios sorted on their G-Index score in Panel A and for equally-weighted portfolios in Panel B, for different time periods and sorting stocks in both quintile and decile groups. While GIM employ fixed G-Index cut-off points 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 G-Index over 1978-1990. However, after 1990 the top and bottom G-Index decile portfolios are very close to GIM's 'dictatorship' and 'democracy' portfolios, respectively.

For the 1978-2006 time period we document, whether using value-weighted or equally-weighted portfolios, that there are positive, strongly statistically significant abnormal returns associated with going long the bottom G-Index decile of firms with "good" corporate governance and going short the top G-Index decile of firms in (4.17% using value-weighted portfolios and 4.29% using equally-weighted portfolios). For quintile portfolios and the 1978-2006 time period, the results are naturally weaker and no longer statistically significant for value-weighted portfolios though still economically and

statistically significant for equally-weighted portfolios (alpha of 2.87% per year with a t-statistic of 3.25).

Across time periods, the equally-weighted long-short positions of higher-low G-Index stocks generate higher abnormal returns for the 1978-1990 time period, while the value-weighted portfolios exhibit higher abnormal returns after 1990. For example, the equally-weighted decile portfolios have an alpha spread of 7.54% (t-statistic of 3.90) for 1978-1990 but of only 1.43% (t-statistic of 1.05) for 1990-2007. For value-weighted portfolios, the long-short decile spread equals 3.32% (t-statistic of 1.47) for 1978-1990 and 4.23% for 1990-2007, and a very large 8.46% (t-statistic of 2.81) for the GIM time period of 1990-1999. Of course, estimating abnormal returns over short time periods such as one or even two decades is always very noisy, such that these patterns could just be due to the large volatility of stock returns. Most importantly, we can conclude that the finding of GIM that stocks with lower G-Index scores have large abnormal returns is robust to significantly expanding the time series.

Table VII presents analogous results on quintile and decile portfolios based on the E-Index of Bebchuk, Cohen & Ferrell (2009). The main conclusion is over the full period of 1978-2007, portfolios with low E-Index stocks significantly outperform high E-Index stocks, with statistically significant alphas for both quintile and decile spread portfolios using either value- or equally weighting. For example, the long-short portfolio buying stocks with E-Index in the lowest decile and selling stocks in the highest decile generates an annualized alpha of 3.37% (t-statistic of 2.56) using value-weighting and of 2.26% (t-statistic of 2.82) using equally-weighting. However, almost all of the abnormal return seems due to the post-1990 period. This may be largely due to a limited cross-sectional spread in firms' E-Index scores before 1990. For example, the difference between the 10% and 90% percentiles of the E-Index equals 2 until 1982 and 3 until 1986, while the difference equals 4 in the GIM period of 1990-1999 (and 3 thereafter).

The next robustness check is motivated by Johnson, Moorman, and Sorescu (2008), who question the extent to which the GIM return results are robust to clustering of high and low G-Index across industries. Their main methodology involves constructing three-digit SIC-code industry-adjusted 'democracy' and 'dictatorship' portfolios, by subtracting from the original 'democracy' and 'dictatorship' portfolio

returns the returns of an industry-matched portfolio. Specifically, the industry-matched portfolio for the 'democracy' portfolio contains only stocks that are assigned a G-Index score but are not included in the 'democracy' portfolio, and have the same three-digit SIC-codes as the firms in the 'democracy' portfolio. The industry-matched portfolio for the 'dictatorship' portfolio is constructed analogously.

Table VIII reports the industry-adjusted quintile and decile G-Index portfolio results for the full time period of 1978-2007.[9] While Johnson, Moorman and Sorescu (2008) only consider value-weighted industry-matched portfolios, we present results for both value- and equally-weighted industry-matched portfolios, and as before for both value- and equally-weighting the top and bottom G-Index portfolios. The main finding is that industry-adjusting lowers the abnormal returns accruing to governance, but the spread in abnormal returns of low and high G-Index portfolios remains both economically and statistically significant. For example using value-weighted portfolios, the long-short portfolio of buying (selling) stocks with lowest (highest) decile G-Index scores generates an industry-adjusted, annualized abnormal return equal to 2.86% (t-statistic of 1.79, significant at 10%) using value-weighted industry-matched portfolios, and equal to 4.15% (t-statistic of 4.15%) using equally-weighted industry-matched portfolios. The equally-weighted governance portfolios are more robust statistically, with significant alpha spreads for both quintile and decile sorts. For example, the long-short portfolio of buying (selling) stocks with lowest (highest) decile G-Index scores generates an industry-adjusted, annualized abnormal return equal to 2.79% (t-statistic of 2.27) using value-weighted industry-matched portfolios, and equal to 3.70% (t-statistic of 3.04) using equally-weighted industry-matched portfolios.

