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THE ROLE OF ADVISORY SERVICES IN PROXY VOTING

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ABSTRACT

This paper studies the information content and consequences of third-party voting advice issued during proxy contests. We document significant abnormal stock returns around proxy vote recommendations and develop an estimation procedure for disentangling stock price effects due to changes in outcome probabilities from those due to changes in outcome-contingent valuations. We find that voting advice is a good predictor of contest outcomes and that vote recommendations appear to certify the extent to which dissidents can add value. Thus, proxy advice seems to play a dual informational role in financial markets.

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THE ROLE OF ADVISORY SERVICES IN PROXY VOTING

1. INTRODUCTION

Proxy voting is a major corporate activity. During the 2005 U.S. proxy season, over 299 billion shares were voted to elect 35,283 individual directors, ratify 3,300 auditors, adopt 2,293 compensation plans, and approve 340 M&A transactions and a large number of internal governance proposals.[2] Most proxy votes are cast by mutual funds and other institutional investors, which collectively hold over two-thirds of the voting shares in the United States. Given the prominent role played by institutional investors in proxy voting, the overall effectiveness of the proxy mechanism clearly depends on whether it provides institutions the right incentives to vote in an informed, objective manner.[3]

A striking development in recent years has been the rapid growth in institutional investors' use of voting services provided by proxy advisors. These third-party advisors supply clients with background research, explicit voting recommendations, and other services on a range of corporate voting issues. The perceived importance of proxy advice is illustrated by the $19 billion merger between Hewlett-Packard Co. (HP) and Compaq Computer Corp. in 2002. After an acrimonious, extended proxy fight waged by board member Walter Hewlett in opposition to the merger, shareholders of HP narrowly approved the merger by 51.4% to 48.6%. Observers largely credited the favorable recommendation of Institutional Shareholder Services (ISS), a leading proxy advisory service, with turning the tide in favor of the controversial merger proposal. As one analyst said of the ISS decision, "If it had gone the other way, the deal would have been dead. Now, it's a horse race."[4]

Despite anecdotal evidence that third-party advisors wield considerable influence in specific cases, there is little formal research on proxy advice. This is particularly true for non-routine,

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[2] *2005 Proxy Season: Key Statistics & Performance Ratings*, ADP Investor Communication Services.

[3] Prior research has identified a number of potential factors that can prevent institutions from voting for shareholder value maximization. For example, when corporate ownership is widely dispersed, the private cost to a shareholder of informed voting is likely to be large relative to the private benefit. Also, investors who are dissatisfied with a firm's management may sell their shares—i.e., follow the "Wall Street Rule"—rather than holding and voting them (Parrino, Sias, and Starks (2003)). Finally, mutual funds that manage the pension plans of corporate clients in which they invest may face potential conflicts of interest in voting their shares (Davis and Kim (2007)).

[4] *BusinessWeek*, March 18, 2002, p. 62.

contested elections, where the information that vote recommendations bring to the market and the influence that they have on voting outcomes are potentially greatest.[5] Understanding the role of vote recommendations in contested votes is relevant to the broader issue of whether proxy advice represents an efficient market solution to agency and coordination problems in voting or whether, instead, it is a source of additional agency costs and inefficiencies to be borne by investors.[6]

In this paper, we examine empirically the economic role of third-party proxy advice in contested proxy voting. Our investigation uses vote recommendations issued by the leading advisory firm, Institutional Shareholder Services, during 1992-2005. We focus specifically on contested director elections[7] – episodes in which a dissident actively and formally solicits votes for a slate of directors in opposition to incumbent management – because these are situations in which the informational content of proxy advice is likely to be substantial. Indeed, while most corporate proxy votes are routine with little or no direct effect on company management and little uncertainty about the outcome, proxy contests for board seats usually involve issues of material importance where voting outcomes are far from certain.

We find that the direction of vote recommendations does appear to bring new information to the market. Specifically, recommendations that endorse dissidents are accompanied by an average nine-day cumulative abnormal return of 3.76 percent, while pro-management recommendations lead to an insignificant average nine-day cumulative abnormal return of −0.56 percent. The differential between the two returns is statistically significant, indicating that news

[5] A handful of papers examine the effects of recommendations in non-contested voting situations, i.e., voting episodes in which a dissident does not actively solicit votes in opposition to management. For example, Morgan and Poulsen (2001) and Bethel and Gillan (2002) document that ISS vote recommendations are associated with voting percentages in favor of non-contested proposals. Likewise, Maug and Rydqvist (2009) find that, for non-contested management-sponsored proposals, ISS recommendations are significantly related to the probability of passage. Cai, Garner, and Walkling (2009) report that directors in uncontested elections who receive negative ISS recommendations receive significantly fewer votes. Choi, Fisch, and Kahan (2009) examine the economic determinants of ISS proxy advice in non-contested elections and find that firm performance and corporate governance factors affect the likelihood of an ISS "withhold" recommendation.

[6] Berman and Lublin (2006) highlight the substantial value associated with proxy advice in the context of the recent acquisition of ISS. In September 2006, ISS placed itself on the market with an asking price of $500 million. The move elicited 19 bids and resulted in an eventual sale of ISS to RiskMetrics for approximately $550 million.

[7] Although the term "proxy contest" is not formally defined in the federal securities laws, regulations under those laws define a "solicitation in opposition" of the incumbent management and require special disclosures by the dissident and the incumbent whenever such a solicitation occurs. For our purposes, a "proxy contest" is taken to be an instance in which a dissident distributes its own proxy statement to investors to solicit votes rather than simply campaigning in favor of a shareholder proposal that has been added to the company's proxy materials.

of proxy advice generally has a more favorable effect on stock prices when the advice favors the dissident rather than the incumbent.

To better understand the informational role of proxy advice, we formulate and test two basic hypotheses. The first, which we call the *prediction hypothesis*, posits that recommendations impact stock prices by causing revisions in probability beliefs about who will win a proxy contest. Such belief revisions could arise either because vote recommendations have a direct causal influence on voting (e.g., by providing voters with persuasive evidence or by serving as a default decision or coordination device), or because recommendations are non-causal leading indicators of eventual contest outcomes. Our second hypothesis, which we call the *certification hypothesis*, holds that vote recommendations are informative about the value that a dissident or incumbent team would bring to a firm if victorious. Under this view, recommendations help investors to learn about *conditional* expected valuations associated with different contest outcomes. Note that prediction and certification are not mutually exclusive. Indeed, if proxy advice does convey information about contingent firm valuations, we would also expect it to influence voting behavior and probability beliefs to some degree. The two hypotheses do, however, highlight distinct channels by which proxy advice can bring information to market participants.

We test the prediction hypothesis by directly examining the association between proxy advice and contest outcomes. We find strong evidence that vote recommendations have predictive power. Specifically, a multivariate probit analysis of contest outcomes reveals that the direction of a vote recommendation is useful in forecasting the winner of a contest. This finding is robust to controlling for a variety of other observable factors that could plausibly explain contest outcomes, such as contest characteristics, voting rules, and ownership levels of incumbents and dissidents.

We also develop a novel estimation approach for testing the certification hypothesis. In general, testing for certification is not as straightforward as testing for prediction because the market's *ex ante* valuation assessments for dissident and management victories are not directly observable. Instead, the conditional valuations are implicit in the stock price, which reflects a combination of the valuations along with their associated outcome probabilities. Our estimation approach uses estimated outcome probabilities and observed stock returns to distinguish between the price effects of changes in outcome-contingent valuation assessments and the price effects of

changes in outcome probability beliefs. Using this approach, we obtain parameter estimates in a simple structural model that allows for two different types of certification: Changes in the stock price due to reassessments of dissident value and/or reassessments of management value. The parameter estimates support a dissident-based certification effect. On average, a pro-dissident vote recommendation seems to convey nontrivial information to market participants about how much value a dissident team would bring to the firm if elected. However, there is little evidence that recommendations certify incumbent management, suggesting perhaps that incumbents are more of a known quantity because they already have a track record with the firm.

While our certification analysis focuses specifically on proxy advice, the underlying statistical inference problem is considerably more general. The arrival of proxy advice in a proxy contest is an example of what can be called *interim news*; that is, news about an intermediate stage of a larger multi-stage game or process.[8] Given the public arrival of interim news, it is often of interest to distinguish the price effects due to revisions in probabilities from price effects due to revisions in outcome-contingent valuations. In this regard, our empirical methodology is of independent interest and has potential applicability to other types of interim news and corporate events beyond the specific setting of contested proxy voting.

Our work relates to a number of strands of the prior literature. First, several papers study the shareholder value implications of proxy contests (see, e.g., DeAngelo and DeAngelo (1989), Dodd and Warner (1983), Pound (1989), Ikenberry and Lakonishok (1993), and Mulherin and Poulsen (1998)). The focus in these studies is largely on shareholder returns either around the time of contest initiation, over the entire contest period, or during the post-contest period. In contrast, our analysis focuses on the interim impact of proxy voting advice. Second, the prior literature has identified various economic determinants of proxy voting outcomes in contested or non-contested situations (see, e.g., Brickley, Lease, and Smith (1988), Pound (1988), Gordon and Pound (1993), Morgan and Poulsen (2001), Bethel and Gillan (2002), Cremers and Romano (2007), Cai, Garner and Walkling (2009), Gillan and Starks (2000), Maug and Rydqvist (2009), and Matvos and Ostrovsky (2008)). Our findings indicate that third-party voting advice is a significant predictor of contest outcomes in addition to other previously-studied factors. Third, Bhagat and Jefferis (1991) and Betton and Eckbo (2000) also use estimated outcome

[8] Other examples of interim news include news of takeover defenses adopted in response to tender offers or announcements of strategic initiatives following management shake-ups.

probabilities to identify valuation effects (in proxy voting and takeover bidding, respectively). Our empirical approach differs from theirs, however, in a number of respects. We study multiple related events (i.e., dissident versus incumbent recommendations) rather than a single event (e.g., launching of a takeover bid). Furthermore, since proxy advice is interim news that arrives *in medias res* during proxy contests, we must control both for concurrent changes in outcome probabilities and for pre-recommendation cross-sectional heterogeneity in valuation assessments when testing for certification. We use generalized method of moments (GMM) estimation to account for econometric issues that arise from the use of estimated outcome probabilities in place of the market's actual probability beliefs.

Our findings on the informational role of vote recommendations have implications for the effectiveness of proxy advice and the efficiency of proxy voting. A well-established literature argues that agency and free-rider problems inherent in corporate voting can lead to inefficient voting outcomes (e.g., Manne (1964), Easterbrook and Fischel (1983), Grossman and Hart (1980, 1988) and Harris and Raviv (1988)). At the same time, recent empirical work shows how market institutions, such as the equity loan market, can mitigate voting inefficiencies by reducing informational frictions (Christoffersen et al. (2007)). Our findings suggest that proxy advice is another market development that facilitates informed proxy voting, perhaps leading to voting outcomes more in line with shareholder value maximization. The results also provide a perspective on recent concerns voiced in the popular press (see, e.g., Krasne (2004) and Starkman (2006)) that proxy advisors' affiliated business lines could give rise to a pro-management bias and a loss of objectivity in vote recommendations. Our evidence on the price impact and certification effects of vote recommendations does not support the view that conflicts of interest critically undermine the informativeness of third-party proxy advice for market participants.

The rest of the paper is organized as follows. Section 2 provides some institutional background on the historical development and role of proxy advice. To clarify the intuition behind our empirical hypotheses and tests, Section 3 presents a simple economic model of stock price formation around the arrival of a vote recommendation. Section 4 describes the construction of our dataset of proxy contests and vote recommendations. Section 5 presents our results on the stock price reaction to recommendations. In Section 6, we test the prediction and certification hypotheses. Section 7 concludes.

2. INSTITUTIONAL BACKGROUND: ADVISORY SERVICES IN PROXY VOTING

New securities rules adopted in 2003 by the Securities and Exchange Commission underscore the fiduciary duty of U.S. institutional investors with respect to proxy voting. These rules require funds to disclose publicly how they vote on corporate ballots, and also to adopt written policies and procedures ensuring that proxies are voted in the best interests of clients.[9] For large, highly diversified mutual funds, the costs of directly collecting information in-house and voting appropriately for every company in their portfolio can be substantial. Thus, it is not surprising that many of the largest and most prominent institutional investors in the U.S., including Fidelity, T. Rowe Price, Janus, TIAA-CREF, and CalPERS, retain third-party proxy advisory firms.

