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Lucky Directors

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While prior work has focused on the opportunistic timing of executives' grants, we provide in this paper evidence that outside directors' option grants have also been favorably timed to an extent that cannot be fully explained by sheer luck. Examining events in which public firms granted options to outside directors during 1996-2005, we find that 9% of director grant events were "lucky grant events" falling on days with a stock price equal to a monthly low. We estimate that about 800 lucky grant events owed their status to opportunistic timing, and that about 460 firms and 1400 outside directors were associated with grant events produced by such timing. Director grant events were preceded by negative abnormal returns and followed by positive abnormal returns. There is evidence that the opportunistic timing of director grant events has been to a substantial extent the product of backdating and not merely spring-loading based on private information. We find that directors' luck has been correlated with executives' luck. We also find that director grant events were more likely to be lucky when the potential gains from such luck were larger, when the firm had more entrenching provisions protecting insiders from the risk of removal, and when the board did not have a majority of independent directors.

Key words: Executive compensation, corporate governance, stock options, backdating, spring loading, inside information, CEO, independent directors, outside directors, entrenchment.
JEL Classification: D23, G32, G38, J33, J44, K22, M14.

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I. INTRODUCTION

The opportunistic timing of executive stock option grants -- via backdating, spring-loading based on the use of private information, or otherwise – has been the subject of significant empirical work and a great deal of public attention. But it has not been thus far recognized that grants awarded to outside directors have also been opportunistically timed. This paper shows that opportunistic timing problems have not been limited to executives' grants, as has been thus far assumed, but rather have also affected outside directors' grants. The paper investigates the link between executives' and directors' luck, and it identifies governance and other factors associated with opportunistic timing of director grants. Our findings contribute to understanding the scope of opportunistic timing practices and are relevant for attempts to understand their underlying causes. More generally, by highlighting the potential existence and determinants of agency problems between directors and shareholders, our analysis contributes to assessing outside directors' role and identifying governance arrangements that could improve directors' performance.

Financial economists' empirical work is widely regarded as responsible for drawing attention to the abnormal returns accompanying executives' option grants. More recently, the realization that many executive grants have been backdated has led to a wave of corporate scandals. The Senate Banking and Finance committees held hearings on the subject, and the SEC and a small army of private law firms hired by companies are investigating past grant practices. More than 120 companies have come under scrutiny as of this writing. Dozens of executives have been forced to resign, and dozens of companies announced that they will have to restate their past financial statements.[1]

[1] The Wall Street Journal (WSJ) maintains an "Options Scorecard" at www.wsj.com with an updated list of all the companies that have come under scrutiny in connection with backdating issues, and it counted more than 120 such companies as of this writing. For an account of the large scale of investigations of past grants conducted by companies with the help of hired outside professionals, see James Bandler and Kara Scannell, "In Options Probes, Private Law Firms Play Crucial Role", Wall Street Journal, October 28, 2006.

The alleged backdating of executives' grants has raised questions regarding the role, if any, played by outside directors. In his opening statement at the Senate Finance hearing on backdating, Chairman Grassley expressed concerns that "boards of directors were either asleep at the switch, or in some cases, willing accomplices themselves." [2] In the view of Chairman Grassley, as in that of others who focused on the opportunistic timing of executive options, there were two possible scenarios that could raise concerns: first, the "asleep at the switch" scenario of directors not knowing about the opportunistic timing of executives' grants, which raises the question of whether directors should have commonly been expected to notice such practices;[3] second, the "accomplice" scenario of outside directors knowing but electing to go along with the opportunistic timing of executives' grants, which raises questions about the directors' incentives and the adequacy of their performance as guardians of shareholder interests. Thus far, evidence that directors knew about the backdating of executives' grants has surfaced only in a few cases.[4]

With attention focused on what role, if any, was played by directors in the opportunistic timing of grants awarded to executives, little attention was paid to the grants awarded to outside directors themselves. Practitioners with whom we discussed the subject told us that in their view, director grants have been unlikely targets for opportunistic timing because many of them coincide with the annual meeting and because the monetary stakes are substantially smaller than in executives' grants. Also, some of the possible reasons given by observers for the backdating of executives' options – such as a desire to provide executives with non-performance pay that is not subject to the limitations on tax deductibility of Section 162(m) of the Tax Code – are not applicable to outside directors' grants.[5] Whether for these reasons or others, little systematic attention has thus far been paid to the timing of outside directors' grants.[6]

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[2] Opening Statement of Sen. Chuck Grassley, Chairman, Finance Committee Hearing, "Executive Compensation: Backdating to the Future", Sept. 6, 2006, available at http://www.senate.gov/~finance/.

[3] Some observers believe that directors should not have been generally expected to know about the existence of opportunistic timing practices. See, e.g., Martin Lipton, Deconstructing American Business II (Nov. 1, 2006) (expressing concern that business might be hurt by backdating investigations leading to criticism "not only of those at fault but all directors of the companies involved").

[4] According to the WSJ's options scorecard, among the more than 120 companies coming under scrutiny thus far and among the dozens of corporate officials forced to depart, outside directors departed or were alleged to have been directly involved only in a small number of cases, including United Health, Brooks Automation, and Mercury Interactive.

[5] This possibility was raised, for example, by WSJ columnist Holman Jenkins Jr. and by a WSJ editorial. See Jenkins, "Business World: The 'Backdating' Witch hunt," Wall Street Journal, June 21, 2006;

In this paper we provide evidence that opportunistic timing has not been limited to executives' grants but rather has been present in outside directors' grants as well. This evidence helps to gain a fuller understanding of the scope of opportunistic timing practices. It is also relevant for any attempt to understand fully the causes of such practices, and the role, if any, played by outside directors in connection with these practices.

Our findings could also have relevance beyond the grant timing context. Outside directors play a key role in the structure of public companies with dispersed ownership and are counted on to reduce executives' agency problems by monitoring, supervising, and setting executives' compensation. Increased reliance on outside directors has been advocated by many financial economists and legal scholars, and increasing the power and role of independent directors was a key element of the 2003 changes in stock exchange listing requirements. Our work highlights the possibility that agency costs might arise between outside directors and shareholders, and not only between executives and boards serving as shareholders' guardians. Furthermore, our findings that certain governance arrangements have been correlated with opportunistic timing are relevant for identifying the conditions under which outside directors can perform their critical role better.

The universe of director grants we study contains all the grants given to directors of the about 6,000 public companies in the Thompson database during the decade of 1996-2005. Among about 29,000 grant events during this period, about 9% were "lucky events" – defined as events taking place on days with the lowest stock price level of the month. When we exclude events taking place at the time of the annual meeting (information about which we have for only some of the companies), the percentage of grant events that were lucky naturally goes up.

Interestingly, we find a clear monotonic relation between how a trading day ranked within the price distribution of the month and the likelihood that the day happened to be selected

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"Backdating to the Future," October 12, 2006. The possibility that backdating has been partly driven by section 162(m) of the Tax Code, which limited to $1 million the deduction that companies may take for the nonperformance compensation paid to any given executive, was one of the reasons leading the Senate Finance Committee to schedule hearings on backdating and the tax treatment of executive pay.

[6] We are aware of two companies -- Brooks Automation and Monster – where the company or the media reported about allegedly manipulated grants given to outside directors. See Charles Forelle and James Bandler, "Brooks Automation Cites 'False' Options Document," Wall Street Journal, August 1, 2006; Charles Forelle and Mark Maremont, "Monster Worldwide Gave Officials Options Ahead of Share Run-Ups," Wall Street Journal, June 12, 2006. But we are unaware of any suggestion in the media or otherwise that there has been a significant incidence of opportunistic timing among director grants.

for a grant event. A day was most likely to be chosen for a grant event if its stock price was at the lowest level, second most likely to be chosen if its price was at the second-lowest level, and third most likely to be chosen if its price was at the third-lowest level. The abnormal concentration of grant events is most pronounced at the lowest price of the month: that is, in the form of lucky grants. While our focus is on how the stock price of grant event days ranked within the price distribution of the month, we also confirm the existence of abnormal patterns by showing that grant event days are preceded by negative abnormal stock returns and followed by positive abnormal stock returns.

We estimate that about 800 lucky grant events owed their status to opportunistic timing rather than to mere luck. This opportunistic timing was spread over a significant number of firms. We estimate that about 460 firms (about 7% of all firms) were involved in opportunistically timed lucky events. Opportunistic timing of director grants has been more common before the adoption of the Sarbanes-Oxley Act (SOX) but continued after the adoption of SOX.

The opportunistic timing of directors' grants, we find, has not been limited to new economy firms or any other particular sector. Such practices appear to have been present in each of the economy's twelve industries (using the Fama-French classification) except for the utilities sector (in which director grants are infrequent).

As far as executives' grants are concerned, opportunistic timing based on spring-loading is often viewed as raising less severe concerns than timing based on backdating. It is far from clear, however, that those who view spring-loading of executives’ grants as acceptable would have the same attitude to directors’ grants. In any event, our analysis indicates that backdating, and not merely "spring-loading" based on the use of inside information, has been a major driver of the higher-than-random incidence of lucky events benefiting outside directors. Spring-loading is unlikely to enable differentiating between two stock prices that are very close to one another. We find, however, that a day with the lowest price of the month was substantially more likely to be selected for a grant event than a day with the second lowest level even when the difference between the two price levels is less than one percent. Of course, if the date of a grant event is set when the whole distribution of stock prices is known, one could choose to take advantage even of such small differences in prices.