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[9] We also replicate the results in Johnson, Moorman and Sorescu (2008) for the time period they consider, 1990-1999, and confirm their results.

TABLE I

COMPARISON OF CF DATABASE AS OF 1989 WITH IRRC DATABASE AS OF 1990

This table compares the incidence of the twenty-four corporate governance provisions in the G-Index as of 1989 as reflected in the Cremers-Ferrell database with the incidence of these provisions as reflected in the IRRC database as of 1990. Any difference in incidence between the two years greater than the absolute value of .10 is in bold. For five of these provisions – limits on written consent, limits on special meeting, director liability, director duties and anti-greenmail – the Cremers-Ferrell coding of these variables varied from that of the IRRC. For these five, IRRC data was used to estimate the incidence of these five provisions using the Cremers-Ferrell coding (the "IRRC corrected" incidence)

Provisions	1989 Incidence	1990 Incidence	Difference
Classified	.57	.57	0.00
Supermajority	.44	.39	-.05
Limit to amend bylaws	.20	.14	-.06
Limit to amend charter	.04	.03	-.01
Poison pill	.52	.52	0.00
Golden parachute	.53	.50	-.03
Limits to special meeting	.88	.24	**-.64**
Limits to special meeting (IRRC corrected)	.88	.75	-.13
Limits to written consent	.71	.24	**-.47**
Limits to written consent (IRRC corrected)	.71	.64	-.07
No cumulative voting	.82	.83	.01
No secret ballot	.96	.98	.02
Director indemnification K	.20	.17	-.03
Director indemnification	.96	.41	**-.55**
Director liability	.87	.73	**-.15**
Director liability (IRRC corrected)	.87	.80	-.07
Compensation plans	.46	.44	-.02
Severance agreements	.19	.14	-.05
Unequal vote	.01	.02	.01
Fair price	.62	.57	-.05
Cash out law	.41	.40	-.01
Director duties	.38	.10	**-.28**
Director duties (IRRC corrected)	.38	.38	0.00
Business combination	.79	.84	.05
Anti-greenmail	.22	.19	-.03
Anti-greenmail (IRRC corrected)	.22	.21	-.01
Pension Parachutes	.06	.04	-.02
Silver parachutes	.04	.04	0.00
Blank check	.24	.76	**.52**

TABLE II
DETERMINANTS OF FIRMS' G-INDEX SCORES

The dependent variable in all three panels is firms' G-Index score focusing on one of three time periods: 1979-2006; 1979-1990; and 1991-2006. Moreover, all the independent variables in all three panels are the previous year's values (one year lagged). Panel A are pooled panel regressions with firm fixed effects and, in some regressions, year fixed effects. Panel B are also pooled panel regressions with firm fixed effects which include as independent variables aggregate M&A activity broken down into three categories: hostile takeovers, LBOs and friendly takeovers. The Panel B regressions do not include year fixed effects. Panel C are also pooled panel regressions with firm fixed effects which include as independent variables M&A activity at the industry level (using the Fama-French 48 (1997) classification) again broken down into three categories. Panel C regressions include year fixed effects. Standard errors were clustered throughout at the firm-level and are White (1980) robust.

		PANEL A					
		1979-2006		*1979-1990*		*1991-2006*	
		(1)	(2)	(3)	(4)	(5)	(6)
Log Book	coefficient	0.86	0.13	2.67	0.14	0.37	0.08
	t-statistic	6.25	4.18	9.76	2.98	6.12	2.24
Capex/Assets	coefficient	-3.19	0.67	-7.15	0.57	-0.18	0.61
	t-statistic	-2.68	2.91	-3.65	1.52	-0.51	2.06
Capex missing	coefficient	0.58	0.21	1.19	0.14	0.09	0.07
	t-statistic	2.82	1.74	1.59	0.27	1.25	0.88
Leverage	coefficient	1.09	0.40	1.76	0.64	0.21	0.21
	t-statistic	4.38	4.25	5.11	3.18	1.79	2.11
R&D	coefficient	3.06	-0.14	18.39	5.15	0.42	-0.55
	t-statistic	2.96	-0.41	3.69	3.24	1.28	-2.19
R&D missing	coefficient	0.15	-0.03	0.03	-0.29	0.06	0.01
	t-statistic	2.38	-0.51	0.25	-2.30	1.49	0.38
S&P 500	coefficient	0.18	0.20	0.53	0.11	0.14	0.24
	t-statistic	2.13	5.18	2.53	1.27	2.29	5.81
PPE/Assets	coefficient	0.32	-0.06	1.36	0.35	0.04	0.00
	t-statistic	2.43	-0.92	2.50	1.19	0.61	0.05
PPE missing	coefficient	-0.13	-0.07	-0.64	0.27	-0.32	-0.02
	t-statistic	-1.13	-1.54	-3.33	1.20	-5.82	-0.48
Total IO	coefficient	2.90	0.43	5.89	-0.07	0.98	0.53
	t-statistic	5.23	4.18	7.64	-0.31	10.57	5.30
ROA	coefficient	-1.84	0.21	-2.80	-0.30	-0.49	-0.07
	t-statistic	-2.10	1.04	-1.78	-0.69	-1.75	-0.46
Q	coefficient	0.29	-0.07	1.23	0.05	0.00	-0.05
	t-statistic	2.71	-6.05	5.87	0.67	-0.20	-4.51
Firm F.E.		Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.		No	Yes	No	Yes	No	Yes
N		20,906	20,906	6,015	6,015	14,891	14,891
R2		76.02%	86.36%	68.21%	85.01%	90.84%	91.40%