While recent regulatory developments may have strengthened the demand for proxy advisory services, the market for such services is not new. The history of advisory services dates back to the founding of the nonprofit Investor Responsibility Research Center (IRRC) in the early 1970s. IRRC provided independent analysis (but not recommendations), focusing on social issues such as the offshore operation of U.S. businesses. With the passage of ERISA in 1974, the Department of Labor (DOL) began enforcing a requirement that pension fund fiduciaries act solely in the interest of pension plan participants and beneficiaries. As was made clear by interpretative guidance that the DOL issued in 1988 and refined through subsequent releases, this fiduciary duty applied to the voting of stock held by pension funds.[10]

Demand for third-party voting advice grew markedly in the 1980's. Over time, proxy vote recommendation services began to be offered commercially. Among the early providers of

[9] See "Final Rule: Proxy Voting by Investment Advisers" (File No. s7-38-02). The new rule, along with the SEC's No-Action Letter to Egan-Jones Proxy Services on May 27, 2004, explicitly recognizes the role that third-party proxy advice can play in mitigating conflicts of interest in fund voting. In particular, the rule provides that an investment adviser can demonstrate that a vote was not the product of a conflict of interest if, in accordance with a pre-determined policy, the vote was made based upon the recommendations of an independent third party. These rules were adopted under the Investment Advisers Act of 1940 and reflect an understanding that mutual funds and other institutional investors are fiduciaries with respect to all services conducted on behalf of clients, including proxy voting.

[10] See Letter from Deputy Assistant Secretary of Labor Alan Lebowitz to Helmuth Fandl, Avon Products, Inc., February 23, 1988. This "Avon Letter" indicated that shareholder voting rights are plan assets under ERISA and that related fiduciary duties thus apply to share voting.

proxy vote advisory services were Proxy Monitor, Inc., founded in 1984, and Institutional Shareholder Services (ISS), founded in 1985. Research reports issued by these firms covered a wide range of corporate election items, including routine management proposals, shareholder proposals, and contested director elections. The two businesses grew rapidly throughout the 1990s as they expanded their institutional clienteles. In July 2001, ISS merged with its smaller rival, leading to a single set of widely-used proxy recommendations (Sidel (2001)). More recently, a handful of other providers of proxy advice have entered the market, giving institutional investors alternatives to ISS. Egan-Jones Proxy Services and Glass Lewis & Co. began offering proxy recommendations commercially in 2003, and Proxy Governance Inc. entered the market in 2005.

The core business of ISS and other proxy advisors is to supply institutional investors with vote recommendations on a subscription basis. A vote recommendation is issued as part of a written research report distributed privately to institutional clients one to two weeks before a scheduled vote. In contested elections, one or both of the contestants typically issue public press releases (within a few days of the original report) either responding to or touting a vote recommendation.

The various proxy advisors do differ along some dimensions. For example, ISS and Glass Lewis often host public conference calls at which opposing sides in proxy contests can present their arguments. Also, whereas the largest advisors typically adhere to pre-specified voting policy guidelines when recommending on non-contest items, Proxy Governance purports to evaluate even non-contest items on a case-by-case basis. The different providers also have different overall business models. ISS also provides advice and related services to corporations to help them assess and improve their corporate governance practices.[11] Egan-Jones is affiliated with Egan-Jones Ratings Co., a credit rating agency that issues for-profit debt ratings. Glass Lewis and Proxy Governance do not sell consulting or credit rating services to corporations.[12]

[11] To help reduce potential conflicts of interest between the two businesses that could compromise the objectivity of vote recommendations, ISS maintains separate staffs, office equipment, and databases for the two operations. In June 2006, to further address potential conflicts of interest, ISS spun off its corporate services into a new, separately-incorporated subsidiary.

[12] Choi, Fisch and Kahan (2009) find that, for non-contested elections, different advisors emphasize different factors in making their recommendations. These factors include a firm's corporate governance, compensation, and audit policies.

Historically, the largest and most prominent proxy advisor has been ISS. According to the company's website[13], as of July 2006 ISS maintained research coverage on 35,196 companies (including all constituents of the Russell 3000 index) for the benefit of 1,667 institutional subscribers that control assets totaling over $25 trillion.[14] Given the size and prominence of ISS over our sample period, it is natural to investigate the economics of proxy advice by studying the recommendations of this market leader. Although ISS was acquired by RiskMetrics at the end of 2006 and was re-branded as "RiskMetrics," we refer to the company throughout as "ISS" since that was its name throughout our sample period.

3. A Model of Stock Prices and Interim News

In this section, we develop a simple model of the price impact of proxy vote recommendations. Although the model focuses on proxy contests and vote recommendations, it can be generalized, along with the accompanying estimation approach developed in Section 6.2, to other situations in which there is existing uncertainty about the occurrence of a future event and *interim news* arrives that changes investor beliefs about outcome probabilities and/or outcome-contingent valuations. By "interim news" we mean early and incomplete information about a future possible event. For example, a firm that is the target of a takeover bid might announce the adoption of a takeover defense, which could change investors' views about both the probability that the takeover will succeed and about the expected take-over premium. Alternatively, status reports by a pharmaceutical company about clinical trials may alter market beliefs about the success likelihood and profitability of a new medicine.

Consider a firm that is the target of a proxy contest launched by a dissident shareholder group in opposition to the incumbent management team. The contest outcome will be determined by the votes of one or more shareholders whom we call *pivotal voters*. We distinguish these pivotal voters from the *marginal investor*, who determines the market-clearing stock price in the financial market. For simplicity, we assume the marginal investor is risk-neutral with respect to

[13] http://www.issproxy.com, accessed September 2006.
[14] While exact market-share figures for the newer entrants are less readily available, anecdotal evidence suggests that they have grown rapidly. For instance, Glass Lewis, the second-largest proxy advisor, was reported in June 2006 to have about 200 clients (Hershey (2006)).

uncertainty about the final outcome of the contest. Under the simplifying assumption that the discount rate is zero, the equilibrium share price at a generic date t is

$$P_t = \pi_t D_t + (1-\pi_t) M_t \tag{1}$$

where π_t is the marginal investor's date-t belief about the probability of a dissident victory and D_t and M_t are the marginal investor's date-t expectations of the per-share values that would result from victory by the dissident and the incumbent, respectively.[15]

We assume that a third-party vote recommendation, denoted by REC^D, becomes known to the public at date $t = A$. The advice takes on one of two values: It either favors the dissident ($REC^D = 1$), or the incumbent management ($REC^D = 0$). The advice potentially affects both the marginal investor's probability beliefs about how the pivotal voters will vote as well as his assessments of outcome-conditional values. Letting $t = A-1$ denote a date after the contest has begun but before proxy advice has been publicly announced, the price change between dates *A-1* and *A* is given by

$$P_A - P_{A-1} = \pi_{A-1}(D_A - D_{A-1}) + (1-\pi_{A-1})(M_A - M_{A-1}) + (\pi_A - \pi_{A-1})(D_A - M_A). \tag{2}$$

Beliefs about the dissident-win probability are assumed to evolve between dates $A-1$ and A according to

$$\pi_A = \pi_{A-1} + g^{\pi}(REC^D) + \eta_A^{\pi} \tag{3}$$

[15] More formally, D_t is the date-t expectation of the future stock value in states in which the dissident wins, and M_t denotes the corresponding expectation in states where incumbent management wins. Note that contest outcomes will generally be uncertain to the marginal investor if information collection is costly and voters are heterogeneously informed; or if possible conflicts of interest exist that could distort the pivotal voter's decision away from value maximization.

where the function $g^{\pi}(\cdot)$ captures the effect of the proxy advice on probability beliefs and η_A^{π} is a mean-zero random shock to probability beliefs that is unrelated to REC^D.[16] The corresponding revisions in per-share outcome-contingent valuations are

$$(4) \qquad \begin{aligned} D_A &= D_{A-1} + g^D(REC^D) + \eta_A^D \\ M_A &= M_{A-1} + g^M(REC^D) + \eta_A^M \end{aligned}$$

where the "certification" functions $g^D(\cdot)$ and $g^M(\cdot)$ represent the impact of REC^D on the marginal investor's valuation assessments and η_A^D and η_A^M are other mean-zero valuation shocks that arrive between dates $A-1$ and A. Given the revisions in the marginal investor's beliefs, the observed stock price change between $A-1$ and A is

$$(5) \qquad \begin{aligned} P_A - P_{A-1} = {} & \pi_{A-1}[g^D(REC^D) + \eta_A^D] + (1-\pi_{A-1})[g^M(REC^D) + \eta_A^M] \\ & + [g^{\pi}(REC^D) + \eta_A^{\pi}](D_A - M_A). \end{aligned}$$

Two distinct hypotheses emerge from this simple framework about the impact of proxy vote recommendations on stock prices. According to the *prediction hypothesis*, a recommendation for the dissident (incumbent) increases the perceived probability of a dissident (incumbent) win. Such an effect could arise if the advisor's recommendation directly influences the pivotal voters' behavior or, alternatively, if the recommendation simply reveals information to the marginal investor which was already known to the pivotal voter. In either instance, a pro-dissident recommendation should have a more positive impact on the probability π_A than a pro-management recommendation. In terms of the above model, the prediction hypothesis posits that $g^{\pi}(1) > 0$ and $g^{\pi}(0) < 0$.

According to the *certification hypothesis*, a pro-dissident recommendation causes the marginal investor to revise upward his assessment of the stock valuation associated with a dissident win. Likewise, a pro-management recommendation causes an upward revision in the

[16] Here and throughout the analysis, we abstract from information that might be contained in the timing of recommendations. In practice, ISS recommendations exhibit only modest variation in timing with respect to scheduled votes at annual shareholder meetings. Most ISS recommendations are issued between one to two weeks prior to the annual meetings.

marginal investor's valuation assessment for an incumbent victory. Under the most straightforward version of this hypothesis, we have $g^D(1) > 0 > g^D(0)$ (dissident certification) and $g^M(0) > 0 > g^M(1)$ (management certification). If certification effects are absent, then $g^D(1) = g^M(1) = g^D(0) = g^M(0) = 0$.

The prediction and certification hypotheses are not mutually exclusive. A recommendation favoring the dissident could, for example, cause investors to anticipate a higher value of the firm under dissident control, thus inducing some votes to switch to the dissident. To the extent that investors recognized such a link between value assessments and voting behavior, then news of the recommendation would affect investors' beliefs about outcome probabilities as well as conditional values. Nonetheless, the certification and prediction effects represent two conceptually distinct ways in which proxy advice can affect stock prices. Our empirical tests in Section 6 investigate both of these possible effects.

4. DATA

The data on contested director elections and proxy vote recommendations in this study were hand-collected from multiple sources. We first assembled an initial sample consisting of all proxy voting episodes in the SEC's EDGAR database that resulted in a Form DEFC14A filing (definitive proxy statement for contested solicitation) during 1992-2005.[17] We then eliminated duplicate filings, amended filings, and filings for firms that were not listed in the Center for Research on Securities Prices (CRSP) database as of the filing date. Also, when filings occurred for multiple voting episodes at a single company in the same year, we retained only the earliest one. Altogether, there were 377 proxy voting episodes with DEFC14A filings involving CRSP-listed firms during 1992-2005.

Next, we read the individual DEFC14A filings and eliminated 66 contests in which the dissident was not seeking board representation.[18] In addition, we excluded the following

[17] Under U.S. securities laws, when a dissident initiates a contested proxy solicitation, both the dissident and the company are required to indicate that the vote is contested by filing DEFC14A forms (rather than ordinary DEF 14A proxy statements).

[18] We focus on board contests for two reasons. First, ex ante uncertainty about the direction of proxy advice is likely to be greater for board contests than for other votes because ISS typically recommends according to default rules for

episodes in which proxy advice was unlikely to have played a substantive informational role: 4 cases in which management filed a DEFC14A but the dissident did not; 8 cases where the dissident filed proxy statements less than one week before the scheduled vote; and 6 cases where the DEFC14A was in fact a mislabeled news release or a mislabeled DEF 14A (uncontested) proxy statement. Imposing these screens resulted in an overall sample of 293 proxy contests in which the dissident was seeking board representation.