Furthermore, spring-loading, which is based on information possessed by insiders at the time the grant is awarded, does not depend on the ability to delay reporting the grant. However, we find that directors' grant events were significantly less likely to be lucky when they were reported in the month of the grant instead of in the following months. In addition, grant events after SOX, which imposed a two-day reporting requirement that most companies followed, were less likely to be lucky. Finally, we also find that a day with a low stock price was more likely to be chosen as a grant event even when the dip in stock price had to do with market-wide movements rather than firm-specific ones. This significance of market-wide movements is consistent with backdating but difficult to reconcile with the spring-loading hypothesis.

We then turn to examine the characteristics of firms, grant circumstances, and governance arrangements that were correlated with lucky grant events. We find that lucky grant events were more likely when the potential payoffs from opportunistic timing are relatively higher. Indeed, not only were lucky grant events more common in companies with a volatile stock price but also, for a given company with more than one grant event, the likelihood of an individual grant event being lucky increased when the gap between the lowest and the median price of the month of the grant event was higher.

We identify a link between directors' and executives' luck. Although director grant events not coinciding with grants to executives were more often lucky than mere luck would predict, director grant events were more likely to be lucky when they did overlap with grants to executives of the firm, especially when they coincided with grants to the CEO. Furthermore, even events that did not overlap with grants to the CEO (or other executives) were more likely to be lucky when the CEO did receive a lucky grant in the current or preceding year.

We also find that the occurrence of lucky grants was correlated with governance factors. In particular, grant events have been more likely to be lucky when the company had more entrenching provisions (weaker shareholder rights) protecting insiders from the risk of removal. Furthermore, grant events have been more likely to be lucky when the board did not have a majority of independent directors.

We further find that directors' luck has been persistent. Controlling for the various variables identified as being correlated with lucky grant events, we find that events were more likely to be lucky when the firm's preceding grant event was lucky as well. This result indicates

that, in addition to these variables, there might well be other firm and director characteristics that made opportunistic timing more likely.

Finally, while we focus on grant events that were favorably timed within a one-month period, we also explore possible opportunistic timing within longer periods. We find that there is an abnormally high incidence of super-lucky grant events – ones that took place on days with a stock price equal to the lowest in the calendar quarter or even the calendar year. 10% of grant events (11.7% before SOX) took place at one of the lowest three prices of the quarter, with 3.8% (4.6% before SOX) at a quarterly low. 2.8% of grant events (3.4% before SOX) took place at one of the three lowest prices of the year.

Our work is related to several bodies of literature. To begin, it naturally relates to the literature on the opportunistic timing of executives' option grants – the seminal work by Yermack (1997), the subsequent work by Aboody and Kasznik (2000) and Chauvin and Shenoy (2001) and, beginning with the celebrated paper by Lie (2005), the more recent literature on opportunistic timing via backdating (e.g., Heron and Lie (2006a, b), Narayanan and Seyhun (2006a, b), Collins, Gong, and Li (2005), Bebchuk, Grinstein, and Peyer (2006)). This body of work focuses on option awards to executives, and, to the extent that it considered directors at all, it does so in connection with investigating why and when executives' grants were opportunistically timed.[7] In contrast, our focus is on grants to directors.

In addition, our results on the association between lucky grant events and lack of majority of independent directors on the board contribute to the literature on the effects board independence. While empirical work has yielded mixed results regarding the relationship between the board independence and firm value in general (see Bhagat and Black, (1999), (2002) and Chhaochharia and Grinstein (2006a)), board independence has been shown to have a

[7] Yermack (1997) discusses possible reasons why boards might have agreed to grant option to executives at points in time followed by stock price increases. Heron and Lie (2006b) consider whether executives' grants are more likely to be backdated when outside directors also get a grant at the same time but do not find such a connection. Bebchuk, Grinstein, and Peyer (2006) show that CEOs are more likely to get grants at monthly lows when the board does not have a majority of independent directors. Bizjak, Lemmon, and Whitby (2006) report that executives are more likely to receive opportunistically timed grants when the firm's directors serve on the board of another company that was earlier involved in opportunistic timing of executive grants.

significant impact on certain specific areas of corporate behavior.[8] Similarly, by showing that lucky grants are correlated with high entrenchment levels, our study contributes to (and is consistent with) the studies finding that entrenchment and weak shareholder rights are associated with lower firm value as well as sub-optimal decisions on certain issues (see, e.g., Gompers, Ishii, and Metrick (2003), Bebchuk, Cohen, and Ferrell (2004), and Masulis, Wang, and Xie (2006)).

More generally, our analysis contributes to the general literature on the role of boards and outside directors. Some financial economists and legal scholars have long advocated increased reliance on outside directors who would suffer less from agency problems and could be expected to carry out well the board's oversight and supervisory role (see, e.g., Jensen (1993), Milstein and MacAvoy (1998)). As noted earlier, our results are relevant for understanding possible imperfections and agency costs of outside directors as well as identifying the arrangements and circumstances that can be expected to make them perform best.

Before proceeding, we would like to note some limits on the scope of our analysis and the inferences that can be drawn from it. Because our analysis focuses on how director grant events ranked within the price distribution of the month in which the grant event took place, our analysis is not designed to and cannot capture fully instances of backdating based on small look-back periods. Narayanan and Seyhun (2006b) show that, during the post-SOX period, there have been likely many instances in which executives' grants were mis-dated by just a few days, often by just one or two days. Thus, although our analysis focuses on the instances of opportunistic timing that likely produced the greatest relative increase in grants' value, it does not cover all instances of opportunistic timing, and the estimates we provide for the incidence of opportunistic timing resulting in lucky grant events likely under-state the full incidence of opportunistic timing of director events.

Furthermore, we wish to stress that or analysis does not show what role, if any, outside directors played in the opportunistic timing of their own grants. As has been the case with the earlier empirical findings concerning the opportunistic timing of executives' options, showing that such timing occurred does not establish who was responsible for it, who knew about it, and

[8] See Byrd and Hickman (1992), Shivdasani (1993), Brickley, Coles, and Terry (1994), Cotter, Shivdasani, and Zenner (1997), Dann, Del Guercio, and Partch (2003), Gillette, Noe, and Rebello (2003), Weisbach (1987), Core, Holthausen, and Larcker (1999), Chhaochharia and Grinstein (2006b), Beasely (1996, 2000), and Dechow, Sloan and Sweeny (1996).

what their state of mind was.[9] Furthermore, we wish to emphasize that, as is the case with CEO grants due to opportunistic timing, most director grants have not been opportunistically timed, and most firms and directors have not been associated with such opportunistic timing.

The remainder of our analysis is organized as follows. Section II describes our data and provides summary statistics. Section III examines the extent to which the incidence of lucky grant events has been affected by opportunistic timing, as well as the extent to which such opportunistic timing has partly resulted from backdating rather than the use of private information. Section IV investigates the relation between lucky grant events and firm characteristics, governance arrangements, and grant circumstances. Section V concludes.

II. Data and Summary Statistics

A. The Data

We construct our dataset from Thomson Financial's insider trading database, which includes all insiders' filings of equity transactions in forms 3, 4, 5, and 144 between the years 1996-2006. Following Heron and Lie (2006a, b) and Narayanan and Seyhun (2006b), we include in our dataset observations with a cleanse indicator of R ("data verified through the cleansing process"), H ("cleansed with a very high level of confidence"), or C ("a record added to nonderivative table or derivative table in order to correspond with a record on the opposing table"). We restrict our sample to grants to directors and to transactions that occurred before 12/31/2005 (so that data about stock prices during the grant month is available in the 2005 CRSP database). We further require stock returns to be available for the entire month of the grant date.

Because we focus on conventional at-the-money options, as does the literature on the opportunistic timing of executives' option grants, we check whether the strike price of the grant is close enough to the closing price of the grant date, or to the closing price of a day before or a day after the grant. A close enough price is defined as a price that is within 1% of the strike

[9] Also, while our analysis can provide estimates concerning the aggregate number of lucky grants due to opportunistic timing, it cannot and does not attempt to establish whether any given lucky grant event owed its status to such timing. We therefore avoid mentioning in this paper any individual companies or outside directors associated with lucky grant events.

price. The date with the closest closing price to the strike price is then defined as the effective grant date.[10]

Unlike other work on backdating, our focus is on grants to outside directors. The Thomson dataset allows grant recipient to report up to four different "roles" in the company. We admit into our sample only grants to individuals who identify themselves as directors (rolecode D) and do not identify themselves as having any other role in the company. To be conservative, we do not include grants to individuals that identify themselves as chair or vice-chair of the board.[11]

Our sample consists of 92,253 grants to 32,139 different directors. Directors of the same company often receive their grants on the same day. We therefore define our unit of observation as a *grant event*, which is a day in which one or more directors received option grants. Our sample consists of 28,764 director grant events. The average number of directors getting a grant in an event is 3.21. Our sample has 6,577 firms, consistent with the fact that many firms have two or more grant events.

B. Summary Statistics

In investigating the existence of abnormal patterns that could reflect opportunistic timing, we focus on how the stock price of grant dates ranked within the price distribution of the calendar month of the grant.[12] This inquiry focuses, as it were, on investigating backdating

[10] Consistent with Heron and Lie (2006a), we are also able to allocate the strike prices of about half of the grants in the sample. Heron and Lie discuss in detail the possible reasons for deviation from the strike price. We also eliminate grants that were given in months where the firm had an ex-dividend date; to the extent that firms schedule grants after an ex-dividend date, the grant price might fall below the stock prices preceding the ex-dividend date even in the absence of any backdating or spring-loading.