PANEL B

	1979-2006				1979-1990				1991-2006			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Aggr. % friendly, DV	3.44	1.11			50.49	40.98			0.68	0.61		
	0.71	0.25			1.63	1.28			0.31	0.31		
Aggr. % hostile, DV	28.34				63.16				-8.72			
	0.83				1.78				-0.38			
Aggr. % LBO, DV		75.65				148.10				-25.37		
		3.28				7.03				-0.22		
Aggr. % friendly, #			33.44	25.48			98.18	16.95			4.76	6.19
			3.28	2.87			5.76	0.52			1.68	1.72
Aggr. % hostile, #			-93.82				-208.12				46.93	
			-0.53				-0.86				0.82	
Aggr. % LBO, #				79.39				304.37				-20.80
				1.71				2.93				-0.72
Controls Panel A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	No	No	No	No	No	No	No	No	No	No	No	No
N	20,170	20,170	20,170	20,170	5,575	5,575	5,575	5,575	14,595	14,595	14,595	14,595
R2	76.93%	77.76%	78.48%	78.81%	72.77%	77.46%	75.01%	79.56%	90.92%	90.91%	90.97%	90.97%

Panel C

	1979-2006				1979-1990				1991-2006			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
48 Ind. % friendly, DV	0.47	0.45			0.15	0.25			0.35	0.37		
	3.34	3.32			0.67	0.86			2.34	2.51		
48 Ind. % hostile, DV	-0.09	0.03			0.31	0.27			-0.49	-0.30		
	-0.26	0.07			1	0.87			-0.76	-0.44		
48 Ind. % LBO, DV	0.58	0.42			0.18	0.07			1.79	1.85		
	1.42	1.05			0.31	0.13			1.01	1.17		
48 Ind. % friendly, #			0.11	0.09			-1.86	-2.11			0.63	0.78
			0.2	0.14			-1.6	-1.49			1.36	1.6
48 Ind. % hostile, #			-0.10	-0.07			-0.87	-0.83			0.98	0.77
			-0.03	-0.02			-0.32	-0.29			0.33	0.24
48 Ind. % LBO, #			3.43	3.03			3.75	3.72			1.44	1.29
			1.91	1.73			1.85	1.86			0.9	0.76
Controls Panel A	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Firm F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	23,864	23,864	23,864	23,864	6,258	6,258	6,258	6,258	17,606	17,606	17,606	17,606
R2	86.29%	86.25%	86.29%	86.25%	84.67%	84.9%	84.68%	84.91%	91.17%	91.27%	91.17%	91.27%

TABLE III
TAKEOVER LOGITS

Panel A presents some descriptive statistics on M&A activity broken down into three categories: friendly takeovers, hostile takeovers and LBOs. Panels B and C present logit regressions were the dependent variable is the level of M&A activity in one of the three categories for the 1979-2006 period. Panel B measures the level of M&A activity in one of the three categories by deal value while Panel C measures the level of M&A activity in one of the three categories by the number of transactions. The "other controls" category refers to the following variables: "Total IO", "Max Block", "NPM", "Capex missing," "Leverage," "R&D" and "R&D missing." As in Table II, all the independent variables are the previous year's values (one year lagged). Standard errors were clustered throughout at the firm-level and are White (1980) robust.