For each contested election in our overall sample, we sought to ascertain the nature of the vote recommendation, if any, issued by ISS. Our first source for this information was ISS itself, which provided us with reports for voting situations designated as contested in their records. These reports, like others reviewed for this study, contain issue-by-issue summaries of ISS's vote recommendations as well as descriptions of the contest background and detailed analyses of the targeted firm's corporate governance characteristics, including ownership levels, compensation, board structure, and antitakeover provisions. The reports provided to us by ISS cover 84 out of the 293 contests in our sample.

Because ISS's definition of a contest differs from the broader definition that we use in this study, we searched for additional information about ISS proxy vote recommendations from other sources. First, we obtained electronic copies of an additional 52 reports from LexisNexis and Investext Plus. Second, for each contest in our sample, we performed a comprehensive search in the Dow Jones Factiva and LexisNexis News databases for company releases, news stories, and newswires publicly announcing ISS recommendations. Specifically, we used keyword searches to identify all news items published within a year of the DEFC14A filing date that mentioned "Institutional Shareholder Services" or "ISS" in conjunction with the name of the firm targeted by the contest. From these news items, we were able to determine ISS vote recommendations for a total of 158 contests in our contest sample.[19]

Our final sample consists of recommendations for 198 distinct contests. Of these, we have a news announcement but no ISS research report for 62; an ISS report but no news announcement

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non-board votes, whereas it recommends on a case-by-case basis in board contests. Second, board seat contests often involve major corporate decisions and thus may be expected to have larger valuation consequences.

[19]We also searched the Dow Jones Factiva and LexisNexis News databases for vote recommendations issued by competing proxy advisory services, including Glass, Lewis, & Co., Egan-Jones Proxy Services, and Proxy Governance, Inc. As discussed in Section 2, these competitors did not enter the industry until 2003 or later. Our search yielded only 22 contests over the sample period for which a news article mentioned a vote recommendation from one or more of these three proxy advisors. For the purposes of the present study, we focus on recommendations made by ISS.

for 40; and both an ISS report and a news announcement for 96. We are missing both reports and news announcements for 95 contests. However, a reading of additional news stories revealed that a substantial number of these contests with "missing recommendations" were resolved, prior to a vote, via negotiated settlements between the parties that were announced well in advance of the time when ISS typically issues its reports. Therefore, for many of these negotiated outcomes, ISS recommendations would not have played a substantive informational role. We also note that the median value of total assets for firms with no recommendations ($1.23 billion) is only about half that of firms for which we do have recommendations ($2.40 billion). Hence, it seems likely that ISS never issued recommendations for some of the smaller firms, particularly during the earlier part of sample in which its coverage was less comprehensive. Based on this reasoning, we conclude that our sample is sufficiently comprehensive to permit valid inferences about the role of proxy advice in contest situations.

We read news articles, ISS reports, and dissident proxy filings for each proxy contest in our sample to determine relevant background details, including any non-board election items being proposed and whether there was an outstanding dissident takeover bid at the start of the contest. We supplemented this information with stock price data from CRSP, institutional holdings data from CDA/Spectrum 13f, and SIC industry codes from EDGAR. Other data, including dissident and management ownership, voting rules, internal governance arrangements, and miscellaneous contest characteristics, were obtained from proxy filings and other SEC filings.

Our empirical research design requires meaningful binary classifications of vote recommendations and contest outcomes. Since vote contests and recommendations usually involve multiple election items, we employ the following scheme: 1) a recommendation is considered pro-dissident if ISS endorses at least one of the dissident director nominees;[20] 2) an outcome is deemed to be a dissident victory if the dissident team wins at least one seat on the board; and 3) privately-negotiated settlements are classified as dissident victories. The rationale for classifying settlements as dissident wins is that, invariably, such settlements involve concessions made by incumbent management teams to dissident groups.[21]

[20]Fewer than three percent of the contests in our final sample entailed a "split" recommendation in which ISS favored some but not all of the dissident nominees.

[21]For example, in early March 2001, Carl Icahn launched a proxy contest at VISX Inc., citing management's unwillingness to contemplate a sale of the company. The company subsequently amended its shareholder rights plan and agreed to let Icahn conduct due diligence pursuant to a sale. In May 2001, Icahn withdrew his slate of

Table 1 reports descriptive statistics for the sample of 198 vote recommendations used in our empirical analysis as well as for the broader universe of 293 contests. Panel A shows that, in our sample, the overall frequency of contests does not exhibit any strong trend over time, yet the percentage of contests with associated ISS recommendations has risen fairly steadily to a high of 86.5% in 2004-2005. The size distribution of firms is clearly skewed in each period, suggesting, not surprisingly, that ISS sometimes issues recommendations for very large firms.

Panel B of Table 1 reports recommendation frequencies by various contest types. (Note that a given contest can be classified under more than one type.) Contest types include, for example, whether the contest involves a concurrent takeover bid by the dissident, whether the target of the proxy contest is an investment company, or whether the dissident is explicitly seeking reforms of the firm's internal governance policies. As shown, it is not uncommon in the overall sample for a dissident to be seeking the sale or liquidation of the company (28.3%) or to be proposing formal amendments to the firm's internal governance (23.2%).

In Panel C, the sample of 198 recommendations is broken down according to the type of the soliciting dissident. Many of the soliciting dissidents are investment companies (35.4%) or nonfinancial corporations (21.2%). Only rarely is the dissident a current officer of the company (2.0%) or a labor union (1.0%). In the overall sample, recommendations are fairly evenly divided between those favoring dissidents (44.9%) and those favoring incumbent management (55.1%). Across most of the contest and dissident types, both pro-dissident and pro-management recommendations are well-represented.

5. EVIDENCE ON THE MARKET REACTION TO VOTE RECOMMENDATIONS

In this section, we investigate whether proxy advice contains market-relevant information. We assess the information content of recommendations in two ways. First, we examine event-study returns around the time vote recommendations become public. Second, we test whether stock prices exhibit abnormal volatility around recommendations. The results of these tests form

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nominees, stating that there was no longer a need for a contest given management's "significant shift" toward his position. (Dow Jones News Service, May 1, 2001).

the backdrop for Section 6, in which we attempt to determine the precise channel (i.e., prediction or certification) through which information in vote recommendations might affect stock prices.

5.1. Stock Price Reactions

Table 2 reports results from an event study of abnormal returns around vote recommendations.[22] We use a market model approach to compute cumulative abnormal returns (CARs); market model parameters are estimated over the 250 trading days preceding the relevant event window. Our main focus is on price responses to vote recommendations, but we also report CARs around other key dates during the contest period to facilitate comparisons with the prior literature. To avoid spurious inferences about the information content of vote recommendations, we include only contests for which at least three trading days separated the public arrival of a recommendation and the public resolution of the contest.

The evidence in Table 2 underscores the economic significance of the proxy contests in our sample. The two rightmost columns of Table 2 show average CARs and associated t-statistics over the entire contest period. The pre-contest reference date is taken to be 26 trading days prior to the earliest filing date of a DEFC14A proxy or a PREC14A "preliminary" proxy (if one was made) disclosing the dissident campaign. The resolution date is taken to be the date of the earliest news story announcing either a) a pre-vote negotiated settlement or b) the preliminary voting result. The average cumulative abnormal return over the contest period for the full sample is 17.26 percent, which is highly statistically significant (t-statistic: 6.27). The contest-period return is also significantly positive in each of the subsamples that we consider. It is noteworthy that, even for contests won by management, there is a sizable positive average CAR of 19.24 percent (t-statistic: 5.38). This suggests that even contests that fail to increase dissident board representation can have a beneficial impact on firm valuations. For example, the arrival of a dissident may force incumbent management to commit to changes that are good substitutes for what the dissident is proposing.[23]

[22]Sample sizes in these and other tests are sometimes smaller than the full sample size of 198 due to unavailability of data on explanatory variables or daily stock returns.

[23] See Mulherin and Poulsen (1998) for evidence on how the shareholder value effects of proxy contests depend on post-contest events (e.g., whether incumbent management is replaced and whether the firm is acquired).

In addition to reporting CARs around the recommendation date (we discuss these in more detail below), Table 2 also shows announcement effects around the contest filing date and around the contest resolution date. As in previous studies of proxy contests (see, e.g., Dodd and Warner (1983), DeAngelo and DeAngelo (1989), and Mulherin and Poulsen (1998)), the abnormal returns around the initiation of proxy contests are positive, large, and statistically significant. The average CAR over a [-25, +1] window surrounding the initial filing is 10.48 percent (significant at 1%) for the full sample. The filing-date return is significantly positive for each subsample of contests, including contests subsequently won by dissidents or by incumbent management, contests occurring prior to Regulation FD (effective October 23, 2000), contests occurring after the N-PX vote disclosure rules (effective April 14, 2003), and those taking place during the interim period in between. Around the conclusion of a contest, the market appears to regard a dissident (management) win as good (neutral or bad) news, as indicated by average CARs of 2.02 percent (t-statistic: 2.89) for the dissident-win subsample and -1.07 percent (t-statistic: -1.56) for the management-win subsample. A somewhat more nuanced interpretation is that it is perceived to be good news when the dissident campaign is compelling enough to win, but a disappointment when the dissident is too weak to win.

We now turn to abnormal returns around the recommendation date. Our event study design reflects the fact that the exact time at which vote recommendations become public is uncertain given the sequential process through which recommendations are first delivered to institutional clients (the "report release date") and then possibly reported later by the public news media (the "news publication date"). When we have a publication date for the earliest Factiva or LexisNexis news story covering a recommendation, we measure the recommendation date announcement return over an event window of [-7, +1] around the news publication date. When no news publication date is available, we use an effective window of [-1,+7] around the report release date. Our intent in using a relatively wide event window is to ensure that we capture the price response to a vote recommendation whenever it might be occurring – whether at the initial release of the report to institutional clients, through gradual diffusion of information via trading and word-of-mouth, or upon the arrival of a public news story.[24]

[24] The time between the report release date and the first news publication date is 6 days or less for 95 percent of the contests for which we know both dates.

Since it is public knowledge that ISS routinely issues vote recommendations, we would expect the unconditional mean price response to vote recommendations to be close to zero if markets are efficient. Table 2 shows that the average abnormal return around the recommendation date is 1.35 percent across all contests, which is not statistically different from zero at conventional levels. However, when we split the sample according to the direction of proxy advice, we see a stark difference between the subsample CARs: recommendations for dissidents are associated with positive abnormal returns of 3.76 percent (significant at the 1% level), while recommendations for management are associated with insignificant, negative abnormal returns of -0.56 percent. A t-test reveals that the difference is statistically significant (p-value: 0.009). Thus, it seems that the market receives vote recommendations more favorably when they endorse the dissident team.

In Table 3, we further explore the price impact of vote recommendations by comparing, across various subsamples, the average CAR around pro-dissident recommendations to the average CAR around pro-incumbent recommendations.[25] For instance, we examine whether firm size affects the extent to which directionality matters for abnormal returns. If small companies disclose less information than large companies and tend to enjoy less overall analyst and media coverage, then one might expect the direction of proxy advice to be particularly informative when the target of a proxy contest is small. In line with this view, we find that, for contests involving small companies (i.e., companies with asset values below the sample median), the average CAR around endorsements of dissidents is 6.09 percent, which is significantly higher than the −0.82 percent average CAR around endorsements of incumbents. We also examine whether enactment of Regulation Fair Disclosure ("Reg FD") in late October 2000 altered the information content of proxy advice. Reg FD prohibits firms from selectively disclosing material information to investment advisors and other market professionals. Since ISS was an investment advisor over our sample period,[26] it was subject to the restrictions established by Reg FD. Hence, to the extent that Reg FD eliminated real or perceived information disclosures to ISS from incumbent management teams, we would expect investors to ascribe less information content to recommendations in the post-FD period. Consistent with this interpretation, we find that average CARs were significantly more positive for pro-dissident recommendations than for

[25] For convenience, the first row of Table 3 repeats the sample-wide averages from Table 2 so that they can be easily compared with the other cross-tabulated results.
[26] See the Form ADV filed by Institutional Shareholder Services in 2006.

pro-incumbent recommendations in the pre-FD era but not in the post-FD era. Finally, the directionality of proxy advice also seems to matter significantly for the stock price reaction when the initial filing-date return is above the sample median, perhaps suggesting that these contests involve more credible dissident campaigns. Overall, the findings in Table 3 support the notion that market-relevant information is contained in the direction of proxy vote recommendations.