[11] As a check on the quality of our selection procedure, we use the subsample of grants (about a quarter of the grants in our sample) provided by firms for which data is available on the IRRC database. Of those grants which we classify as being given to outside directors using our selection procedure, only 0.74% are classified as being given to insiders using the IRRC classification. We further test whether the inclusion of a small number of potentially mis-classified directors has an effect on our results. For the sample of IRRC firms, we study whether any of our results are affected by the use of the Thomson information or the IRRC information to select the sample of outside director grants. We find that both methods yield practically the same results throughout.

[12] For a general discussion of this methodology, see Bebchuk, Grinstein, and Peyer (2006).

instances in which the "look-back" period spanned a calendar month.[13] Our interest is in how grant date prices ranked within the price distribution of the calendar month relative to a benchmark case in which the grant date is chosen without regard to the price distribution.[14]

Table 1 shows the distribution of price-ranks for all the grant events in our sample. As the last two columns of the table indicate, there were more grants below than above the median price of the grant month. While 43.2% of the grant events have a strike price exceeding the median stock price of the month, 49.6% of the grant events have a strike price below the median: a difference of 6.4%. The distribution remains asymmetric, but to a lesser extent, in the period after the adoption of SOX.

Table 1 and Figure 1 also provide statistics about the percentage of grant events at precise price-ranks at the bottom and the top of the price distribution. As both the table and the figure make clear, there is a monotonic relation between the rank of the price in a month and the percentage of grant events falling in that rank. For the full sample, the frequency of grant events is highest at the lowest price of the month (9.0%), second-highest at the second-lowest price of the month (7.6%), third-highest at the third-lowest price level (7.5%), and so forth. Conversely, the frequency of grants is lowest at the highest price level (5.9%), second-lowest at the second-highest level (6.2%), and so forth. The difference between low- and high price-ranks is most pronounced during the pre-SOX period in which the percentage of lucky grant events at monthly lows was 10.2%. But low price-ranks remain more common than high price-ranks during the post-SOX period.

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[13] Later in the paper we examine briefly favorable timing within longer periods of a calendar quarter and a full calendar year.

[14] Although we refer to the benchmark as one of "random selection" of grant dates, this is not meant to involve a strictly random assignment but rather one in which grant dates are selected on the basis of factors that are independent of price-rank considerations. It might be suggested that, to the extent that (i) there are some considerations that lead firms to concentrate director grant events in earlier parts of the month and (ii) stock prices trend upward over time, the benchmark probability should be adjusted upwards. However, the actual distribution of director grant events is quite symmetric around the middle of the month; director grant events take place on average on day 15.96 of the month, and roughly the same number of director grant events occur before and after the median trading day of the month. And because the drift of stock prices is low relative to their variance, prices in the beginning and end of a month do not significantly differ in their odds of being the lowest price of the month. To be cautious, however, we conduct throughout our analysis robustness checks and verify that our results hold when controlling for the location of the director grant event within the calendar month (see footnotes 15 and 19 for details).

Some firms provide grants to directors on the date of the annual shareholder meeting. These grants are scheduled in advance, and they thus cannot be expected to be the product of opportunistic timing. The Investor Responsibility Research Center (IRRC) database provides information on the annual meeting dates for a subset (about 25%) of the firms in our sample, and using it we are able to identify 2,555 grant events (about 9% of the total) that fell within +/- one day of the annual meeting. Panel B of Table 1 displays the distribution of the price ranks of these grant events. As we expected, panel B shows that, for grant events scheduled to coincide with the annual meeting, there are no significant differences between the fraction of grant events below and above the median of the grant month, as well as between the frequencies of low- and high-price ranks. The percentage of grant events at monthly lows is 4.4%, and the percentage of grant events at the highest price of the month is 4.4% as well. This symmetry characterizes both the pre-SOX and the post-SOX period.

Panel C of Table 1 displays the distribution of price ranks after excluding the grant events we are able to identify as scheduled to coincide with the annual meeting. The asymmetric pattern in this panel is more pronounced than the asymmetric pattern in the distribution of the whole sample. The frequency of grant events that are lucky increases to 10.9% for the pre-SOX period and to 9.4% for the whole period.

Note that because our dataset enables us to identify grants scheduled at the annual meeting only for a subset of the firms, the sample in Panel C is still likely to contain a significant number of grant events coinciding with annual meeting dates. To explore this further, we take advantage of the fact that, among the IRRC firms for which we have data about the annual meeting date, over two-thirds hold their annual meetings in April or May. Panel D of Table 1 shows the distribution for the subsample where we do not have annual meeting dates and we exclude grant events in the months of April and May. The frequency of lucky grant events increases further to 12.0% for the pre-SOX period and to 10.1% for the overall period. Because this procedure also throws out some grant events that do not coincide with an annual meeting we do not use it going forward. However, it shows that, after excluding grant events on the annual meeting day (+/- 1 day), our sample still contains some events coinciding with the annual meeting which likely leads to an understatement of the frequency of lucky grant events among unscheduled events.

Our sample contains many directors who received more than one grant, as well as many firms that have more than one grant event. Thus, one might wonder whether the grant events producing the asymmetry displayed in Table 1 are ones involving a relatively small number of directors and firms. To get a sense whether this is the case, Table 2 displays statistics about the distribution of grant prices across directors and firms.

Table 2, panel A shows that 19.5% of the directors (6,267 directors) participated in one or more lucky grant events at a monthly low, but only 14.9% (4,789 directors) participated in one or more grant events at the highest price of the month. Similarly, while 33.2% of directors (10,670 directors) participated in one or more grant events at one of the two-lowest prices of the month, only 27.1% of directors (8,710 directors) participated in one or more grant events at one of the two-highest prices of the month. These figures indicate that the asymmetry between low and high price-ranks is not driven by a small number of directors.

Table 2, panel B shows that the asymmetry between low and high price-ranks is also not due to a small number of firms producing among them a large number of lucky grants. While 29.3% of firms (1,927 firms) had one or more lucky grant events at monthly lows, only 20.9% of firms (1,375 firms) had one or more events at the highest price of the month. Similarly, while 46.5% of firms (3,058 firms) had one or more grant events at one of the two-lowest prices of the month, only 36.9% of the firms (2,427 firms) had one or more grant events at one of the two-highest prices of the month.

III. Directors' Luck

A. Mere Luck?

To evaluate whether and to what extent the selection of days to serve as grant event dates deviates from random, we run the following logit regression over all the days in each of the months in which a grant event was reported to have taken place:

$$\text{Is_Grant}_{it} = a0 + a1 * \text{Dummy_Three_lowest_prices}_{it} + e_{it} \qquad (1)$$

where Is_Grant_{it} is a dummy variable that equals one if at date *t* firm *i* granted options to at least some of its directors and zero otherwise. $\text{Dummy_Three_lowest_prices}_{it}$ is a dummy

variable that equals one if the price at date *t* was one of the three lowest prices of the month and zero otherwise. We cluster the errors by firms. The clustering corrects for correlations in the error terms $\{e_{it}\}$ across grant events by the same company. Table 3, column 1 shows the results of the logit regression (1). The coefficient of the $\text{Dummy_Three_lowest_prices}_{it}$ variable is 0.290. The coefficient is statistically different from zero at the 1% level.

Thus, for any given trading day during the grant month, having a stock price that is one of the three lowest prices of the month makes that day more likely to be selected as a grant event date. In a logit regression, the coefficients are the log of the odds that a date will be chosen as a grant date. Relative to the default of a day that is not among the three lowest, a day with a price among the three lowest prices of the month will have odds that are exp(0.290) = 1.34 times larger (that is, 34% higher) to be selected as a grant event date.

Column 2 of Table 3 shows the results when we exclude the 2,555 grant events we were able to identify as falling within +/- one day of the annual meeting. The coefficient of interest increases to 0.319, which indicates that, relative to the default of a day that is not among the three lowest prices of the month, a day with a price among the three lowest prices will have odds that are exp (0.319) = 1.37 times larger.

Because SOX required reporting option grants within two days after the grant is given, backdating is expected to be less common after SOX. There is indeed evidence that the passage of SOX reduced the incidence of opportunistic timing of CEO grants (see, e.g., Heron and Lie (2006a), Narayanan and Seyhun (2006a)) and, in particular, the incidence of CEO grants placed at monthly lows by opportunistic timing (Bebchuk, Grinstein, and Peyer (2006)). However, as Heron and Lie (2006a) and Narayanan and Seyhun (2006b) show, more than 20% of the companies did not comply with the two-day filing requirement during the post-SOX period, and backdating was thus still possible in the after-SOX period. To take the difference between the pre- and post-SOX periods into account, we re-run regression (1) interacting the explanatory variables with dummies for whether the grant was given before SOX or after SOX.