Descriptive Statistics on Takeovers

PANEL A

	1979-2006		1979-1990		1991-2006	
	Mean	Stdev	Mean	Stdev	Mean	Stdev
Friendly Takeover	2.17%	14.57%	1.38%	11.68%	2.47%	15.52%
Hostile Takeover	0.16%	3.99%	0.31%	5.52%	0.10%	3.21%
LBO	0.21%	4.57%	0.39%	6.27%	0.14%	3.71%

PANEL B

		Friendly		Hostile		LBO	
		(1)	(2)	(3)	(4)	(5)	(6)
G-Index	coefficient	0.00	-0.01	-0.03	0.11	-0.24	-0.19
	t-statistic	-0.06	-0.68	-0.57	1.73	-3.59	-3.17
	marginal effect	-0.01%	-0.09%	-0.02%	0.09%	-0.17%	-0.15%
Aggr. % friendly, DV	coefficient	19.96		14.28		17.79	
	t-statistic	5.43		1.65		1.74	
	marginal effect	0.59%		0.03%		0.04%	
Aggr. % LBO, DV	coefficient	-18.44		91.29		39.46	
	t-statistic	-0.8		2.48		0.95	
	marginal effect	-0.05%		0.02%		0.01%	
48 Ind. % friendly, DV	coefficient	1.17		-2.23	-0.27	1.92	2.48
	t-statistic	1.42	2.22	-0.35	-0.05	1.46	1.66
	marginal effect	0.03%	0.04%	0.00%	0.00%	0.00%	0.01%
48 Ind. % hostile, DV	coefficient	4.02	4.65	-11.51	-29.71	4.11	9.61
	t-statistic	1.88	2.05	-1.05	-1.1	1.88	8.66
	marginal effect	0.01%	0.01%	0.00%	-0.01%	0.00%	0.00%
48 Ind. % LBO, DV	coefficient	-23.30	-20.14	-39.36	-21.51	-2.45	1.11
	t-statistic	-1.85	-1.86	-0.99	-0.65	-0.99	0.25
	marginal effect	-0.06%	-0.04%	-0.01%	-0.01%	0.00%	0.00%
Q	coefficient	-0.16	-0.15	0.01	0.22	-0.92	-1.01
	t-statistic	-2.49	-2.30	0.09	2.59	-2.72	-2.55
	marginal effect	-0.28%	-0.22%	0.00%	0.03%	-0.12%	-0.15%

Other Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	No	Yes	No	Yes	No	Yes
N	20503	20503	20100	20100	20100	20100
R2	13%	18%	10%	24%	12%	16%

PANEL C

	Friendly		Hostile		LBO	
	(1)	(2)	(3)	(4)	(5)	(6)
G-Index	-0.02	-0.01	-0.02	0.11	-0.25	-0.19
	-1.08	-0.59	-0.48	1.75	-4.15	-3.13
	-0.21%	-0.08%	-0.02%	0.10%	-0.18%	-0.15%
Aggr. % friendly, #	33.75		-12.21		1.22	
	3.98		-0.67		0.08	
	1.82%		-0.05%		0.01%	
Aggr. % LBO, #	-71.88		128.75		105.55	
	-0.94		1.82		1.52	
	-0.26%		0.04%		0.03%	
48 Ind. % friendly, #	4.03	4.42	6.86	6.16	8.65	9.57
	2.17	2.59	0.94	0.73	3.06	2.41
	0.12%	0.12%	0.02%	0.02%	0.02%	0.03%
48 Ind. % hostile, #	13.74	-9.76	23.14	22.79	-22.24	-15.75
	1.01	-0.5	2.4	2.24	-0.51	-0.27
	0.01%	-0.01%	0.00%	0.00%	0.00%	0.00%
48 Ind. % LBO, #	-47.31	-37.79	-24.33	-15.43	-12.27	-11.01
	-3.89	-3.4	-1.04	-0.91	-0.89	-0.72
	-0.13%	-0.09%	-0.01%	0.00%	0.00%	0.00%
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	No	Yes	No	Yes	No	Yes
N	20503	20503	20100	20100	20100	20100
R2	14%	18%	10%	16%	12%	16%

TABLE IV
FIRM VALUATION

Panels A, B and D present regressions where the dependent variable is industry-adjusted Tobin's Q (using the Fama-French 48 (1997) industry classification). Panel A are annual cross-sectional regressions with the Fama-McBeth coefficients, and their associated t-statistics, for various time periods reported at the bottom of the panel. Panel B are pooled panel regressions on the G-Index and various controls, while Panel D are also pooled panel regressions which add as independent variables G-Index interactions with friendly M&A activity. Both Panels B and D control for year fixed effects and in some regressions firm fixed and industry effects. Panel C are pooled panel regressions of industry-adjusted firm's return on assets (ROA) and industry-adjusted net profit margins (NPM) on the G-Index and various controls. Standard errors are White (1980) robust.