5.2. Stock Price Volatility

The returns-based event study evidence in Section 5.1 highlights the differential price responses to pro-dissident versus pro-incumbent recommendations. We also consider abnormal stock price volatility as an alternative measure of information flows. If proxy advice brings new, price-relevant information to market participants, then stock prices should exhibit abnormally high short-term volatility. The advantage of using volatility to measure the informational impact of recommendations is that we do not need to specify the precise form of the information (e.g., which rival team was endorsed or whether the return should be positive or negative).

Table 4 reports cross-sectional medians of absolute market-adjusted abnormal returns for each day in the event window. The question of interest is whether volatility increases when vote recommendations become public. To test this hypothesis, we employ a test methodology developed in Corrado (1989). A limitation of this approach is that it is based on daily volatility estimates. Hence, uncertainty about the precise day on which recommendations become public will reduce the power of the test. To partially mitigate this problem, we restrict the sample to contests for which we have a Factiva or LexisNexis news announcement date. Despite the reduced sample size, we still find significant evidence — not only in the full sample of news announcements, but also in the pro-dissident and pro-management subsamples — that recommendations do convey information to the market. In particular, compared to volatility on a typical day during the contest period, volatility is abnormally high on day 0 and day +1 relative to the news announcement.

6. TESTS FOR PREDICTION AND CERTIFICATION

Having found evidence that stock prices respond to vote recommendations, we turn to our second main question: What is the nature of the information in proxy vote recommendations? As discussed in Section 3, vote recommendations can affect stock prices through two distinct yet related channels. First, vote recommendations can alter beliefs about the probabilities of dissident and incumbent wins (prediction). Second, vote recommendations can change assessments of the merits of dissidents and incumbent management and, hence, lead to revisions in outcome-contingent firm valuations (certification).

We test the prediction and certification hypotheses in two stages. First, in Section 6.1, we test the prediction hypothesis using a multivariate probit analysis to examine whether vote recommendations help forecast contest outcomes beyond what can be forecasted given an extensive set of contest and firm characteristics publicly known at the recommendation date. In Section 6.2, we test the certification hypothesis using a novel estimation approach that identifies certification effects in stock returns after adjusting for the price impact of changes in outcome probabilities.

6.1 PREDICTION EFFECTS

Under the prediction hypothesis, proxy advice causes investors to update their probability beliefs about contest outcomes. Operationally, we test the prediction hypothesis by examining whether vote recommendations are good statistical predictors of contest outcomes after conditioning on other known predictors.[27]

Table 5 reports some preliminary univariate evidence on the correlation between contest outcomes and vote recommendations. The table shows that dissident victories are somewhat more frequent after pro-dissident recommendations. The dissident win rate is 55.06% after a pro-dissident recommendation but only 41.28% after a pro-management recommendation. A Pearson chi-squared statistic shows that the difference is significant at the 10% level.

[27] Our prediction tests do not need to identify the exact mechanism by which proxy advice causes investors to update their probability beliefs. In other words, a vote recommendation could have a predictive effect whether the recommendation actually influences the voting behavior of pivotal voters or whether it merely conveys new information that helps the marginal investor to predict contest outcomes.

A limitation of this univariate test is that it ignores possible correlations with other factors. Outcomes and recommendations could exhibit a univariate association even if proxy advice simply repackages already publicly available information. To examine whether recommendations constitute a distinct source of outcome-relevant information to investors, we therefore turn to a multivariate probit analysis of contest outcomes in which we control for observable dissident, firm, and contest characteristics.

6.1.1. CONTROL VARIABLES

All of our control variables reflect information widely known or publicly available to investors around the date of the recommendation. Many of these variables have been found to be useful in predicting vote outcomes in the prior literature (see, e.g., Brickley, Lease, and Smith (1988), Pound (1988), Bethel and Gillan (2002)). Table 6 reports summary statistics.

Most of our control variables measure the ease with which one rival party or the other can secure votes. First, we control for holdings of voting shares by the dissident and incumbent groups (as percentages of total voting shares outstanding). Holdings data are gathered from proxy statements and computed as close to the record date as possible. In computing dissident vote holdings, we include all shares held by dissident director nominees and members of the dissident shareholders' committee. Management holdings are measured as total holdings of all executive officers and company directors, less any holdings of dissidents who are currently serving as company directors.[28]

Procedural voting rules can also affect the ability to collect votes. Companies with majority-vote director election rules may present a greater challenge to dissidents because directors in these cases need to win more than just a plurality to be elected. We include a dummy variable equal to one if a targeted company has a majority-vote rule in place. At the same time, cumulative voting, which permits shareholders to cast votes unequally in favor of a particular director nominee, could make it easier for dissidents to win.[29] Accordingly, we include a dummy variable equal to one if a company permits cumulative voting.

[28] We include voting preferred stock and adjust for multiple classes of shares with differential voting rights. However, we exclude any shares underlying unexercised options because such shares would not confer voting power as of the record date for the scheduled vote.

[29] Recall that we classify an election in which the dissident gains at least one seat as a dissident win.

The type of shareholder meeting might also be related to the ease of collecting a winning number of votes. For example, to be elected at annual shareholder meetings, dissident director nominees only need to obtain more voting support than incumbent directors who are also standing for election. At special meetings of shareholders, in contrast, dissidents may face a higher hurdle in that they must first win enough support to dislodge incumbent directors and then, in a separate tally, collect enough voting support to be elected. In a similar vein, consent solicitations usually are associated with higher voting thresholds (e.g., to be elected, a dissident needs voting support from a majority of all outstanding shares and not simply a majority of shares cast as at an annual meeting). To control for these differences, we include indicators for whether a proxy fight was waged in the context of a special meeting or a consent solicitation.

Dissidents and incumbents often retain professional proxy solicitors (e.g., Georgeson, Inc.) to contact uncommitted shareholders for the purpose of publicizing a proxy campaign. We use dummy variables to indicate the employment of an outside proxy soliciting firm by the dissident or the incumbent management team. Also, following Pound (1988), we include the log of the number of days between the contest initiation and the scheduled vote date. Longer contests afford a dissident more time to publicize a business plan and garner shareholder support. Finally, we include the number of shareholders of record to account for variable costs of soliciting proxies.

We also consider variables that capture shareholders' perceptions of the merits of the two competing teams. First, we use a dummy variable equal to one if a formal takeover offer by the dissident is already outstanding at the time of contest initiation. Shareholders might be more inclined to elect a dissident group's nominees if they believe this will lead to the dismantling of takeover barriers and the eventual realization of a substantial takeover premium. Second, we use two characteristics of the incumbent CEO that might affect beliefs about the extent to which the CEO is responsible for past firm performance: the log of CEO tenure and a dummy variable equal to one if the CEO is Chairman (or if there is no Chairman). Third, we include a dummy variable equal to one if an individual dissident is an "activist," as indicated by whether the dissident appeared more than once in our sample. Activist dissidents, who carry out broad reform agendas across multiple firms, may be perceived to be more or less committed to firm-specific value maximization. Finally, we include context variables for the economic environment in which a contest takes place. These include the size of the company (total book

value of assets), industry, time period, institutional ownership, and the targeted company's stock price volatility and adjusted stock performance over the year preceding contest initiation.

We cannot entirely rule out the possibility that the above list of control variables omits some key factor that is relevant to outcome probabilities. However, we are unaware of any major omitted factor that 1) has been studied in the previous literature on proxy contests; 2) was identifiable from public proxy filings or widely known by investors prior to a vote recommendation; and 3) serves as a strong incremental predictor of the outcomes of contested director elections.

6.1.2. MULTIVARIATE ANALYSIS OF CONTEST OUTCOMES

Table 7 shows the results of our multivariate probit analysis of the relation between proxy vote recommendations and contest outcomes. The dependent variable equals 1 if a contest is won by the dissident and equals 0 otherwise. Column 1, which contains our base specification, provides some first evidence that the probability of a dissident win is positively related to the pro-dissident recommendation dummy, REC^D. The regression includes the natural logarithm of total assets, an annual time trend, pre-FD and post-N-PX dummy variables, and dummies for each 1-digit SIC industry that contains at least 10 firms in our sample. The marginal effect of REC^D is significant at the 6 percent level (z-statistic: 1.89), and the estimated magnitude is meaningful: a recommendation in favor of the dissident is associated with an increase in the probability of a dissident win by about 14.1 percentage points, or about one-third of the overall dissident-win probability.

Column 2 adds in controls for voting power, voting rules, and meeting type. The key control variables, including dissident ownership, management ownership, and the presence of cumulative voting, are each significant. Furthermore, their coefficient estimates have signs that are consistent with our *a priori* intuition. The coefficient on the consent solicitation dummy is positive and weakly significant, indicating that the written consent solicitation process may disadvantage dissidents. Notably, the coefficient on REC^D is positive and statistically significant at the 5 percent level. Thus, while structural and procedural sources of voting advantage do help

predict contest outcomes, such factors do not subsume the predictive power of proxy recommendations.

In Column 3, we include variables to control for other sources of voting support and for the perceived merits of the rival parties. The coefficient estimate for REC^D becomes slightly more positive and is still significant at the 5 percent level. Among the additional control variables, CEO duality is significant. When the CEO and Chairman is the same individual, dissidents are less likely to win, *ceteris paribus*. Two other added controls have statistically significant coefficients whose signs accord with economic intuition: the log of CEO tenure and the presence of an incumbent-hired proxy solicitor.

Finally, Column 4 adds in controls for institutional ownership and the general informational environment. Once again, our finding of a positive relation between the contest outcome and the vote recommendation is robust. Indeed, the marginal effect of the recommendation on the outcome probability increases to 29.5% and is significant at the 1 percent level (z-statistic: 2.75). Among the new control variables, Ln(institutional ownership) has a positive and significant coefficient. None of the other controls introduced in this specification is significant at the 5 percent level.[30]

The clear message that emerges from our probit analysis is that vote recommendations are good statistical predictors of outcomes – even after controlling for a variety of contest, firm, dissident, and management characteristics. The fact that the coefficient on the recommendation variable remains significant across several nested regression specifications allows us to reject the null hypothesis of no prediction in favor of the view that proxy advice contains probability information beyond what is otherwise available to market participants.

[30] We have also estimated three additional probit regressions (not reported in a table) to test whether the incremental predictive power of proxy advice varies across different environments. Each regression is similar to that in specification (4) of Table 7, except that REC_i^D is replaced by two interactive variables formed from REC_i^D and one of the following pairs: 1) binary variables indicating whether institutional ownership is above or below the sample median; 2) binary variables indicating whether prior-year stock price volatility is above or below the sample median; and 3) binary variables indicating whether a contest occurred before or after the effective date of Regulation Fair Disclosure (October 23, 2000). In each of the three regressions, the two interaction terms involving REC_D^i are individually positive and significant, but they are not significantly different from each other. Thus, the predictive power of vote recommendations does not appear to differ substantially along these three dimensions of the contest environment.

6.2 CERTIFICATION EFFECTS

Under the certification hypothesis, proxy advice causes investors to update their valuation beliefs about contest outcomes. We test for certification by examining whether returns around a vote recommendation are systematically related to the direction of the recommendation after netting out the prediction effect. This requires disentangling the stock-price effects of changes in valuation assessments from the stock-price effects of changes in probability beliefs. We proceed in two ways. First, in Section 6.2.1, we test the certification hypothesis against the null hypothesis of no certification by exploiting a simple statistical relationship that must hold in the absence of certification effects. Second, in Section 6.2.2, we formulate a parsimonious structural model that allows us to estimate underlying certification parameters and to test specific hypotheses regarding the nature of certification.

6.2.1 Certification and Stock Prices

We begin by extending the model in Section 3 to derive a test of the certification hypothesis against a null of no certification. From the discussion of Equation (5), price changes around a recommendation announcement will depend, possibly nonlinearly, on changes in the marginal investor's probability beliefs as well as on changes in his assessments of dissident and management quality. The key idea in our testing approach is to utilize stock price changes around two different return intervals to "substitute out" unobserved pre-announcement valuation assessments. This leads to a simple mathematical relationship—one involving only observable or estimable quantities—that must hold under the null hypothesis of no certification.