We present the results in column 3 of Table 3. The coefficient of the $\text{Dummy_Three_lowest_prices}_{it}$ variable is 0.308 for the pre-SOX period and 0.253 for the post-SOX period. Again, both coefficients are statistically significantly different from zero at the 1% level. Thus, the results indicate that SOX did not bring an end to the higher-than-random selection of days at the bottom of the distribution. A test of a difference between the two

coefficients, however, indicates that the pre-SOX coefficient is higher (with 1% significance) than the post-SOX coefficient. This result is consistent with SOX reducing the incidences of opportunistic timing. Again, when we exclude grant events coinciding with the annual meeting, the coefficients become somewhat larger (column 4).[15]

B. The Monotonic Relation between Price Rank and Likelihood of Granting Options

Having thus far lumped together the three lowest price levels, we now explore how the likelihood of a grant event is related to the precise ranking of that grant event within the price distribution of the month. Specifically, we run the following regression:

$$\text{Is_Grant}_{it} = a0 + a1 * \text{Dummy_lowest_price}_{it} + a2 * \text{Dummy_2}^{nd}\ \text{lowest_price}_{it} + \ldots + a5 * \text{Dummy_5}^{th}\ \text{lowest_price}_{it} + e_{it} \quad (2)$$

We again cluster the errors by firms. The clustering corrects for correlations in the error terms $\{e_{it}\}$ across grant events by the same company. We present the results in Table 4.

The results in column 1 of Table 4 show a monotonic relation between the likelihood of a grant event falling on a particular date and the rank of the stock price of that date. The coefficient of the lowest price rank is higher than the coefficient of the second-lowest price, which in turn is higher than the coefficient of the third-lowest price, and so forth. We form a series of t-tests of differences between adjacent coefficients and reject the null of no differences. The results are also economically significant. For example, the coefficient on the $\text{Dummy_lowest_price}_{it}$ is 0.514, implying that if the date has the lowest price of the month, the odds of a grant event falling on that date increase by a factor of exp(0.514) = 1.67 (or by 67%).

Column 2 of Table 4 shows the results where each of the coefficients in (2) is interacted with a dummy variable for whether the grant event took place before or after SOX. Consistent

[15] To verify that our results are robust to the possibility of an upward drift in stock prices during the grant month (see footnote 13), we re-ran the regressions of Table 3, as well as the regressions in the next Table 4, adding controls for the location of the trading day within the calendar month. In one type of regression, we added dummies for the location of the day in the sequence of the calendar days (first day of the month, second day of the month, etc.) In a second type of regression, we added dummies for the location of the day in the sequence of trading days (first trading day of the month, second trading day of the month, etc.). Adding these controls did not change any of the results in Table 3 or Table 4. That is, the increased odds of a day being selected as a director grant event brought about by having a low price-rank are robust to controlling for the day being located in a particular part of the calendar month.

with the results in Table 2, dates at the bottom of the distribution were each more likely to be selected before SOX than after SOX, though each of them still remained after SOX more likely to occur than under random assignment. Moreover, both before SOX and after SOX, the likelihood of selection went down monotonically from the highest to the lowest price of the month.

C. Estimating the Incidence of Opportunistic Timing

Having seen that the lowest prices have been selected abnormally often, we now turn to estimate the number of grant events that have been opportunistically timed. For every price rank included in Table 1, we calculate the expected number of grant events with that price-rank if grant events were assigned over the trading days during the grant month without regard to their price-rank.[16] This estimation is done by calculating for each individual grant event, assuming random assignment, the probability of being granted at the specific price-rank, and then aggregating these probabilities across all grant events. Because of the large number of grant events involved, a random assignment is highly unlikely to deviate significantly from the expected number we calculate.

The difference between the actual number of grant events and the expected number in any price-rank provides our estimate for the number of grant events that were opportunistically timed. Table 5 shows our estimation results. We estimate that over the full sample period of 1996-2005, 804 lucky grant events – 32.5% of all lucky grant events – owed their low price-rank to opportunistic timing. The percentage of lucky grant events that were due to opportunistic timing was 35.7% before SOX and 25.4% afterwards.

We find a smaller incidence of opportunistic timing among grant events with the second- and third-lowest prices of the month. For grant events with the second-lowest price of the month, we estimate that 231 (about 13%) were opportunistically timed. For grant events with the third-lowest price of the month, the estimated number of opportunistically timed events is only 74 (about 4% of total). Overall, we estimate that, during 1996-2005, there were 1,109 grant events

[16] The scenario of random assignment also assumes that, after the day is randomly selected, the distribution of prices among the month's different days is not manipulated or affected by the choice of grant date. The probability of a day being the lowest-price day is computed by the ratio of the number of days in the grant month that have the lowest price to the number of trading days in that firm's stock during the grant month.

that were placed in one of the three lowest prices due to opportunistic timing. These grant events comprised 3.9% of all the grant events during the period (4.5% before SOX).

Table 5 also displays statistics about the magnitude of the discount in exercise price that opportunistic timing of grant events could have produced. For the category of lucky grant events, the grant price (which was the lowest price of the month) was on average 11% lower than the median price of the month.

Table 6 provides estimates of the number of directors and firms that were on the receiving and giving sides in grant events affected by opportunistic timing. Again, our estimation methodology is to calculate the difference between actual numbers and the ones expected under random assignment. The table indicates that the number of directors with one or more lucky grants (5,895) exceeds the number estimated under random assignment by 1,389. The estimated number of directors receiving one or more lucky grants due to opportunistic timing comprises 4.6% of all directors in our sample.

With respect to firms, the number of those providing one or more lucky grants exceeds the estimated number under random assignment by 457. The firms that participated in one or more opportunistically timed grant events comprised 7.1% all firms.

D. Backdating or Spring-Loading?

Deviations from patterns expected under random assignment might be not only due to backdating but also due to spring-loading based on private information (e.g., Yermack (1997)). Having found that many lucky grants owe their presence in this category to opportunistic timing, we turn to examine the possibility that such timing was largely driven by spring-loading rather than backdating. To examine this possibility, we perform two tests similar to those performed for lucky CEO grants in Bebchuk, Grinstein, and Peyer (2006). In our first test, we focus on grant events in months in which the difference between the lowest and second-lowest prices of the month was very small. In such cases, it is implausible that insiders would view one price level as reflecting significant under-valuation but not the other. Accordingly, in such cases, the spring-loading hypothesis would not predict a significant difference in the odds of being selected between days with the lowest and the second-lowest price of the month. In contrast, in the event of backdating that looks back and selects the best price available, a small difference between the

lowest and second-lowest prices can still be expected to produce a big difference in the odds of being selected.

We therefore pick from our database only grant events falling in a month in which the difference between the lowest and second-lowest prices is less than 1%. About half of the grant events fall into this category. We then run the following regression:

$$Is_Grant_{it} = a0 + a1 * Dummy_lowest_price_{it} + a2 * Dummy_second_lowest_price_{it} \qquad (3)$$

Panel A of Table 7 (column 1) shows the results of regression (3). The coefficients a1 and a2 are both positive and statistically significant. However, the coefficient a1 is significantly larger than the coefficient a2. The a1 coefficient is 0.326 and the a2 coefficient is 0.163, and the difference between the coefficients is significant at the 1% level. Therefore, the odds that the grant is given at the lowest price of the month are exp(0.326)=1.39 times higher than they are given on other days, while the odds that the grant is given at the second-lowest price of the month are only exp(0.163)=1.18 times higher. This result is consistent with the view that backdating played a significant role in producing the abnormal incidence of lucky grant events.

Column 2 shows the results of re-running regression (3) after excluding grant events that coincided with the annual meeting. The coefficients increase in magnitude, with the gap between the selection odds of days with the lowest and second-lowest price increasing somewhat.

Columns 3-4 are similar to columns 1-2, except that the sample consists of only the grant events that fell in either the lowest or the second-lowest price of the month, and the regression has only the lowest-price dummy variable. The coefficient of the lower-price dummy in column 3 is 0.163 and is statistically significant at the 1% level. The coefficient increases a bit (remaining significant at 1%) when grant events coinciding with the annual meeting are excluded. These results reinforce the conclusion that the selection of dates is biased in favor of the lowest price of the month over the second-lowest price of the month even when the difference between the two prices is below 1%.

Our second test for whether the abnormally high incidence of lucky grant events was generally driven by spring-loading is based on when the company reported the grant event to the

SEC.[17] Under the spring-loading hypothesis, grant event dates are chosen on the basis of the private information insiders have at the time of making the selection. Thus, under this hypothesis, the odds of a lucky grant are not expected to depend on how long after the grant event reporting occurred. In contrast, if grant events were produced by look-back backdating, then reporting the grant event in the subsequent month (or later) would facilitate the selection of the lowest price of the month as the grant event price.

To study this issue, we introduce two dummy variables: (i) Reported_same_month, which equals one if the filing with the SEC occurs in the same month as the grant and zero otherwise; and (ii) Reported_next_month, which equals one if the filing date is in the month following the grant month or later. About 33% of the grants in our sample were filed in the same month as the grant month. (75% of those after SOX and 6% of those preceding SOX.) We then run the following regression:

$$\text{Is_Grant}_{it} = a0 + a1 * \text{Dummy_lowest_price}_{it} * \text{Reported_same_month} + a2 * \text{Dummy_lowest_price}_{it} * \text{Reported_next_month} + e_{it} \quad (4)$$

Under the spring-loading hypothesis, the filing month is expected to be irrelevant, and no difference is thus expected between the coefficients a1 and a2.

Panel B of Table 7 reports the results of regression (4). The coefficient of a2 is larger than the coefficient of a1 by 0.239, and a t-test rejects the null that the two coefficients are the same. The odds of the day with the lowest price of the month being selected for the date of the grant event are significantly higher when the grant is reported after the month ends, which is consistent with backdating playing a significant role in producing lucky grant events.