Panel A. Annual Cross-sectional Regressions of Industry-adjusted Q on G-Index

	Gindex		R2
1978	-1.18%	-0.70	14.47%
1979	-0.65%	-0.40	8.34%
1980	-0.58%	-0.33	8.71%
1981	0.17%	0.16	11.33%
1982	-2.45%	-1.75	14.54%
1983	-2.64%	-2.44	14.44%
1984	-2.04%	-2.85	12.19%
1985	-1.96%	-2.45	9.98%
1986	-1.01%	-1.50	7.61%
1987	-1.60%	-2.31	9.26%
1988	-1.25%	-2.03	8.63%
1989	-1.22%	-1.66	8.35%
1990	-2.21%	-3.28	8.81%
1991	-3.27%	-4.01	10.81%
1992	-3.18%	-4.10	11.46%
1993	-2.80%	-3.22	7.18%
1994	-2.11%	-2.75	7.67%
1995	-2.12%	-2.51	6.96%
1996	-1.50%	-1.65	9.62%
1997	-1.32%	-1.35	10.60%
1998	-2.48%	-2.45	16.15%
1999	-2.71%	-2.11	12.10%
2000	-2.62%	-2.11	17.97%
2001	-2.26%	-1.93	19.86%
2002	-0.68%	-0.73	18.18%
2003	-1.25%	-1.16	14.11%
2004	-1.10%	-1.06	10.93%
2005	-1.06%	-0.97	9.84%
2006	-0.46%	-0.45	11.75%
1978~2006	-1.71%	-1.94	
1982~1990	-1.82%	-3.15	
1978~1990	-1.43%	-1.75	
1990~2006	-1.95%	-2.26	

Note: missing Gindex-provisions less than 8.

Panel B. Pooled Panel Regressions of Industry-adjusted Q   N = 23,296 and 2,151 firms.

	1978-2006			1978-1989		1990-2006		1990-1999	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
GIndex	-0.02	-0.02	-0.01	-0.01	0.00	-0.02	-0.02	-0.02	-0.02
	-3.76	-3.74	-1.92	-1.56	0.23	-3.59	-1.61	-3.61	-1.46
Ln_Assets	-0.08	-0.09	-0.17	-0.07	-0.17	-0.1	-0.22	-0.09	-0.19
	-7.03	-6.51	-7.12	-5.59	-6.06	-5.79	-7.86	-5.01	-4.82
Capex/assets	1.99	2.53	1.76	1.16	0.69	3.16	2.05	2.67	1.49
	8.04	9.12	8.84	5.13	3.21	8.37	8.03	6.55	5.34
Capex missing	-0.01	-0.2	-0.07	-0.12	-0.08	-0.19	-0.07	-0.21	-0.07
	-0.11	-3.41	-1.53	-2.03	-2.29	-2.92	-1.09	-3.28	-0.85
Leverage	-0.69	-0.73	-0.40	-0.44	0.26	-0.80	-0.54	-0.79	-0.43
	-7.30	-7.29	-5.12	-3.29	2.39	-6.76	-5.75	-6.01	-3.70
R&D	0.34	0.91	0.40	2.86	0.60	0.83	0.34	2.16	1.41
	1.73	1.70	2.81	3.09	0.67	1.69	2.91	4.46	2.26
R&D missing	0.01	-0.08	0.06	0.03	-0.02	-0.13	0.08	-0.05	-0.01
	0.47	-2.31	1.52	0.86	-0.51	-2.77	1.48	-0.97	-0.08
S&P500	0.35	0.36	0.13	0.17	0.11	0.43	0.13	0.33	0.15
	9.83	10.43	3.58	5.73	2.74	9.76	3.06	7.11	2.46
PPE/assets	-0.33	-0.34	-0.01	-0.06	-0.07	-0.35	0.00	-0.18	0.05
	-4.89	-5.12	-0.10	-0.56	-0.62	-4.72	-0.01	-1.90	0.55
PPE missing	-0.14	-0.17	-0.04	0.05	0.01	-0.2	-0.06	-0.05	-0.05
	-3.80	-4.66	-1.23	1.18	0.16	-4.77	-1.80	-0.91	-1.08
Firm F.E.	No	No	Yes	No	Yes	No	Yes	No	Yes
Industry F.E.	No	Yes	No	Yes	No	Yes	No	Yes	No
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	23,296	23,296	23,296	6,381	6,381	16,915	16,915	11,054	11,054
R2	10.10%	15.46%	65.94%	21.14%	74.23%	15.94%	70.14%	14.54%	73.97%

Panel C. Pooled Panel Regressions of Industry-adjusted ROA and NPM
        2,150 firms total, ROA and NPM in percentage points