First, consider how the marginal investor's assessments of management and dissident quality evolve around the arrival of proxy advice. As before, let $t = A-1$ be a date after the start of the contest but before REC^D is announced, and let $t = A$ be the earliest date on which REC^D becomes publicly known. Under the null hypothesis of no-certification, REC^D does not convey any information to market participants about dissident or management quality. Formally, the null implies that, in Equations (4), $g^D(REC^D) = g^M(REC^D) = 0$ for $REC^D = 0,1$. Thus, the price change between dates *A-1* and *A* in Equation (5) simplifies to

(6) $$P_A - P_{A-1} = (\pi_A - \pi_{A-1})(D_A - M_A) + \pi_{A-1}\eta_A^D + (1-\pi_{A-1})\eta_A^M .$$

In view of (6), one might be inclined to test the null by simply regressing the price change $P_A - P_{A-1}$ on the recommendation REC^D. Since REC^D does not appear on the right-hand side of Equation (6), it should not have any explanatory power. However, the difficulty in using such an approach to test the null of no certification is twofold: First, the valuation differential $D_A - M_A$ in Equation (6) is not directly observable. Second, even under the null, REC^D can be correlated with the differential $D_A - M_A = D_{A-1} - M_{A-1} + \eta_A^D - \eta_A^M$ if the vote recommendation is based, at least in part, on past public information which could be correlated with the pre-recommendation differential $D_{A-1} - M_{A-1}$.

To eliminate the unobserved term $D_A - M_A$ from (6), we proceed as follows. Let $t = C$ be the date on which the winner of the contest is publicly revealed. Between dates A and C, the market's outcome-contingent valuations given dissident and management wins evolve as

(7) $$D_C - D_A = \eta_C^D$$
$$M_C - M_A = \eta_C^M$$

where η_C^D and η_C^M are mean-zero innovations relative to date A information. We can then write the price change between dates A and C as

(8) $$P_C - P_A = (\pi_C - \pi_A)(D_A - M_A) + \pi_C\eta_C^D + (1-\pi_C)\eta_C^M .$$

We rearrange Equation (8) to derive an expression for $D_A - M_A$ and then substitute out $D_A - M_A$ in Equation (6). Dividing through by P_{A-1} (so as to express valuation effects in relative terms rather than as absolute dollar amounts), we obtain the following simple equation that holds under the null hypothesis:

(9) $$R_A - \left(\frac{\pi_A - \pi_{A-1}}{\pi_C - \pi_A}\right) R_C = \eta$$

where $R_A \equiv (P_A - P_{A-1})/P_{A-1}$ is the return around the recommendation arrival, $R_C \equiv (P_C - P_A)/P_{A-1}$ is the price change around the contest resolution also normalized by P_{A-1}, and η is a noise term with the following form:

$$(10) \qquad \eta = \pi_{A-1}\frac{\eta_A^D}{P_{A-1}} + (1-\pi_{A-1})\frac{\eta_A^M}{P_{A-1}} - \left(\frac{\pi_A - \pi_{A-1}}{\pi_C - \pi_A}\right)\left[\pi_C\frac{\eta_C^D}{P_{A-1}} + (1-\pi_C)\frac{\eta_C^M}{P_{A-1}}\right].$$

Observe that η is a combination of the valuation shocks $\eta_A^D, \eta_A^M, \eta_C^D$, and η_C^M, which are all mean-zero and uncorrelated with REC^D under the null of no certification. Furthermore, π_C is (trivially) equal to 1 or 0, depending on whether the dissident is observed to win the contest. Hence, we can use regressions based on Equation (9) to test the null hypothesis, provided that valid empirical proxies for R_A, R_C, π_A, and π_{A-1} are available. Toward this end, we carry out a basic empirical test for certification by estimating an OLS cross-sectional regression of the form

$$(11) \qquad PDIFF_i = \gamma_0 + \gamma_1 REC_i^D + \varepsilon_i$$

where i indexes the different contests, and where the dependent variable, $PDIFF_i$, is the empirical analogue of the left-hand side of Equation (9):

$$(12) \qquad PDIFF_i \equiv CAR^i_{[REC-7,REC+1]} - \left(\frac{\hat{\pi}^i_A - \hat{\pi}^i_{A-1}}{\pi^i_C - \hat{\pi}^i_A}\right) \times \left(\frac{P^i{}_{REC+1}}{P^i{}_{REC-8}}\right) \times CAR^i_{[REC+2,OUTCOME+1]}.$$

The construction of $PDIFF_i$ relies only on observed prices and estimated probabilities. In particular, π_C^i is an observable binary variable equal to 1 if the dissident wins the contest and 0 if not; and $\hat{\pi}_A^i$ and $\hat{\pi}_{A-1}^i$ are fitted probabilities of dissident victory derived from logit regressions (similar to specification (2) in Table 7) that include and exclude, respectively, REC_i^D as an explanatory variable;[31] $CAR^i_{[REC-7,REC+1]}$ and $CAR^i_{[REC+2,OUTCOME+1]}$ are cumulative abnormal returns over event windows around the recommendation and contest conclusion dates, respectively; and P^i_{REC-8} and P^i_{REC+1} are daily closing prices 8 days before the recommendation announcement date (i.e., the starting price for the abnormal return for day REC-7) and 1 day after the recommendation date, respectively. Note that the use of cumulative abnormal returns rather than total returns leads to more precise measurement of firm-specific valuation changes. Also note that the scaling factor ($P^i_{REC+1} / P^i_{REC-8}$) ensures that, in accordance with Equation (9), valuation changes over the two return intervals are effectively measured relative to the same pre-announcement stock price, P^i_{REC-8}.

Assuming the disturbance ε_i in (11) is mean-zero and uncorrelated with REC_i^D,[32] OLS should yield consistent estimates of γ_0 and γ_1. Our basic test for certification centers on γ_1. Under the null of no certification, the estimate of γ_1 should not be significantly different from 0 since REC_i^D, being absent from (9), should not have any explanatory power in (11). On the other hand, an estimate of γ_1 significantly different from zero would be evidence against (9) and, hence, against the no-certification null.

[31] Using a logit regression based on Specification (2) of Table 7 (rather than one of the other specifications) is a compromise between having a good model fit for the estimated probabilities and having a large sample size.

[32] Zero correlation between REC_i^D and the disturbance term ε_i under the null is likely given that a) REC_i^D does not provide any new information related to η_A^D and η_A^M and given that b) by definition, η_C^D and η_C^M are future innovations that occur after REC_i^D is issued. Thus, the only reason ε_i and REC_i^D might be correlated is if the causality flows in the other direction and ISS incorporates some of the public information represented by η_A^D and η_A^M into its recommendation. However, since in practice there is a lead time required to prepare recommendation reports, this possibility is unlikely if only a short amount of time elapses between dates *A-1* and *A*.

We also estimate a variant of this test which accounts for the possibility that certification effects might be amplified or reduced according to the marginal investor's ex ante beliefs about the probability of dissident victory. Indeed, a revision in the assessment of dissident quality should have a small impact on stock prices if the perceived probability of a dissident win is small. This motivates a cross-sectional regression in which REC_i^D is interacted with the pre-recommendation dissident-win probability:

$$(13) \qquad PDIFF_i = \gamma_0 + \gamma_1(\hat{\pi}^i_{A-1} \times REC_i^D) + \varepsilon_i \ .$$

An estimate of γ_1 in (13) significantly different from zero would again suggest that, contrary to the null hypothesis, the marginal investor revises his valuation assessments in response to vote recommendations.

One potential concern with OLS estimation of (11) or (13) is that the dependent variable $PDIFF_i$ (and, in the case of (13), the regressor $\hat{\pi}^i_{A-1} \times REC_i^D$) is constructed from fitted probabilities rather than from the true (unobserved) probabilities. While OLS will yield consistent coefficient estimates so long as $\hat{\pi}^i_{A-1}$ and $\hat{\pi}^i_A$ are consistent estimates of the true probabilities π^i_{A-1} and π^i_A, the OLS standard errors will generally be inconsistent due to sampling variation in $\hat{\pi}^i_{A-1}$ and $\hat{\pi}^i_A$ (see, e.g., Newey (1984), Pagan (1984), Newey and McFadden (1994), and Wooldridge (2002)). In order to address this issue, we supplement our benchmark OLS estimation by using generalized method of moments (GMM) to estimate a system of three simultaneous equations: the logit equation for $\hat{\pi}^i_{A-1}$, the logit equation for $\hat{\pi}^i_A$, and the return Equation (11) (or Equation (13)). Under our modeling assumptions, each of the explanatory variables in the system is orthogonal to the residual for the equation in which the variable appears. Hence, we can consider the three equations as a just-identified system (see the Appendix for the specific moment conditions in the estimation). Because parameters in the three equations are estimated simultaneously, the standard errors from the GMM estimation account for the fact that $PDIFF_i$ (and $\hat{\pi}^i_{A-1} \times REC_i^D$ in Equation (13)) are calculated from generated probabilities rather than from the true probabilities.

Table 8 reports coefficient estimates and standard errors for equations (11) and (13). For brevity, we do not report the logit coefficients. Note that while the standard errors of the coefficients should differ according to which estimation approach is used (i.e., two-stage OLS estimation versus GMM simultaneous equations estimation), the coefficient estimates themselves will be identical under both approaches.[33] Below each coefficient estimate, we report OLS heteroskedasticity-robust standard errors (in parentheses) and GMM standard errors (in square brackets). The coefficient estimate for REC^D in Model 1 is 0.041 and is significantly different from zero at the 5 percent level using OLS heteroskedasticity-robust standard errors and at the 10 percent level using the GMM standard errors. In Model 2, the estimated coefficient on the interaction term is 0.082, which is significantly different from zero at the 5 percent level with both the OLS heteroskedasticity-robust standard errors and the GMM standard errors, suggesting that our inferences are robust to sampling variation in the fitted probabilities $\hat{\pi}^i_{A-1}$ and $\hat{\pi}^i_A$. Overall, the results show that outcome-contingent value changes around a vote recommendation are systematically related to the direction of the recommendation, thus leading us to reject the no-certification hypothesis embodied in Equations (11) and (13).

6.2.2 Additional Tests for Certification

For a more detailed examination of certification, we next impose some basic structure on how vote recommendations can lead to revisions in outcome-contingent valuations. We assume that vote recommendations impact valuations in proportion to the pre-recommendation stock price P_{A-1}. Specifically, we assume that the certification functions in Equations (4) take the form

$$(14) \qquad g^D(REC^D) = [\delta^D REC^D + \delta^M (1 - REC^D)] P_{A-1}$$
$$g^M(REC^D) = [\mu^D REC^D + \mu^M (1 - REC^D)] P_{A-1}$$

[33] That the coefficient estimates will be the same under OLS (the two-stage approach) and GMM (the simultaneous equations approach) follows from the recursive nature of the system: $PDIFF_i$ depends on $\hat{\pi}^i_{A-1}$ and $\hat{\pi}^i_A$, but neither $\hat{\pi}^i_{A-1}$ or $\hat{\pi}^i_A$ depends on $PDIFF_i$. Hence, the moment conditions from GMM estimation of the just-identified system coincide exactly with the conditions that define equation-by-equation estimation (see Appendix).

where δ^D, δ^M, μ^D, and μ^M are constants that capture the various certification effects of the recommendation.[34] For example, a pro-dissident vote recommendation ($REC^D = 1$) could be perceived as good news about dissident quality ($\delta^D > 0$), while a pro-management recommendation ($REC^D = 0$) could reflect negatively on the dissident ($\delta^M < 0$).

By an argument similar to the one used in Section 6.2.1, Equations (14) imply the following simple structural equation involving the underlying certification parameters:

$$\begin{aligned} R_A - \left(\frac{\pi_A - \pi_{A-1}}{\pi_C - \pi_A}\right) R_C = {} & \mu^M + (\delta^M - \mu^M)\pi_{A-1} \\ & + (\mu^D - \mu^M) REC_D \\ & + (\delta^D - \delta^M - \mu^D + \mu^M)(\pi_{A-1} \times REC^D) + \eta \end{aligned} \tag{15}$$

where, as before, $R_A \equiv (P_A - P_{A-1}) / P_{A-1}$ is the return around the recommendation announcement, $R_C \equiv (P_C - P_A) / P_{A-1}$ is the (normalized) price change around the contest resolution, and η is given by Equation (10). Furthermore, it is straightforward to show that η is uncorrelated with all of the other terms on the right-hand side of (15).