The third column shows the same regression for the subsample of post-SOX grant events only. As noted, during the post-SOX period, some firms have not complied with the two-day reporting requirement and a significant fraction of firms continued to report a grant in the month following it. Again, consistent with backdating playing a significant role in the opportunistic

[17] Heron and Lie (2006a) and Narayanan and Seyhun (2006b) analyze how the pre- and post-grant returns accompanying grants have been influenced by when the company reported the grant.

timing of grant events, we find that lucky grant events are more likely to be lucky in the post-SOX period if the grant event was reported in the next month rather than in the same month.

E. Returns Before and After Grant Events

Throughout this study, we focus on price rank within the stock price distribution of the month of the grant events as our tool for identifying and studying opportunistic timing of directors' grants – with particular emphasis on grants that were given at the lowest price of the month (lucky grants). An alternative approach to detecting abnormal patterns, which has been extensively used in the literature on executives' grants, focuses on abnormal returns around grant dates. Yermack (1997) finds positive abnormal returns following stock option grants to CEOs, and Lie (2005) finds an abnormal negative return before executive grant awards and an abnormal positive return after such awards. Heron and Lie (2006a) find that the patterns of abnormal returns around grant events weakened after passage of SOX.

Therefore, before turning to studying the variables that are correlated with lucky grants, we wish to confirm the existence of abnormal patterns in the timing of director grant events also using the abnormal returns methodology. Figure 2 plots the mean cumulative abnormal returns around director grant events. To calculate abnormal returns, we use the Fama-French (1993) three-factor model, calculating the coefficients of the three-factor model over the 255 trading days that end 50 days prior to the grant event day. The figure indicates that, on average, director grant events are preceded by negative abnormal returns and are followed by positive abnormal returns, a pattern similar to that found by Lie (2005) and Heron and Lie (2006a) for executive grant events.

Figure 2 also presents separate plots for pre-SOX grant events and post-SOX grant events. Again, similar to the results in Heron and Lie (2006a) for executive grants, the pattern before SOX is much more pronounced than the pattern after SOX. However, even after SOX the pattern of negative abnormal returns before the grant event and positive abnormal returns after the grant event still exists.

Table 8 shows the average cumulative abnormal returns over the 10 trading days preceding and following the grant event. The table indicates that the average cumulative abnormal return during the 10-day period that precedes the grant event is -0.58% and the average

cumulative abnormal return over the 10 days following the grant event is 1.2%. Both average cumulative abnormal returns are significantly different from zero at the 1% level.

The table also shows the pattern in the pre-SOX period where the pre-event average cumulative abnormal return is -1.07% and the post-event average cumulative abnormal return is 1.43%. For the post-SOX period, the pre-event average cumulative abnormal return is -0.17% and the post-event average cumulative abnormal return is 0.49%. However, even after SOX, the abnormal returns are significantly different from zero. Overall, our results show that abnormal returns around director grant events exhibit similar patterns to those found around executive grant events.

IV. The Determinants of Luck

Our analysis thus far has identified a significant incidence of opportunistic timing grant events with low price ranks, especially among lucky grant events at monthly lows. Because a significant fraction of lucky grant events owe their status to opportunistic timing, lucky grant events provide a useful tool for studying the factors likely to be associated with such timing. We now turn to pursuing this inquiry.

A. Univariate Statistics

Table 9 displays univariate statistics. Panel A shows differences between grant events that were lucky and grant events that were not, and Panel B shows differences in the incidence of lucky grant events among various groups of grant events.

The table indicates that lucky grant events were more frequent:

- in months in which the difference between the lowest and the median price of the month was higher;
- before SOX was adopted;
- in smaller firms;
- when executives, and especially the CEO, also received a grant at the same time;
- when the number of directors participating in the event was small;
- when the firm had more entrenching provisions (higher level of the entrenchment index);
- when the board did not have a majority of independent directors;

- when a preceding grant event was lucky as well; and
- when insiders' ownership stake is large.

We shall discuss the relations between lucky grant events and each of these variables in greater detail below when we run multivariate regressions seeking to control for other variables.

B. Grant Circumstances and Firm Characteristics

Turning to multivariate regressions, we begin with factors for which Thomson and CRSP have all the necessary information and we are thus able to conduct tests based on our grant dataset as a whole. These factors are firm size, new economy classification, stock price volatility during the grant event month, and whether the grant event took place before or after SOX. Our variable for firm size is the natural log of relative market capitalization defined as the ratio of the market capitalization of the firm at the grant date divided by the median market capitalization of all firms that gave a grant during that year. We use a variable that classifies firms into new and old economy firms following the definition in Murphy (2003). We proxy stock price volatility during the grant month by the percentage difference between the median and lowest stock price of the month (in log). We exclude here as well as in subsequent regressions grant events coinciding with the annual meeting, which we found not to have favorable timing.

Our multivariate regressions have the following general specification:

$$\text{Lucky}_{it} = [\text{FIRM CHARACTERISTICS}_{it}] + [\text{GRANT CHARACTERISTICS}_{it}] \quad (5) \quad + \text{SOX}_{it} + e_{it}$$

Table 10 displays our results. The first two columns are pooled regressions in which we cluster the errors by firm to correct for potential correlations across the likelihood of lucky grant events among the same firms. The next two columns include firm fixed effects, and the last two columns include director fixed effects.

Size: All the regressions include firms' relative size as an independent variable. Smaller firms might have less outside scrutiny and less visibility, making opportunistic timing less likely to be detected by outsiders.[18] In our pooled regressions, the coefficient on firms' relative size is

[18] Bebchuk, Grinstein, and Peyer (2006) find CEO grants are more likely to be lucky when the firm has a relatively small size.

negative but statistically insignificant. In the fixed effects regressions, the coefficients on relative size are positive and statistically significant, indicating that increases in firms' relative size were accompanied by improvements in directors' luck.

New Economy: The fact that many of the firms that have thus far come under scrutiny are new economy firms has led to an impression that backdating has been concentrated among new economy firms. Bebchuk, Grinstein, and Peyer (2006) find that CEO grants, even though far from limited to or concentrated in new economy firms, were somewhat more likely in such firms. The coefficient of this variable turns out to be statistically insignificant from zero, suggesting that director luck has not been associated with new economy classification.

Gains from Luck: Another independent variable we use is the percentage difference between the median price and the lowest price of the month of the grant event (in log). This variable is used as a proxy for the potential payoffs from turning a grant that was actually awarded on another day during the month into a lucky grant. The coefficient of this variable is positive (and significant at the 1% level) in the three regressions in which it is used (see columns 1, 3, and 5).

It is worth drawing attention to the fact that the coefficient of the median-lowest difference is positive not only in the pooled regression but also in the fixed effect regressions in columns 3 and 5. These results indicate that our finding regarding this variable in the pooled regression of column 1 is not all due to cross-sectional differences, i.e., differences between high-volatility and low-volatility firms. For any given firm that gives multiple grants over time, grants are more likely to be lucky in months in which the difference between the median and the lowest price is relatively large. This association is consistent with opportunistic timing reflecting an economic decision determined by its payoffs (and thus more likely to be taken when payoffs are high). If opportunistic timing were a practice followed with little thought by some firms, we would not expect to find the within-firm variation over time that we observe.

In the regressions of columns 2, 4, and 6 we use a decomposition of the median-lowest difference into a market component and a firm-specific component. In all three regressions, the coefficients of <u>both</u> components are positive and significant at the 1% level. These results reinforce our conclusion in Section III.D that backdating, and not merely spring-loading, plays a significant role in producing the abnormal concentration of grant events at monthly lows. Because insiders can be expected to have an advantage in predicting future firm-specific returns

but not market-wide movements, the market-specific component is not expected to play a significant role under a spring-loading scenario.

SOX: We use in all the regressions a dummy variable equal to one if the grant was given post-SOX to control for the change in reporting requirements. The coefficient of SOX is negative (at 1% significance), indicating that grant events were less likely to be lucky after the adoption of SOX.

Other Controls: Even under random selection of dates, a grant would be more likely to be lucky when more trading dates in the month had a price equal to the lowest price level of the month. Also, even when there is only one day with this price level, the probability that it would be selected is lower when the month has more trading days. Therefore, we include controls for the number of trading days in the month of the grant and for the number of closing prices during the month equal to the lowest price of the month in all the regressions of this section.[19]

C. The Relation between Directors' and Executives' Luck

We now turn to the question of whether and how the odds of a director being lucky depended on who else (if anyone) got options at the same time as the director. Out of our sample of director grant events, in 71% of the cases (18,376 events) directors alone received options on that day and in 29% of the cases one or more executives also received a grant on the same date – the CEO alone in 2% of all grant events (427 events), the CEO and one or more other executives in 12% of all grant events (3,199events), and one or more non-CEO executives but not the CEO in 15% of all the grant events (3,886 events).