	1978-2006			1978-1989		1990-2006		1990-1999	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A. Using ROA as the dependent									
Gindex	-0.02	-0.02	-0.03	0.17	0.08	-0.05	-0.13	-0.07	-0.07
	-0.29	-0.38	-0.47	2.4	0.93	-1.13	-1.72	-1.38	-0.75
N	24339	24339	24339	6559	6559	17780	17780	11492	11492
R2	13.05%	42.18%	72.35%	31.63%	70.58%	48.86%	78.17%	44.68%	80.79%
Panel B. Using NPM as the dependent									
Gindex	-0.05	-0.10	-0.10	0.01	0.03	-0.12	-0.14	-0.12	-0.04
	-0.53	-1.9	-0.97	0.12	0.33	-2.19	-1.01	-2.36	-0.31
N	24724	24724	24724	6585	6585	18139	18139	11761	11761
R2	8%	51%	71%	27%	53%	64%	79%	57%	78%
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm F.E.	No	No	Yes	No	Yes	No	Yes	No	Yes

Industry F.E.	No	Yes	No	Yes	No	Yes	No	Yes	No
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel D. Pooled Panel Regressions of Industry-adjusted Q with M&A activity interactions

N = 23,296 and 2,151 firms.

	1978-2006		1978-1989		1990-2006		1990-1999	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Gindex * Low Friendly Ind48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3.1	4.99	0.82	1.16	3.08	4.4	2.76	3.06
Gindex	-0.02	-0.01	-0.09	0.00	-0.02	-0.02	-0.02	-0.02
	-3.4	-2.02	-1.48	0.6	-3.27	-1.64	-3.28	-1.52
Gindex * High Friendly Ind48	-0.01	-0.00	-0.01	-0.01	-0.01	-0.00	-0.01	-0.00
	-3.57	-1.1	-3.29	-3.64	-3.12	-1.23	-3.42	-2.15
48 Ind. % friendly, #	-0.22	-0.17	-0.39	-0.32	-0.91	-0.07	-0.64	-0.65
	-0.47	-0.72	-1.56	-1.63	-2.46	-0.25	-1.8	-2.27
Ln_Assets	-0.08	-0.17	-0.07	-0.17	-0.09	-0.24	-0.08	-0.20
	-6.2	-6.94	-5.63	-5.92	-5.45	-7.94	-4.6	-5.04
Capex/assets	2.51	1.77	1.17	0.74	3.16	2.08	2.60	1.47
	8.92	8.61	5.09	3.37	8.12	7.74	6.19	5.06
Capex missing	-0.19	-0.06	-0.12	-0.08	-0.19	-0.05	-0.20	-0.02
	-3.35	-1.3	-2	-2.42	-2.87	-0.78	-3.16	-0.25
Leverage	-0.76	-0.44	-0.43	0.262	-0.85	-0.61	-0.84	-0.49
	-7.4	-5.39	-3.21	2.39	-6.97	-6.19	-6.32	-4.08
R&D	0.88	0.35	2.92	0.82	0.80	0.27	2.27	1.39
	1.72	2.26	3.15	0.89	1.72	2.21	4.51	2.2
R&D missing	-0.08	0.066	0.03	-0.03	-0.13	0.12	-0.04	0.00
	-2.24	1.85	1.01	-0.85	-2.75	2.25	-0.78	0.06
S&P500	0.36	0.13	0.17	0.11	0.43	0.13	0.33	0.15
	10.41	3.62	5.72	2.73	9.74	3.05	7.08	2.8
PPE/assets	-0.35	-0.03	-0.06	-0.12	-0.36	-0.03	-0.18	0.03
	-5.17	-0.61	-0.62	-0.93	-4.83	-0.58	-1.78	0.31
PPE missing	-0.18	-0.05\	0.05	-0.01	-0.21	-0.08	-0.06	-0.07
	-4.9	-1.72	1.1	-0.17	-5.09	-2.35	-1.05	-1.37
Firm F.E.	No	Yes	No	Yes	No	Yes	No	Yes
Industry F.E.	Yes	No	Yes	No	Yes	No	Yes	No
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	21939	21939	6170	6170	15769	15769	10063	10063
R2	15.99%	66.86%	21.38%	74.87%	16.73%	71.43%	15.45%	76.17%

TABLE V

POISON PILLS AND CLASSIFIED BOARDS

The dependent variable is industry-adjusted Tobin's Q. In columns (1)-(3) independent variables include the G-Index and the G-Index interacted with a dummy variable for whether the year is prior to 1985. In columns (4)-(5) independent variables include classified board interacted with a pre-1985 dummy variable and columns (6)-(7) have pre-1985 dummy variable interaction with poison pills. Standard errors were clustered throughout at the firm-level and are White (1980) robust.