To estimate the model, we run cross-sectional regressions of the following form:

$$PDIFF_i = \alpha + \beta_1 \hat{\pi}^i_{A-1} + \beta_2 REC^D_i + \beta_3 (\hat{\pi}^i_{A-1} \times REC^D_i) + \varepsilon_i \tag{16}$$

where $\hat{\pi}^i_{A-1}$, REC^D_i, and $PDIFF_i$ are as defined in section 6.2.1 above. The regression yields estimates for the four reduced-form parameters α, β_1, β_2, and β_3 that can be linearly rearranged in light of (15) to obtain estimates of the four structural parameters δ^D, δ^M, μ^D, and μ^M.

[34] Although we assume for simplicity that proxy advice has constant certification effects across firms, this assumption can be relaxed to allow for firm-specific certification effects. We maintain the simpler setup here since we are primarily interested in average certification effects across firms.

As with the unstructured model in Section 6.2.1., we again use two different approaches to test for certification. Our first approach, based on OLS, ignores the fact that the probabilities $\hat{\pi}^i_{A-1}$ and $\hat{\pi}^i_A$ used in the regression Equation (16) are not true subjective probabilities, but rather fitted values obtained from a pair of first-stage logit regressions. In general, sampling variation will cause this two-stage approach to yield inconsistent standard errors. Therefore, our second approach uses GMM to estimate standard errors based on treating (16) and the two logit equations as a system of three simultaneous equations. We again implement the GMM estimation as a just-identified system involving one moment condition per explanatory variable (see the Appendix). Since all parameters in the three equations are estimated jointly, the standard errors properly reflect the presence of the generated regressand and regressors.

Observe from Equation (16) that, as a practical matter, a high degree of multicollinearity is likely to be present in the unrestricted model since both the binary variable REC^D_i as well as the interaction variable $\hat{\pi}^i_{A-1} \times REC^D_i$ are included as regressors. The resulting loss of precision in the parameter estimates could obscure any certification effects that might be present. Thus, in addition to estimating the full model, we also estimate two restricted models in which REC^D_i does not appear as a stand-alone regressor. In the first restricted model, we assume there are no management certification effects. This assumption is captured by the parameter restriction $\mu^D = \mu^M$. In the second restricted model, we assume that dissident certification effects are absent, which corresponds to the parameter restriction $\delta^D = \delta^M$.

Table 9 presents the results of structural estimation of the unrestricted and restricted models. Panel A reports the R^2, residual standard error, and sample size for each version of the model, along with estimates and standard errors for the four underlying structural certification parameters. Once again, OLS heteroskedasticity-robust standard errors are reported in parentheses, and GMM standard errors are in square brackets. The OLS estimates for the unrestricted model provide some evidence of certification: The estimate of δ^D is positive and significant at 5%, and the estimate of δ^M is negative and significant at 5%. These point estimates indicate that, *ceteris paribus*, a pro-dissident recommendation increases the dissident-win contingent stock valuation by about 8.4 percent of the pre-recommendation stock price, whereas a pro-management recommendation causes a corresponding decrease in the dissident-win valuation of about 5.6 percent. We note, however, that when the presence of the generated regressand and regressors in Equation (16) are accounted for via GMM, the parameter estimates of δ^D and δ^M are no longer individually significant. In the restricted model with $\mu^D = \mu^M$, the OLS estimate of δ^D is positive and mildly significant, but the other individual parameter estimates are, once again, not individually significant.

Certification can take on different forms, depending on how the market interprets information from recommendation announcements. Thus, we turn to hypothesis tests regarding various relationships among the structural certification parameters δ^D, δ^M, μ^D, and μ^M. Panel B of Table 9 reports p-values corresponding to three Wald hypothesis tests conducted under each of the three models. First, we consider whether investors learn about dissidents based on the directionality of advice ("dissident certification"). A Wald test based on the OLS results leads us to reject the null of no dissident certification ($\delta^D = \delta^M$) in both the unrestricted model (p-value: 0.003) and the no-management-certification model (p-value: 0.007). Likewise, in both of these models the GMM standard errors point to rejection of the no-dissident-certification null at the 5 percent level.

Next, we consider the possibility of "management certification." In both the unrestricted and restricted models, we cannot reject the null hypothesis ($\mu^D = \mu^M$) that vote recommendations have no effect on investors' assessments of incumbent management quality. The asymmetry between the evidence on dissident certification and the evidence on management certification suggests that investors generally know less about dissidents than about incumbent management. Indeed, dissidents, unlike incumbents, typically do not have established track records at the firms that they target. Thus, considerable uncertainty is likely to exist concerning the viability of dissidents' business plans and how much shareholder value the dissident nominees would deliver if elected to the board.

Lastly, we consider whether directionality in proxy advice helps investors to learn about the difference in quality between the two opposing teams ("differential certification"). In other words, does the direction of a recommendation matter for the differential between assessed dissident quality and assessed management quality? The OLS estimates allow us to reject the hypothesis that pro-dissident advice and pro-management advice have equal effects on the quality differential (p-value: 0.019). However, the GMM estimates do not lead to rejection at conventional levels (p-value: 0.128).

Overall, we conclude that, although there is at best only weak evidence of management or differential certification, proxy advice does appear to have a dissident certification effect. In other words, the directionality of vote recommendations seems to convey substantive information to investors about the quality of dissidents.

7. CONCLUSION

This paper provides a systematic empirical investigation of the role of third-party voting advisory services in contested proxy elections. We focus on vote recommendations made by Institutional Shareholder Services (ISS), a large and prominent proxy advisory firm. Our analysis examines whether vote recommendations bring new information to the market and, if so, whether the information impacts stock prices via a prediction effect and/or a certification effect. We establish three main findings. First, recommendations do appear to be a source of new, market-relevant information. We document positive abnormal stock returns at the arrival

of pro-dissident recommendations, and nonparametric tests reveal that public news of recommendations is accompanied by elevated abnormal stock return volatility. Second, vote recommendations are good statistical predictors of contest outcomes even after controlling for a variety of other predictors such as voting rules, dissident and management ownership, and contest characteristics. Third, proxy advice seems to play a certification role. The results from our empirical tests suggest that investors do revise their valuation assessments of dissidents in response to vote recommendations. While our method for testing for certification effects has been developed in the context of proxy contests, we note that the approach can be applied more generally to other settings in which investors receive interim news that resolves uncertainty about a final outcome. Future work could more fully explore the usefulness of this approach and shed more light on the implications of proxy advice for investor welfare, information aggregation, and the overall functioning of the proxy voting mechanism.

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Table 1

Descriptive Statistics for Contests and Vote Recommendations

This table presents descriptive statistics for a sample of 293 board-related proxy contests during the 1992 to 2005 period and 198 associated vote recommendations issued by Institutional Shareholder Services (ISS). Proxy contests are identified from DEFC14A filings via the SEC EDGAR database. Vote recommendations are identified from the Dow Jones Factiva, Lexis-Nexis, and Investext databases and from information provided by ISS. A vote recommendation is said to favor the dissident group if it endorses at least one dissident director. Panel A reports statistics on the frequencies of contests and recommendations over time and on the size distribution of firms with vote recommendations. Panels B and C provide breakdowns of the sample according to contest type and dissident type, respectively. In Panel B, frequencies and percentages do not total to the entire sample since a contest can appear in more than one category. Contest and dissident type classifications are based on information reported in news articles and DEFC14A filings.

Panel A: Contest and Recommendation Frequencies over Time

	Contests (Initial Sample)			Recommendations		
Time Period	Number	# with Vote Rec's.	% with Vote Rec's.	Avg. (Median) Firm Size, $M Assets	Rec's. for Diss.	Rec's. for Mgmt.
1992-1995	31	12	38.7	2,763.6 (484.4)	4	8
1996-1997	37	19	51.4	3,203.3 (320.7)	5	14
1998-1999	57	27	47.4	766.9 (131.5)	13	14
2000-2001	75	61	81.3	1,220.5 (255.5)	31	30
2002-2003	56	47	83.9	2,629.8 (196.5)	17	30
2004-2005	37	32	86.5	1,155.2 (390.8)	19	13
Total (1992-2005)	293	198	67.6	1,766.5 (240.5)	89	109

Panel B: Recommendation Frequency, by Type of Contest

	All Rec's.		Rec's. for Dissident		Rec's. for Management	
Contest Characteristics	Freq.	% of sample	Freq.	% of sample	Freq.	% of sample
Concurrent takeover bid by dissident	37	18.7	18	9.1	19	9.6
Dissident seeks sale or liquidation of co.	56	28.3	24	12.1	32	16.2
Targeted firm is a fund company	21	10.6	9	4.5	12	6.1
Dissident objects to firm's financial policy	19	9.6	8	4.0	11	5.6
Dissident proposes amendment to internal governance	46	23.2	17	8.6	29	14.6
Dissident proposes removal of a takeover defense	33	16.7	12	6.1	21	10.6

(continued)

Table 1, Continued

Panel C: Recommendation Frequency, by Dissident Type

Dissident Type	All Rec's.		Rec's. for Dissident		Rec's. for Management	
	Freq.	% of Sample	Freq.	% of Sample	Freq.	% of Sample
Investment company	70	35.4	33	16.7	37	18.7
Corporation (excl. investment co's.)	42	21.2	23	11.6	19	9.6
Individual shareholder activist	29	14.6	14	7.1	15	7.6
Labor union	2	1.0	1	0.5	1	0.5
Current officer or director	4	2.0	4	2.0	0	0.0
Former officer or director	18	9.1	3	1.5	15	7.6
Individual activist & former officer or director	4	2.0	2	1.0	2	1.0
Other shareholder group	29	14.6	9	4.5	20	10.1
Total	198	100.0	89	44.9	109	55.1

Table 2: Abnormal Returns Around Key Contest Dates

This table reports average cumulative abnormal returns around key event dates for the sample of 170 board-related proxy contests during 1992-2005 with available stock price data from CRSP and with a vote recommendation issued by Institutional Shareholder Services (ISS). Contests are identified from DEFC14A filings via the SEC EDGAR database. Vote recommendations are identified from the Dow Jones Factiva, Lexis-Nexis, and Investext databases and from information provided by ISS. Abnormal returns are calculated using a standard one-factor market model in which market returns are measured using the return on an equal-weighted CRSP index. The initial filing date is the first date on which the dissident group filed a definitive (DEFC14A) or preliminary (PREC14A) proxy statement with the SEC. The proxy contest resolution date is the earliest news report in the Factiva or LexisNexis database of either 1) a negotiated settlement in which the dissident withdraws the contest; or 2) a resolution of the contest by vote, based on a preliminary vote count. The recommendation announcement date is defined as follows: when a public news story is available, the announcement date equals the date of the earliest such story; when no news story is available, the announcement date is imputed to be the earlier of a) three days prior to the contest resolution date and b) six days after the ISS report date. Only contests in which there are at least three trading days between the announcement date and the resolution date are included. ***, ** and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

		[-25,+1] around earliest filing date of dissident proxy		[-7,+1] around recommendation announcement date		[-1,+1] around date of public resolution of proxy contest		25 days before earliest filing date through 1 day after public resolution	
	N	Mean	T-stat	Mean	T-stat	Mean	T-stat	Mean	T-stat
All contests	170	10.48***	7.29	1.35	1.60	0.35	0.71	17.26***	6.27
By company size									
Large (Assets > median)	87	9.53***	5.66	0.63	0.63	0.66	1.13	16.43***	5.00
Small (Assets <= median)	83	11.48***	4.86	2.09	1.53	0.02	0.03	18.12***	4.06
By time period									
Pre-FD (1/1992-10/2000)	69	13.88***	6.39	2.64**	2.04	0.03	0.04	24.43***	5.89
Interim period (11/2000-3/2003)	52	7.32**	2.50	2.76	1.64	0.28	0.28	14.21**	2.55
Post N-PX rules (4/2003-12/2005)	49	9.05***	3.73	-1.98	-1.39	0.87	1.08	10.39**	2.22
By outcome									
Dissident win	78	10.09***	4.75	1.26	1.04	2.02***	2.89	14.91***	3.50
Management win	92	10.82***	5.53	1.42	1.21	-1.07	-1.56	19.24***	5.38
By ISS recommendation									
For dissident	75	8.54***	4.18	3.76***	3.16	1.43**	2.05	17.37***	4.50
For management	95	12.01***	5.98	-0.56	-0.47	-0.50	-0.74	17.16***	4.44