We re-run the basic regression of Table 10, column 1 – a regression on whether a grant event was lucky on various explanatory variables -- adding dummy variables for: (i) whether the CEO but not other executives received a grant on that date, (ii) whether the CEO and one or more other executives got a grant on that date, and (iii) whether one or more other executives but

[19] In untabulated regressions, we also added to all the regressions in this section on the determinants of luck (the regressions displayed in Tables 10-13) additional controls to verify that our results are robust to the possibility of an upward drift in stock prices during the grant month (see footnotes 13 and 14). In one type of regressions, we added dummies for the location of the grant day in the sequence of the calendar days of the month (first day of the month, second, day of the month, etc.). In a second type of regressions, we added dummies for the location of the day in the sequence of trading days (first trading day of the month, second trading day of the month, etc.). Adding these controls did not change any of the results reported in this section concerning how our variables of interest are associated with the odds of a grant being lucky.

not the CEO received a grant on that date. We present the results in column 1 of Table 11, panel A.

The coefficients of all three dummy variables are positive and significant at the 1% level, indicating that the odds that a grant event will be lucky increases when an executive is also getting a grant on the same day. A t-test shows that being with the CEO (whether or not another executive is also getting options) improves the odds of being lucky by more than being together only with one or more non-CEO executives. Thus, a director's interest in a grant event being lucky was more likely to be served when an executive, and especially the most important executive, also had a personal stake in such an outcome.

In columns 2 and 3 of panel A we add as variables the number of directors participating in the grant event and a dummy variable for whether four or more directors participated, respectively. In both cases, the results indicate that lucky grant events were associated (at the 1% significance level) with a smaller number of participating directors. It might be that a larger number of directors was more common in scheduled grants (recall that we have been unable to exclude all grant events that were scheduled). Or it might be that opportunistically timed grants were given to directors selectively – that is, to only few directors in each lucky grant event produced by such timing.

Our finding that grant events coinciding with grants to executives were more likely to be lucky than other grant events raises the question as to whether our earlier finding of abnormal concentration of grant events at monthly low was fully driven by grant events coinciding with executive grants. To explore this question, we re-run a regression similar to the ones displayed in Table 4 but restrict the sample to grant events not coinciding with grants to executives. Specifically, we run a regression of whether a day will be selected for the grant event on whether the day has the lowest price of the month.

In Table 11, panel B, we find that the coefficient of having the lowest price of the month is positive, which indicates that the abnormal tendency of monthly lows to be selected for grant events is there also for grant events not coinciding with grants to executives. Column 2 indicates that this abnormal tendency existed not only prior to SOX but also, though to a lesser extent, after the adoption of SOX. In column 3 we run the regression including all grant events again and add dummy variables for grant events where the directors alone receive a grant, the directors receive a grant along with a non-CEO executive, and the directors receive a grant along with the

CEO. The regression confirms that director grant events not coinciding with executive grants are still more likely to fall on a day with the lowest price of the month (though less likely to do so than a grant event coinciding with executive awards).

Having found that some of the 71% of grant events that did not coincide with grants to executives have been opportunistically timed, we proceed to examine whether and how the tendency of such grant events to be lucky was correlated with the executives' luck. It is possible that circumstances leading to opportunistic timing of executives' grants also led to opportunistic timing of directors' grants even when they did not coincide with executive grants. We test this possibility in Table 11 panel C.

The table shows results of regressions using all grant events that did not coincide with executive grants. The dependent variable is a dummy variable for whether the grant event was lucky, and the independent variable of interest is a dummy variable equal to 1 if the CEO was given a lucky grant in the year of the grant event or the preceding year. We also include our standard controls. The results (see column 1) indicate that a lucky grant event for directors was positively correlated (at the 1% level) with CEO luck during the current or prior year.

Column 2 repeats the regression in column 1 except that firm fixed effects are added. With firm fixed effects, the test focuses on within-firm variation over time between periods in which the CEO was and was not lucky. We find that, even after controlling for firm fixed effects, director luck was positively correlated (though only at the 10% significance) with CEO luck. This finding, like the earlier findings in this section, is consistent with the view that directors' luck and executives' luck have been closely linked.

D. Governance

We now turn to examine the association between director luck and firms' governance arrangements and characteristics. To the extent that the opportunistic timing of directors' grants reflects agency problems between outside directors and shareholders, the existence and magnitude of such agency problems might depend on various governance dimensions.

For the analysis in this section, we use data about governance, director, and board variables from the ExecuComp and the IRRC datasets, and doing so reduces the size of our sample of grant events. We begin with the regression specification (5) and we add to it

governance variables in four steps, with each step adding some variables and thereby reducing sample size. The results of the four regressions are displayed in Table 12.

The results in column 1 suggest that not having a majority of independent directors on the board is correlated with increased odds of a grant event being lucky at the 5% significance level. This result holds in all subsequent regressions at the 1% significance level. The result might suggest that lack of board independence might not only be associated with reduced power of the outside directors vis-à-vis executives, but might also be associated with increased agency costs between the outside directors and shareholders. This result is consistent with the finding in Bebchuk, Grinstein, and Peyer (2006) that CEO luck is correlated with lack of a majority of independent directors on the board.

In terms of other aspects of board composition and structure, the likelihood of a grant event being lucky increases when there are more executives on the board (significant at the 10% level); this result holds at the 5% or 10% level in the three subsequent regressions. The coefficient of board size (the number of directors on the board) is negative and significant at 10% level, and it remains negative and significant (at 5% or 10% significance) at each of the subsequent three regressions. The coefficient on the board being busy (following Core, Holthausen, and Larcker (1999), we define a board as busy if the firm's directors have on average two or more directorships) is negative but statistically insignificant throughout.

As to CEO characteristics, the likelihood of a grant event being lucky increases (at 5% significance) when the CEO has been in place for more years, and the coefficient of CEO tenure remains positive (though significant at only the 10% level) in the following regressions. This result is consistent with the finding in Bebchuk, Grinstein, and Peyer (2006) that CEO luck is correlated with CEO tenure. It might be that directors are more careful and hesitant about opportunistic timing when the CEO is relatively new. The coefficient of the CEO also being the chair is positive but insignificant in all regressions, and the coefficient of the CEO also being the founder is negative but insignificant in all the regressions.

The total ownership stake held by insiders is also relevant. The coefficient of the insider's ownership stake is positive at the 1% significance level throughout, and the coefficient of the squared variable is negative at the 1% significance level throughout. Thus, increases in inside ownership have a positive effect on the odds of director luck initially, but begin to have a negative effect beyond a certain point (about 15% ownership stake).

In the second column we add the firm's level of entrenchment as measured by the entrenchment index of Bebchuk, Cohen, and Ferrell (2004). This index is based on six provisions that operate to protect insiders from the risk of being removed. We use a high entrenchment index dummy which equals one if the entrenchment index exceeds two (implying that the firm has three or more entrenching provisions) and zero otherwise. The results suggest that the odds of a grant event being lucky are higher – at the 1% significance level – when the firm's entrenchment index level exceeds two, as is the case for roughly half of the firms. This result continues to hold at the 1% significance level in the subsequent two regressions.

Column 3 adds the fractional ownership by public pension funds. There are suggestions in the literature that larger ownership by such funds is associated with improved governance or decision making (e.g., Qiu (2006), Del Guercio and Hawkins, (1999)). Consistent with this work, we find that the odds of a grant event being lucky are negatively correlated (significant at the 10% level) with the fraction of shares owned by public pension funds.

Column 4 adds dummies for whether the audit, compensation, and nomination committees are independent and whether the firm has a corporate governance committee, variables for which we have information only for part of the period. None of the coefficients of these variables is statistically significant while the coefficient on the independence of the board as a whole remains negative and significant at the 1% level. This finding suggests that having an independent compensation committee is not going to have much of an impact as long as the board electing the committee does not have a majority of independent directors.

E. Serial Luck

The preceding subsections have identified a number of variables that are correlated with lucky grant events. There are likely to be other firm traits that affect the incidence of opportunistic timing but were not included in our regressions. To the extent that such traits do exist, one would expect luck to be "serial" or "persistent". That is, controlling for all the variables thus far used, one would expect a grant event to be more likely to be lucky if a preceding grant was lucky. Such persistence would not be expected, of course, under random selection.

To examine the existence and magnitude of such persistence, we re-run the regressions in Tables 9 and 11, but this time add two dummy variables. One dummy variable is equal to one when the firm had a preceding grant event for directors (in our dataset) and it was lucky. The

other dummy variable is equal to one if the firm has a preceding grant in our dataset and it was not lucky. Our default is therefore grant events that were not preceded in our dataset by another grant.

Table 13 displays the results of regressions with the two dummy variables added to them. In all three regressions, the coefficient of the previous lucky dummy is positive and significant at the 1% level (10% level with the smaller sample where we require IRRC data to be available). The coefficient is on the order of 0.3, which implies that having a preceding grant event that was lucky increases the odds of a current grant event being lucky by 35% (relative to grant event for which we have no information as to whether a preceding grant event existed or was lucky). In contrast, the coefficient on the dummy for having a preceding grant that was not lucky (which lumps together all other price ranks, including preceding grants at the second-lowest price of the month) is negative and statistically significant in the first two regressions.

Thus, the results in Table 13 indicate that there are additional factors making lucky grants events more likely beyond those identified in the preceding subsections. Identifying such additional factors might be a worthwhile task for future research.