Panel N = 23,296 and 2,151 firms.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Gindex x Pre-1985	0.02	0.02	0.01				
	1.82	1.81	1.14				
Gindex x 1985	0.00	0.00	0.01				
	0.2	0.18	0.72				
Gindex	-0.02	-0.02	-0.01				
	-3.7	-3.68	-1.98				
CBoard x Pre-1985					0.121		
					2.87		
CBoard x 1985					0.05		
					1.09		
Cboard				-0.06	-0.08		
				-2.31	-2.53		
PPill x Pre-1985							0.16
							1.35
PPill x 1985							0.05
							0.58
PPill						-0.12	-0.12
						-4.02	-4.02
Firm F.E.	No	No	Yes	No	No	No	No
Industry F.E.	No	Yes	No	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	23296	23296	23296	23247	23247	23296	23296
R2	10.12%	15.48%	65.94%	15.29%	15.35%	15.54%	15.54%

TABLE VI
G-INDEX ABNORMAL RETURNS

Panel A presents abnormal return results (as measured by excess returns and the Fama-French three factor model) with portfolios weighted by stock's market capitalization. Panel B presents abnormal return results with portfolios equally weighted.

Panel A. Value-weighted portfolios

Gindex Group	1978:7 - 2007:6		1978:7 - 1990:8		1990:9 - 2007:6		1990:9 - 1999:12	
	Excess Returns	FF3 Alphas	Excess Returns	FF3 Alphas	Excess Returns	FF3 Alphas	Excess Returns	Carhart Alphas
Q1	8.79%	1.58%	7.80%	1.45%	9.50%	1.87%	16.64%	1.87%
	0.59	2.48	0.47	1.67	0.70	2.08	1.26	1.96
Q5	8.81%	-0.12%	8.12%	0.95%	9.31%	0.50%	12.03%	-2.47%
	0.57	-0.11	0.43	0.75	0.73	0.34	0.92	1.60
Q1-Q5	-0.02%	1.70%	0.31%	0.50%	0.19%	1.37%	4.61%	4.34%
	0.00	1.32	0.05	0.32	0.02	0.82	0.78	2.13
D1	10.21%	2.62%	10.42%	3.57%	10.06%	2.68%	17.09%	2.46%
	0.66	2.71	0.58	2.67	0.74	2.11	1.23	1.60
D10	8.40%	-1.55%	7.72%	0.25%	8.89%	-1.55%	9.40%	-6.00%
	0.52	-1.09	0.39	0.13	0.67	0.91	0.69	2.72
D1-D10	1.82%	4.17%	2.71%	3.32%	1.17%	4.23%	7.69%	8.46%
	0.21	2.64	0.34	1.47	0.13	2.07	0.81	2.81

Panel B. Equally-weighted portfolios

Gindex Group	1978:7 - 2007:6		1978:7 - 1990:8		1990:9 - 2007:6		1990:9 - 1999:12	
	Excess Returns	FF3 Alphas	Excess Returns	FF3 Alphas	Excess Returns	FF3 Alphas	Excess Returns	Carhart Alphas
Q1	12.68%	1.64%	11.93%	4.13%	13.23%	0.25%	18.50%	3.40%
	0.73	1.73	0.60	3.86	0.87	0.19	1.24	2.22
Q5	10.75%	-1.23%	8.60%	0.23%	12.31%	-1.22%	16.94%	1.56%
	0.63	-1.04	0.43	0.19	0.86	0.83	1.20	0.90
Q1-Q5	1.93%	2.87%	3.33%	3.90%	0.92%	1.46%	1.56%	1.84%
	0.35	3.25	0.75	3.04	0.15	1.33	0.32	1.33
D1	13.25%	2.24%	14.93%	7.20%	12.04%	-0.74%	16.54%	2.02%
	0.76	1.93	0.73	4.82	0.81	-0.51	1.14	1.19
D10	10.42%	-2.05%	8.49%	-0.33%	11.82%	-2.16%	15.86%	0.19%
	0.60	-1.57	0.41	0.24	0.81	1.29	1.08	0.09
D1-D10	2.83%	4.29%	6.45%	7.54%	0.21%	1.43%	0.69%	1.83%
	0.43	3.71	0.96	3.90	0.03	1.05	0.11	0.92

TABLE VII
E-INDEX ABNORMAL RETURNS

Panel A presents abnormal return results (as measured by excess returns and the Fama-French three factor model) with portfolios weighted by stock's market capitalization. Panel B presents abnormal return results with portfolios equally weighted.