Table 3: Stock Price Reaction to Proxy Advice, by Direction of Vote Recommendation

This table reports, for various subsamples, average cumulative abnormal returns over a [-7,+1] window surrounding the announcement of vote recommendations issued by Institutional Shareholder Services (ISS). The sample consists of 170 vote recommendations issued during board-related proxy contests over the 1992-2005 period for which stock price data are available from CRSP. Vote recommendations are identified from SEC filings, ISS archives, and the Dow Jones Factiva, Lexis-Nexis, and Investext databases. Abnormal returns are calculated using a standard one-factor market model in which market returns are measured using the return on an equal-weighted CRSP index. The proxy contest resolution date is the earliest news report in the Factiva or LexisNexis news database of either 1) a negotiated settlement in which the dissident withdraws the contest; or 2) a resolution of the contest by vote, based on a preliminary vote count. The recommendation announcement date is defined as follows: when a public news story is available, the announcement date equals the date of the earliest such story; when no news story is available, the announcement date is imputed to be the earlier of a) three days prior to the contest resolution date and b) six days after the ISS report date. Sample sizes and t-statistics (in parentheses) are reported below means. Only contests in which there are at least three trading days between the announcement date and the resolution date are included. The rightmost column reports p-values from t-tests for differences in means. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Contest Subsamples	(1) All Recs.	(2) Rec. for Mgmt.	(3) Rec. for Dissident	P-value of Test for Diff., (2)−(3)
All contests	1.35	-0.56	3.76***	0.009
	(1.60)	(-0.47)	(3.17)	
	170	95	75	
Tender offer by the dissident	-0.68	-2.73	1.50	0.081
	(-0.36)	(-1.03)	(0.57)	
	31	16	15	
Management win	1.42	0.09	3.48**	0.161
	(1.21)	(0.06)	(2.01)	
	92	56	36	
Dissident win	1.26	-1.49	4.02***	0.015
	(1.04)	(-0.83)	(2.46)	
	78	39	39	
Large firms (assets above sample median)	0.63	-0.29	1.72	0.327
	(0.63)	(-0.21)	(1.17)	
	87	47	40	
Small firms (assets below sample median)	2.09	-0.82	6.09***	0.008
	(1.53)	(-0.43)	(3.18)	
	83	48	35	
Pre-FD (Jan. 1992 to Oct. 2000)	2.64**	-0.30	6.69***	0.018
	(2.04)	(-0.17)	(3.57)	
	69	40	29	
Interim Period (Nov. 2000 to Mar. 2003)	2.76	1.50	4.12*	0.427
	(1.64)	(0.61)	(1.80)	
	52	27	25	
Post N-PX (Apr. 2003 to Dec. 2005)	-1.98	-2.92	-0.72	0.164
	(-1.39)	(-1.45)	(-0.37)	
	49	28	21	
Filing date return above sample median	0.78	-1.58	4.49***	0.009
	(0.59)	(-0.89)	(2.36)	
	85	52	33	
Filing date return below sample median	1.92*	0.68	3.19**	0.293
	(1.83)	(0.47)	(2.12)	
	85	43	42	

Table 4: Abnormal Stock Price Volatility Surrounding Vote Recommendations Covered by the Media

This table reports median absolute abnormal returns on event days surrounding news reports of vote recommendations made by Institutional Shareholder Services (ISS) during board-related proxy contests over 1992-2005. The sample consists of recommendation announcements identified from the Dow Jones Factiva and Lexis-Nexis databases. Abnormal returns are calculated using a market-adjusted methodology (using the return on an equal-weighted CRSP index). The recommendation announcement date is defined as the date of the earliest news story reporting a recommendation. We use the nonparametric rank test procedure described in Corrado (1989) to test the one-sided null hypotheses that the absolute abnormal return on a given day is greater than the absolute abnormal returns during the entire [*FILING*+2,*REC*+1] period. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively under the Corrado (1989) one-sided test.

Event Day	All Contests N = 149		Recs. For Mgmt. N = 77		Recs. For Diss. N = 72		Small Firms N = 77		Pre-FD N = 64	
	Median	t-stat	Median	t-stat	Median	t-stat	Median	t-stat	Median	t-stat
-7	0.0188	0.806	0.0208	1.384*	0.0126	-0.271	0.0221	0.631	0.0205	1.128
-6	0.0163	0.827	0.0137	-0.684	0.0199	1.898**	0.0263	1.763**	0.0137	0.475
-5	0.0163	1.169	0.0164	0.136	0.0163	1.54*	0.0162	-0.798	0.0171	1.169
-4	0.0157	0.597	0.0166	0.796	0.0151	0.036	0.0187	-0.233	0.0140	0.295
-3	0.0124	-1.772	0.0122	-1.722	0.0126	-0.769	0.0151	-1.033	0.0114	-1.297
-2	0.0119	-1.632	0.0130	-0.775	0.0114	-1.541	0.0126	-1.459	0.0116	-1.945
-1	0.0135	-0.535	0.0119	-0.698	0.0141	-0.047	0.0121	-1.000	0.0128	-0.823
0	0.0173	1.399*	0.0184	1.840**	0.0163	0.084	0.0206	0.887	0.0192	1.162
1	0.0141	1.821**	0.0134	0.316	0.0159	2.310***	0.0151	0.621	0.0129	0.844

Table 5

Contest Outcome Frequencies, by Direction of Recommendation

This contingency table shows relative frequencies of proxy contest outcomes following proxy advice that endorsed either the dissident group or the incumbent group. The sample consists of 198 vote recommendations issued by Institutional Shareholder Services (ISS) during proxy contests for board seats over 1992-2005. Vote recommendations are identified from DEFC14A filings, Dow Jones Factiva, Lexis-Nexis, Investext, and information supplied by ISS. A vote recommendation is said to favor the dissident group if it endorses at least one dissident director. The dissident is said to win the contest if dissidents win at least one board seat from a shareholder vote or consent solicitation. Beside each cell frequency in parentheses is the percentage of total column outcomes represented by that frequency. The p-value is reported for a Pearson Chi-Squared test of independence.

	Rec. Favors Dissident	**Rec. Favors Incumbent**	**Total**
Dissident Wins	49 (55.06%)	45 (41.28%)	94 (47.47%)
Management Wins	40 (44.94%)	64 (58.72%)	104 (52.53%)
Total	89	109	198
Pearson Chi-Squared Test	**p-value = 0.054**		

Table 6

Characteristics of Contests, Recommendations, and Firms

This table presents summary statistics for various characteristics of our sample of 198 vote recommendations issued by Institutional Shareholder Services (ISS) during proxy contests for board seats over 1992-2005. REC^D is a binary variable indicating that a vote recommendation endorses at least one dissident director. *Dissident ownership* is the percentage of total voting equity held by the dissident group as of the record date; it excludes any unexercised options held by current officers or board members who belong to the dissident committee. *Management ownership* is the percentage of total voting equity held by officers and directors as of the record date, minus any unexercised options and any shares held by dissidents currently on the board. *Cumulative voting* is a binary variable equal to one if and only if voting for directors is cumulative according to state law and the firm's articles or bylaws. *Majority needed to elect* is a binary variable equal to one if and only if a majority affirmative vote is required to elect directors under state law and the firm's articles or bylaws. *Special meeting* is a binary variable equal to one if the proxy solicitation pertains to a special meeting of shareholders (as opposed to an annual meeting); *consent solicitation* is a binary variable equal to one if the dissident is soliciting written consents, and equal to zero otherwise. *Dissident hires proxy solicitor* (*incumbent hires proxy solicitor*) is a binary variable equal to 1 if and only if the dissident team (incumbent team) employs a proxy solicitor during the contest. *Contest length* is equal to the number of days elapsed between the first filing of a DEFC14A and the resolution of a contest (either by vote or settlement). *Shareholders of record* is the number of shareholders of record as reported in the firm's most recent annual report. *Takeover bid by dissident* is a binary variable indicating whether or not there was an outstanding takeover offer by the dissident at the time of contest initiation. *CEO tenure* is the amount of time (years) the CEO has been in office. *CEO is Chairman* equals 1 if the CEO is the same individual as the chairman or if there is no chairman; it equals 0 otherwise. *Dissident is activist* equals 1 if the dissident targeted more than one company in the sample, and equal to zero otherwise. *Firm size* is total assets in millions of U.S. dollars, at the end of the last fiscal year preceding the record date. *Institutional ownership* is the percentage of outstanding equity held by institutions at the end of the latest quarter preceding the record date. *Adjusted return, prior year* is the raw percentage return minus the percentage return on the CRSP Equal-weighted index over the year ending 26 days before the first contest filing. *Volatility, prior year* is the annualized standard deviation of daily stock returns over the year ending 26 days before the first contest filing. All variables are constructed from SEC filings, news articles, Thomson CDA/Spectrum, or CRSP.

Table 6, Continued

Variable	Mean	Median	Std. Dev.	Obs.
REC^D (= recommendation favors diss.)	0.45	0	0.50	198
Dissident ownership (%)	8.97	7.89	8.23	197
Management ownership (%)	8.73	5.30	10.17	198
Cumulative voting	0.08	0	0.27	198
Majority needed to elect	0.22	0	0.41	198
Special meeting	0.06	0	0.24	198
Consent solicitation	0.06	0	0.24	198
Dissident hires proxy solicitor	0.84	1	0.37	196
Incumbent hires proxy solicitor	0.97	1	0.17	196
Contest length (days)	34.78	29	28.51	198
Shareholders of record	3,693.67	1,042	7,472.51	168
Takeover bid by dissident	0.19	0	0.39	198
CEO tenure (yrs.)	6.34	4	7.67	198
CEO is chairman	0.63	1	0.49	198
Dissident is activist	0.15	0	0.35	198
Firm size, assets ($M)	1,766.46	240.48	5,771.4	198
Institutional ownership (%)	34.37	28.72	26.47	197
Adjusted return, prior year (%)	-28.99	-27.80	41.69	190
Volatility, prior year (%)	53.31	44.01	30.24	190

Table 7: Proxy Contest Outcomes, Vote Recommendations, and Prediction

This table reports estimated marginal effects from multivariate probit regressions explaining proxy contest outcomes (1 = dissident win, 0 = incumbent management win) in terms of the direction of proxy advice and other explanatory variables. The sample consists of 198 proxy contests for board seats during 1992-2005 in which a recommendation was issued by Institutional Shareholder Services (ISS). The main explanatory variable of interest is REC^D, a binary variable equal to 1 if and only if the recommendation endorses at least one dissident director. Other independent variables include *Pre-FD period*, a dummy variable equal to 1 if a contest filing occurred before October 23, 2000; *Post-N-PX period*, a dummy variable equal to 1 if and only if a contest filing occurred after April 14, 2003; and *Filing-date abnormal return*, the cumulative abnormal return over days [-25,1] surrounding the first PREC14A or DEFC14A contest filing, calculated using a standard one-factor market model with the return on an equal-weighted CRSP index as the market return. All other independent variables are as described in Table 6. Each specification includes a contest-year time trend and dummy variables for 1-digit SIC industries that contain at least 10 firms in the sample. Z-statistics appear in parentheses below estimated marginal effects. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels.