F. Director Luck Around the Economy

Because most of the backdating cases that have thus far been uncovered involve new economy firms, there is a widespread impression that the opportunistic timing of executives' grants has been concentrated in the new economy sector (see, e.g., Walker (2006)). We have already seen earlier that director luck, however, is not correlated with new economy classification when controlling for other variables such as stock price volatility in the month of the grant event. We now turn to look beyond the new/old economy division at how opportunistic timing has varied across the economy's industries. The thousands of old economy firms that are publicly traded span, of course, diverse industries. In this section we analyze the propensity of opportunistic timing across the twelve Fama-French Industries.[20]

Table 14 shows the results of our analysis. The table is ordered by the percentage of grant events in the industry that are lucky. We find a significant variation in the incidence of lucky

[20] The industry definitions are obtained from Ken French's website. We also conducted an analysis of the propensity of lucky grants across industries classified on the basis of one-digit SIC codes, and we similarly found opportunistic timing to be present in all industries that made significant use of option grants (specifically, all industries other than agriculture and public administration).

grants across the economy's industries. The highest percentage of lucky grant events is in the shops and consumer durables industries (10.4% and 10.3% respectively), and the lowest percentage is in utilities and chemicals (4.7% and 6% respectively).

Table 14 also shows how the twelve industries vary in terms of the estimated incidence of firms involved in one or more opportunistically timed grant events. The incidence of such firms is highest in the shops and business equipment industries (10% and 9% respectively). The only industry in which we do not identify such an incidence is utilities. A relatively low percentage of firms involved in opportunistic timing is present in manufacturing, money, energy, and chemicals (4%, 4%, 4%, and 3% respectively).

The variation across industries that we identify is not necessarily all due to "industry effects", say, industry "norms" or "culture."[21] Industry classification might well be correlated with factors such as stock price volatility or governance arrangements that we have found to be correlated with lucky grants. Thus, to investigate the extent to which the variation across industries is due to such factors rather than "pure" industry effects, we re-run the regression shown in column 1 of Table 10, adding industry dummy variables using the consumer non-durables industry as the default group. The last column of Table 14 shows the coefficients on the industry dummies in this regression.

We find that, once we control for the difference between the lowest and median price of the month of the grant event and other variables, only the chemicals and utilities industries have a probability of a lucky grant event that is different to a statistically significant degree from the default group of the consumer non-durables industry. Pair-wise F-tests further suggest that the Shops industry has a significantly higher incidence of opportunistic timing than most other industries, except for the Consumer Durables, Other, and Business Equipment industries. However, no other pairwise test is significant.[22] We thus conclude that opportunistic timing of director grants has not been limited to, or concentrated in, any sub-part of the economy, and that

[21] Fleischer (2006) argues that differences in corporate culture and compliance norms were likely a key determinant for why some firms but not others engaged in opportunistic timing of executives' grants.

[22] For the sub-sample where we also have governance data, we also ran a regression (not shown) similar to that in Table 12 except that we added the industry dummies. Again, we found that, after controlling for governance characteristics, some industry differences remain, but that most industries are not statistically distinguishable in terms of the odds of lucky grant events.

differences in industry norms and cultures have not been a main factor shaping the distribution of such timing across public firms.

G. Super-Lucky Grant Events

Having thus far focused on grants awarded at the lowest price of the grant month, we conclude by exploring the possibility of opportunistic timing within periods longer than a calendar month. In particular, we examine in this subsection two types of lucky grants that were "super-lucky" – those having a grant price at the lowest price of the calendar quarter in which the grant was reported to have been awarded, and those having a grant price at the lowest price of the calendar year in which the grant was reported.

Figure 3 shows the fraction of grant events at the lowest, second-lowest, and third-lowest price of the quarter as well as the highest, second-highest, and third-highest. There is a relatively monotonic decrease in the number of incidences of grant events as one moves up the price-rank ladder. Table 15, panel A displays statistics concerning the incidence of super-lucky grants. In the overall sample period, we find 994 grants (3.8% of all grants) that were super-lucky. Out of the set of all lucky grants shown in Table 5, 40% were super-lucky (994 out of 2,473 grants). Under random assignment, we would have expected one third of the lucky events to be super lucky (one month per quarter). Therefore, super-lucky events happen more frequently than expected based upon the lucky grants. Furthermore, comparing the number of actual super-lucky grants with the estimated number of such grants, we estimate that 413 super-lucky grants (42% of all such grants) were opportunistically timed. The average discount of the exercise price of the super-lucky grants compared to the median stock price of the year is around 20%.

Table 15, Panel B shows statistics by firms, similar to the ones shown in Table 6 for lucky grants. About 13% of the total number of firms (839 firms) gave at least one grant to their directors at the lowest price of the quarter. We estimate that 35.3% of these firms (296 firms) gave one or more super-lucky grants due to opportunistic timing. These firms represent about 4.6% of all firms in our sample.

We repeat the analysis in Table 15, but this time we focus on super lucky grants that were granted at the price that was the lowest of the calendar year. We present the results in Table 16.

In the overall sample period, we find 215 grants (0.8% of all grants) that were super-lucky annually. Out of the set of lucky grants (see Table 5), 8.7% were super-lucky annually (215 out of 2,473 grants). Comparing the number of actual super-lucky grants with the estimated number of such grants, we estimate that 113 super-lucky grants (52.5% of all such grants) were the product of opportunistic timing. The average discount of the exercise price of the super-lucky grants compared to the median stock price of the year is around 39%.

A total of 197 firms (about 3% of the total number of firms) gave at least one grant to directors at the lowest price of the calendar year. We estimate that about 49.1% of these firms (97 firms) gave one or more super-lucky grants due to opportunistic timing. These firms represent about 1.5% of all firms in our sample.

VI. CONCLUSION

While prior empirical work and much public attention have focused on the opportunistic timing of option grants to executives, we show in this paper that some grants to outside directors were also opportunistically timed. We estimate that about 460 firms and 1,400 outside directors were associated with opportunistically timed lucky grant events. This opportunistic timing of outside directors' grants has been produced to a significant extent by backdating and not merely spring-loading based on private information.

Our results highlight that agency problems might arise not only in the relationship between executives and the boards overseeing them but also between outside directors and the public investors. The conditions under which outside directors operate, and not merely the classification of outside directors as such, can affect how well they perform their critical role. Our findings concerning the relations between director luck and governance arrangements can help to identify the conditions under which directors can best perform.

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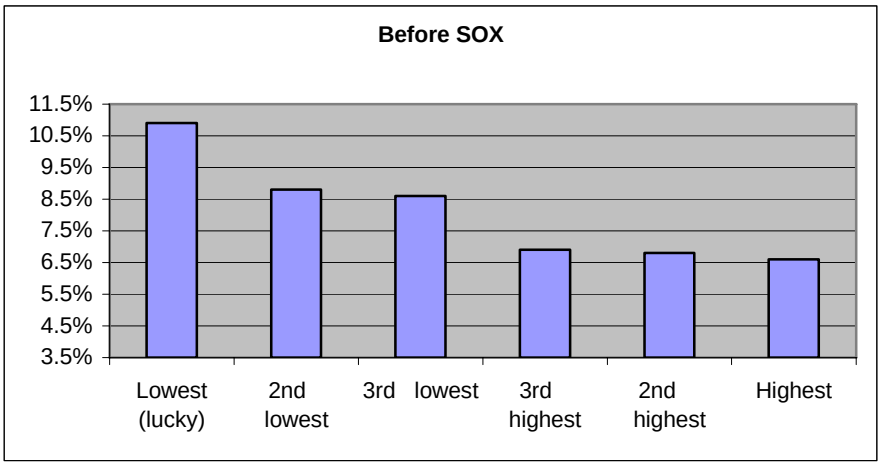
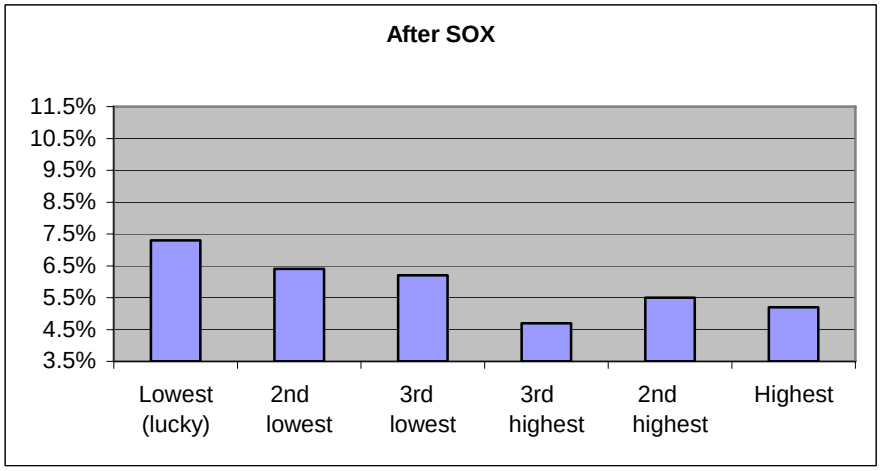
FIGURE 1: THE DISTRIBUTION OF GRANT EVENTS – MONTHLY PRICE RANKS

The figure displays the fraction of grant events that were given on the lowest price of the month (lucky), second, and third lowest, as well as third, second, and highest. The numbers are from Table 1, panel A using the full sample of grant events to outside Directors between 1996 and 2005.