Panel A. Value-weighted portfolios

Eindex Group	1978:7 - 2007:6		1978:7 - 1990:8		1990:9 - 2007:6		1990:9 - 1999:12	
	Excess Returns	FF3 Alphas	Excess Returns	FF3 Alphas	Excess Returns	FF3 Alphas	Excess Returns	FF3 Alphas
Q1	9.03%	2.29%	6.98%	0.42%	10.51%	3.97%	18.44%	3.90%
	0.58	2.90	0.42	0.80	0.72	3.05	1.34	2.83
Q5	8.50%	-0.71%	9.02%	2.09%	8.12%	-1.75%	10.67%	-4.28%
	0.54	0.77	0.47	2.41	0.65	1.60	0.83	3.14
Q1-Q5	0.53%	3.00%	-2.05%	-1.67%	2.39%	5.72%	7.77%	8.17%
	0.07	2.29	0.40	1.41	0.27	3.12	1.01	3.41
D1	9.03%	2.29%	6.98%	0.42%	10.51%	3.97%	18.44%	3.90%
	0.58	2.90	0.42	0.80	0.72	3.05	1.34	2.83
D10	8.18%	-1.07%	8.28%	1.37%	8.10%	-1.79%	10.63%	-4.15%
	0.53	1.14	0.43	1.36	0.65	1.67	0.84	3.14
D1-D10	0.85%	3.37%	-1.30%	-0.95%	2.41%	5.75%	7.82%	8.05%
	0.11	2.56	0.24	0.75	0.28	3.19	1.02	3.43

Panel B. Equally-weighted portfolios

Eindex Group	1978:7 - 2007:6		1978:7 - 1990:8		1990:9 - 2007:6		1990:9 - 1999:12	
	Excess Returns	FF3 Alphas	Excess Returns	FF3 Alphas	Excess Returns	FF3 Alphas	Excess Returns	FF3 Alphas
Q1	11.60%	0.99%	9.77%	1.90%	12.92%	1.09%	13.96%	-0.66%
	0.71	1.04	0.51	2.16	0.93	0.82	0.99	0.45
Q5	10.88%	-1.30%	9.57%	1.06%	11.83%	-1.92%	11.40%	-3.70%
	0.64	1.16	0.47	1.04	0.84	1.42	0.82	2.16
Q1-Q5	0.71%	2.29%	0.19%	0.84%	1.09%	3.01%	2.56%	3.04%
	0.16	3.00	0.05	0.83	0.22	2.95	0.56	2.23
D1	11.60%	0.99%	9.77%	1.90%	12.92%	1.09%	13.96%	-0.66%
	0.71	1.04	0.51	2.16	0.93	0.82	0.99	0.45
D10	10.81%	-1.27%	9.38%	0.95%	11.84%	-1.76%	11.43%	-3.63%
	0.64	1.12	0.46	0.90	0.85	1.28	0.83	2.05
D1-D10	0.79%	2.26%	0.39%	0.95%	1.08%	2.85%	2.53%	2.97%
	0.17	2.82	0.10	0.88	0.22	2.67	0.53	2.06

TABLE VIII
INDUSTRY-ADJUSTED ABNORMAL RETURNS

This tables presents the G-Index abnormal returns adjusted for industry-matched portfolios as done in Johnson, Moorman & Sorescu (2008).

	Value-weighted portfolios				Equally-weighted portfolios			
	Gindex-VW-indadj		Gindex-EW-indadj		Gindex-VW-indadj		Gindex-EW-indadj	
	1978:7 - 2007:6		1978:7 - 2007:6		1978:7 - 2007:6		1978:7 - 2007:6	
Gindex	Excess	FF3	Excess	FF3	Excess	FF3	Excess	FF3
Group	Returns	Alphas	Returns	Alphas	Returns	Alphas	Returns	Alphas
Q1	-0.08%	1.20%	-1.54%	1.44%	2.97%	1.39%	1.58%	1.65%
	-0.01	1.16	-0.20	1.19	0.55	2.01	0.45	2.82
Q5	0.24%	0.08%	-2.32%	-0.97%	1.30%	-0.26%	-0.57%	-0.83%
	0.06	0.10	-0.35	1.13	0.32	0.39	-0.17	1.39
Q1-Q5	-0.32%	1.12%	0.78%	2.41%	1.67%	1.65%	2.14%	2.49%
	0.04	0.81	0.09	1.61	0.30	1.93	0.37	2.56
D1	0.78%	1.98%	-0.25%	2.46%	3.98%	2.66%	2.59%	2.64%
	0.14	1.85	-0.03	1.90	0.67	3.10	0.58	3.28
D10	-0.48%	-0.88%	-2.43%	-1.69%	1.80%	-0.13%	-0.15%	-1.06%
	-0.09	0.84	-0.38	1.58	0.33	0.14	-0.03	1.31
D1-D10	1.26%	2.86%	2.18%	4.15%	2.19%	2.79%	2.73%	3.70%
	0.15	1.79	0.24	2.47	0.33	2.27	0.40	3.04

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