Independent Variable	**(1)**	**(2)**	**(3)**	**(4)**
REC^D (1 = rec. for dissident)	0.141*	0.179**	0.213**	0.295***
	(1.89)	(2.17)	(2.16)	(2.75)
Ln(assets)	0.005	0.044*	0.036	-0.010
	(0.22)	(1.74)	(1.03)	(-0.22)
Ln(Dissident ownership)		0.144***	0.108*	0.084
		(3.12)	(1.86)	(1.31)
Ln(Management ownership)		-0.094**	-0.177***	-0.250***
		(-2.31)	(-3.21)	(-3.83)
Cumulative voting		0.427***	0.359**	0.427**
		(2.74)	(2.27)	(2.43)
Majority needed to elect		0.030	0.018	0.065
		(0.28)	(0.15)	(0.46)
Special meeting		0.244	0.230	0.255
		(1.52)	(1.08)	(1.05)
Written consent solicitation		0.321*	0.383**	0.436**
		(1.90)	(2.34)	(2.47)
Ln(Institutional ownership)				0.135**
				(2.10)
Ln(volatility)				1.503
				(0.41)
Ln(contest length)			0.002	0.002
			(1.24)	(1.40)
Ln(shareholders)			-0.018	-0.026
			(-0.44)	(-0.60)

(continued)

Table 7, Continued

Independent Variable	(1)	(2)	(3)	(4)
Dissident hires solicitor			0.248 (1.62)	0.306* (1.87)
Incumbent hires solicitor			-0.413** (-2.57)	-0.454*** (-2.76)
Activist dissident			-0.066 (-0.49)	-0.100 (-0.64)
Takeover bid by dissident			-0.060 (-0.48)	-0.103 (-0.74)
CEO = chairman			-0.244** (-2.37)	-0.330*** (-2.90)
Ln(CEO tenure)			0.214*** (2.99)	0.280*** (3.02)
Filing-date abnormal return				-0.074 (-0.29)
Adjusted return, prior year				0.198 (1.37)
Contest year	-0.017 (-0.64)	-0.005 (-0.15)	-0.044 (-1.22)	-0.030 (-0.79)
Pre-FD period	-0.140 (-1.12)	-0.162 (-1.17)	-0.327* (-1.95)	-0.228 (-1.21)
Post N-PX period	-0.021 (-0.18)	-0.113 (-0.89)	0.027 (0.19)	0.046 (0.31)
1-digit SIC dummies	**Yes**	**Yes**	**Yes**	**Yes**
Number of observations	198	197	168	160
Pseudo-R^2	0.081	0.181	0.291	0.370

Table 8: Testing for Certification

This table presents regression-based tests of the certification hypothesis for our sample of proxy vote recommendations issued by Institutional Shareholder Services. The sample consists of 172 vote recommendations issued during proxy contests for board seats occurring over the 1992-2005 period. The tests are based on two separate cross-sectional OLS regressions:

$$\text{I.} \quad PDIFF_i = \gamma_0 + \gamma_1 REC_i^D + \varepsilon_i$$

$$\text{II.} \quad PDIFF_i = \gamma_0 + \gamma_1 (\hat{\pi}_{A-1}^i \times REC_i^D) + \varepsilon_i .$$

In the regressions, REC_i^D is a binary variable equal to 1 if and only if the vote recommendation in contest i favors the dissident. The dependent variable, $PDIFF_i$, is constructed from observed stock prices and estimated probabilities as

$$PDIFF_i \equiv CAR^i_{[REC-7,REC+1]} - \left(\frac{\hat{\pi}_A^i - \hat{\pi}_{A-1}^i}{\pi_C^i - \hat{\pi}_A^i} \right) \times \left(\frac{P^i_{REC+1}}{P^i_{REC-8}} \right) \times CAR^i_{[REC+2,OUTCOME+1]}$$

where $CAR^i_{[REC-7,REC+1]}$ and $CAR^i_{[REC+2,OUTCOME+1]}$ are cumulative abnormal returns over the indicated event windows surrounding the recommendation announcement date and contest resolution date, respectively; P^i_{REC+1} and P^i_{REC-8} are daily closing prices 1 day after and 8 days before the recommendation announcement date, respectively; π_C^i is a binary variable equal to 1 if and only if the dissident wins the contest; and $\hat{\pi}_A^i$ and $\hat{\pi}_{A-1}^i$ are fitted probabilities of dissident victory derived from logit regressions (similar to specification (2) in Table 7) that include and exclude, respectively, REC_i^D as an explanatory variable. To ensure the abnormal return event windows are well-defined and non-overlapping, only contests in which there are at least three trading days between the recommendation date and the resolution date are included. Numbers in parentheses are heteroskedasticity-robust standard errors derived from first obtaining fitted probabilities $\hat{\pi}_A^i$ and $\hat{\pi}_{A-1}^i$ from logit regressions and then using OLS to estimate regression I (or regression II). Numbers in square brackets are standard errors obtained from using Generalized Method of Moments (GMM) to estimate regression I (or regression II) along with the two logit regressions as a just-identified system of simultaneous equations (see Appendix for details). ***, **, and * denote coefficient estimates significantly different from zero (two-sided) at the 1%, 5%, and 10% levels, respectively.

Variable	Model 1	Model 2
Intercept	-0.002 (0.010) [0.013]	-0.003 (0.010) [0.019]
REC_i^D	0.041 (0.020)** [0.024]*	
$\hat{\pi}_{A-1}^i \times REC_i^D$		0.082 (0.034)** [0.041]**
Observations	172	172
R^2	0.027	0.036

Table 9
Additional Tests for Certification

This table presents additional tests of the certification hypothesis for our sample of proxy vote recommendations issued by Institutional Shareholder Services (ISS). The sample consists of 172 vote recommendations issued during proxy contests for board seats during 1992-2005. The tests are based on the model, outlined in the text, that relates innovations in perceived dissident and management quality to the underlying parameters δ^D, δ^M, μ^D, μ^M and to the direction of the ISS recommendation. The model is estimated using cross-sectional regressions of the following form:

$$\begin{aligned} PDIFF_i = {} & \mu_M + (\delta^M - \mu^M)\hat{\pi}^i_{A-1} \\ & + (\mu^D - \mu^M)REC^i_D \\ & + (\delta^D - \delta^M - \mu^D + \mu^M)(\hat{\pi}^i_{A-1} \times REC^D_i) + \varepsilon_i . \end{aligned}$$

In the regressions, REC^D_i is a binary variable equal to 1 if and only if the vote recommendation in contest i favors the dissident. The dependent variable, $PDIFF_i$, is constructed from observed stock prices and estimated probabilities as

$$PDIFF_i \equiv CAR^i_{[REC-7,REC+1]} - \left(\frac{\hat{\pi}^i_A - \hat{\pi}^i_{A-1}}{\pi^i_C - \hat{\pi}^i_A}\right) \times \left(\frac{P^i_{REC+1}}{P^i_{REC-8}}\right) \times CAR^i_{[REC+2,OUTCOME+1]}$$

where $CAR^i_{[REC-7,REC+1]}$ and $CAR^i_{[REC+2,OUTCOME+1]}$ are cumulative abnormal returns over the indicated event windows surrounding the recommendation announcement date and contest resolution date, respectively; P^i_{REC+1} and P^i_{REC-8} are daily closing prices 1 day after and 8 days before the recommendation announcement date, respectively; π^i_C is a binary variable equal to 1 if and only if the dissident wins the contest; and $\hat{\pi}^i_A$ and $\hat{\pi}^i_{A-1}$ are fitted probabilities of dissident victory derived from logit regressions (similar to Specification (2) in Table 7) that include and exclude, respectively, REC^D_i as an explanatory variable. To ensure the abnormal return event windows are well-defined and non-overlapping, only contests in which there are at least three trading days between the recommendation date and the resolution date are included. Three versions of the model are estimated: the unrestricted model, a restricted model with $\mu^D = \mu^M$ (no "management certification"), and a restricted model with $\delta^D = \delta^M$ (no "dissident certification"). Panel A reports regression diagnostics, parameter estimates, and standard errors associated with each parameter estimate. Numbers in parentheses are heteroskedasticity-robust standard errors derived from first obtaining fitted probabilities $\hat{\pi}^i_A$ and $\hat{\pi}^i_{A-1}$ from logit regressions and then using OLS to estimate the cross-sectional regression for $PDIFF_i$. Numbers in square brackets are GMM standard errors obtained from estimating the regression for $PDIFF_i$ and the logit regressions for π^i_A and π^i_{A-1} as a just-identified system of simultaneous equations (see Appendix for details). ***, **, and * denote parameter estimates significantly different from zero at the 1%, 5%, and 10% levels, respectively. Panel B reports, for each model and each estimation approach, p-values associated with two-sided Wald hypothesis tests.

Table 9, Continued

Panel A

	Unrestricted Model	Restricted Model ($\mu^D = \mu^M$)	Restricted Model ($\delta^D = \delta^M$)
Regressions:			
R^2	0.053	0.045	0.009
Standard error	0.121	0.122	0.124
# of observations	172	172	172
Certification Parameters:			
δ^D	0.084 (0.038)** [0.058]	0.059 (0.034)* [0.050]	0.007 (0.023) [0.039]
δ^M	-0.056 (0.027)** [0.044]	-0.036 (0.022) [0.036]	0.007 (0.023) [0.039]
μ^D	-0.010 (0.035) [0.056]	0.027 (0.025) [0.043]	0.051 (0.032) [0.052]
μ^M	0.055 (0.035) [0.057]	0.027 (0.025) [0.043]	0.007 (0.031) [0.056]

Panel B

	Unrestricted Model		Restricted Model ($\mu^D = \mu^M$)		Restricted Model ($\delta^D = \delta^M$)	
	OLS	GMM	OLS	GMM	OLS	GMM
Hypothesis Tests:						
Dissident Certification						
H_0: $\delta^D = \delta^M$; H_1: $\delta^D \neq \delta^M$	0.003	0.045	0.007	0.024	--	--
Management Certification						
H_0: $\mu^D = \mu^M$; H_1: $\mu^D \neq \mu^M$	0.186	0.379	--	--	0.246	0.505
Differential Certification						
H_0: $\delta^D - \mu^D = \delta^M - \mu^M$ H_1: $\delta^D - \mu^D \neq \delta^M - \mu^M$	0.019	0.128	--	--	--	--

APPENDIX

We provide a brief outline of our approach to estimating Model 1 of Table 8 via GMM; the other models in Section 6.2 are estimated with GMM in a similar fashion. Under the assumptions of the model, the following three equations hold for a given contest:

$$\pi_A \equiv \Pr(\pi_C = 1 \mid X, REC^D) = \frac{e^{X'\alpha+\alpha_{K+1}REC^D}}{1+e^{X'\alpha+\alpha_{K+1}REC^D}} \tag{A1}$$

$$\pi_{A-1} \equiv \Pr(\pi_C = 1 \mid X) = \frac{e^{X'\beta}}{1+e^{X'\beta}}$$

$$PDIFF = \gamma_0 + \gamma_1 REC^D + \varepsilon$$

where $PDIFF \equiv CAR_{[REC-7,REC+1]} - ((\pi_A - \pi_{A-1})/(\pi_C - \pi_A)) \times (P_{REC+1}/P_{REC-8}) \times CAR_{[REC+2,OUTCOME+1]}$, X is a $K \times 1$ vector of explanatory variables, α_{K+1} is a coefficient, and α and β are $K \times 1$ vectors of coefficients.

By our assumptions in the text, each explanatory variable in system (A1) is orthogonal to the residual for its corresponding equation. Thus, letting w denote the vector of all observables and letting θ denote the coefficient vector comprising $\alpha, \alpha_{K+1}, \beta, \gamma_0$, and γ_1, we have $2K+3$ moment restrictions given by $E[h(w,\theta)] = 0$, where

$$h(w,\theta) \equiv \begin{bmatrix} \left(\pi_C - \dfrac{e^{X'\alpha+\alpha_{K+1}REC^D}}{1+e^{X'\alpha+\alpha_{K+1}REC^D}}\right)X \\ \left(\pi_C - \dfrac{e^{X'\alpha+\alpha_{K+1}REC^D}}{1+e^{X'\alpha+\alpha_{K+1}REC^D}}\right)REC^D \\ \left(\pi_C - \dfrac{e^{X'\beta}}{1+e^{X'\beta}}\right)X \\ (PDIFF - \gamma_0 - \gamma_1 REC^D) \\ (PDIFF - \gamma_0 - \gamma_1 REC^D)\, REC^D \end{bmatrix}. \tag{A2}$$

Since we have $2K+3$ parameters, the system is just-identified, implying a unique solution $\hat{\theta}$ to the sample moments (note that $\hat{\theta}$ will coincide with equation-by-equation estimation of the system). A consistent variance estimate for this just-identified system is $\hat{V} = N^{-1}G^{-1}S(G')^{-1}$ where

$$G = \frac{1}{N}\sum_{i=1}^{N} \left.\frac{\partial h_i(w_i,\theta)}{\partial \theta'}\right|_{\hat{\theta}} \tag{A3}$$

and where

$$S = \frac{1}{N}\sum_{i=1}^{N} h_i(w_i,\hat{\theta}) h_i(w_i,\hat{\theta})'. \tag{A4}$$