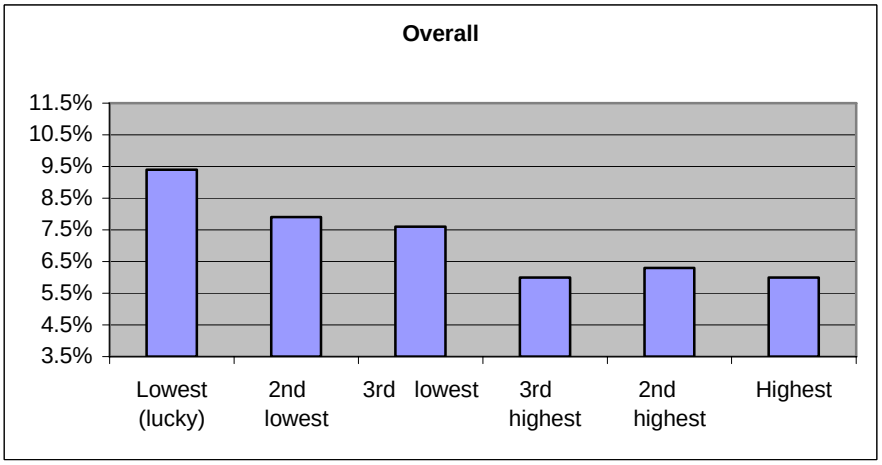


FIGURE 2: ABNORMAL STOCK RETURNS AROUND GRANT EVENTS

The figure shows the cumulative abnormal stock returns from 10 days before through 10 days after unscheduled stock options grants to outside directors between 1/1/1996 and 12/31/2005. Abnormal stock returns are estimated using the three-factor model described in Fama and French (1993), where the estimation period is the 255 days ending 50 days before the grant date. The sample consists of 23,209 grant events that have sufficient return data for the model estimates. Scheduled grant events, defined as grant events that are within one day of the annual meeting, are excluded. Pre-SOX grants are grants that were awarded before September 1st 2002. Post SOX grants are grants that were awarded on or after September 1st 2002.

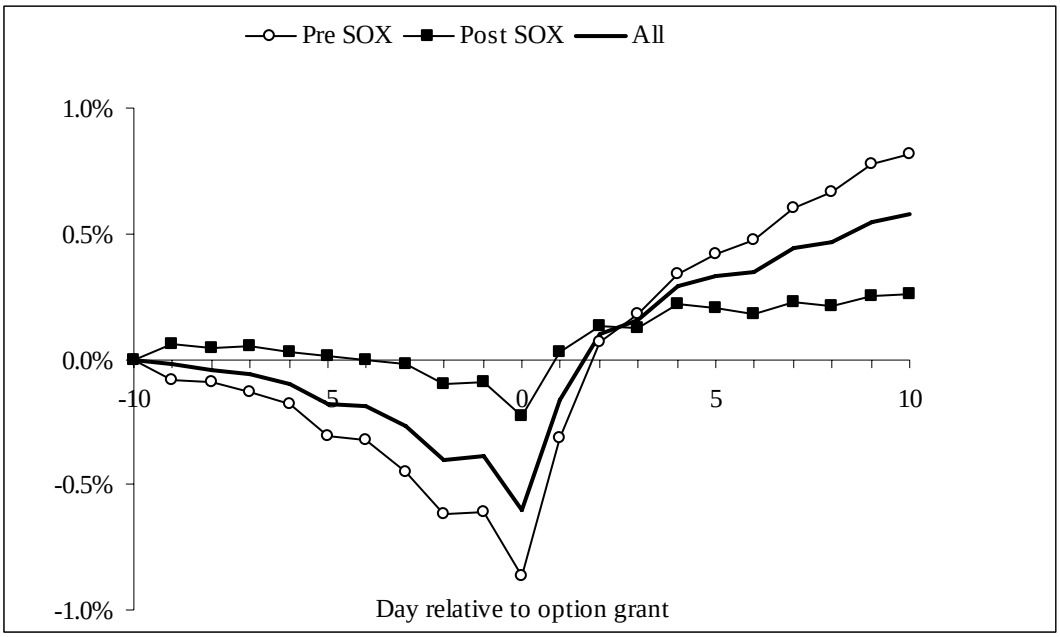
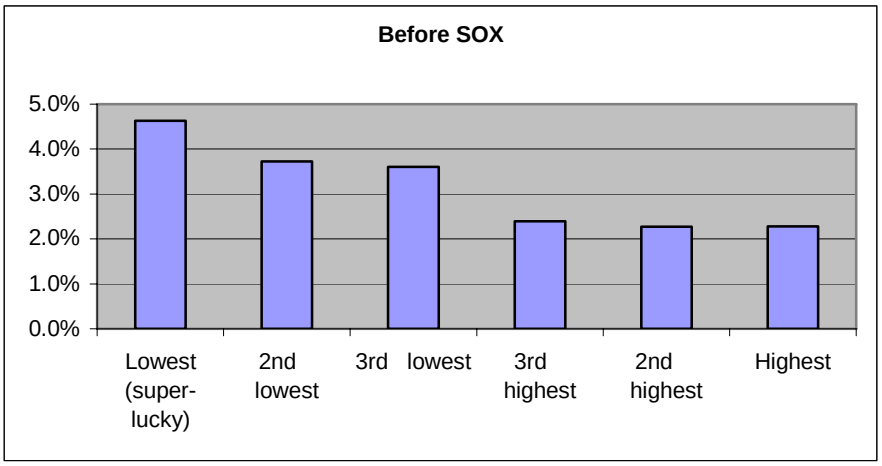
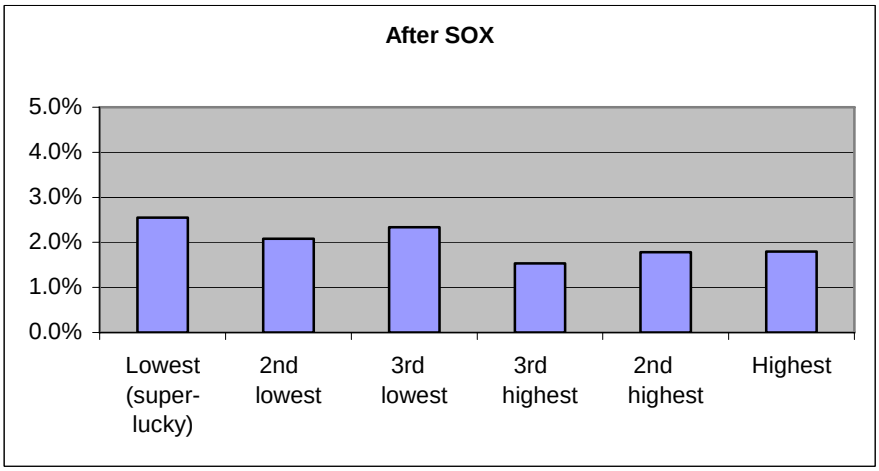


FIGURE 3: THE DISTRIBUTION OF GRANT EVENTS – QUARTERLY PRICE RANKS

The figure displays the fraction of grant events that were given on the lowest price of the quarter (super- lucky), second, and third lowest, as well as third, second, and highest. The numbers are from Table 15, panel A using the full sample of grant events to outside directors between 1996 and 2005.





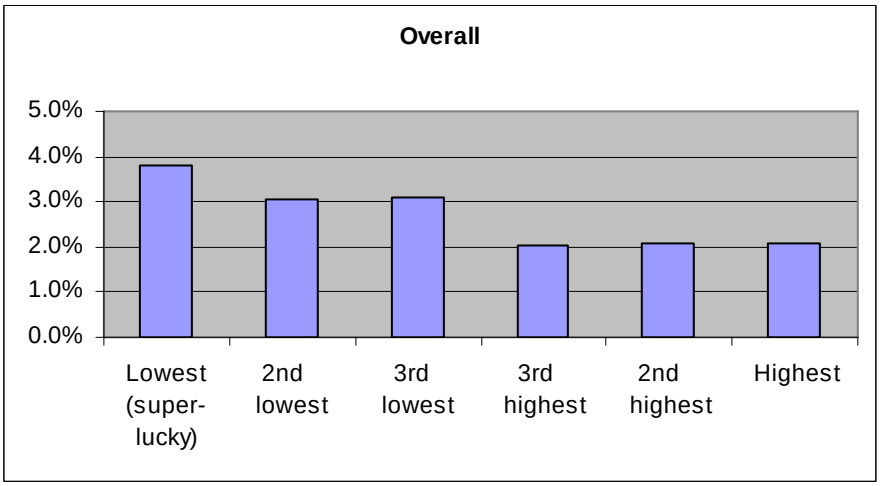


TABLE 1: DISTRIBUTION OF LUCK FOR OUTSIDE DIRECTOR GRANTS

The data on option grants are from Thomson for the years 1996-2005. We use a sample of grants to outside directors and report the fraction of grant events given at the lowest (second, third) and highest (second, third) price of the calendar month in which the grant(s) were given. We show statistics for a grant event date independent of how many directors receive a grant on that date. We call such days, Grant Events. Also reported is the fraction of grant events where the grant day price was below versus above the median stock price. The sample consists of 28,764 option grant events. Panel B shows the same statistics for grant events where we have IRRC data available on the annual meeting date and that date coincides with the grant event date (+/- 1 day). Panel C shows the statistics for the grant events in Panel A that are not in Panel B. Panel D shows statistics for grant events where we do not know the exact annual meeting date (22,670 grant events) but we exclude grant events in the months of April and May (66% of the annual meeting dates fall into those two months according to IRRC date).

		Percent of Grant Events At:								
	Total number of grant events	Lowest (Lucky)	2nd lowest	3rd Lowest	3rd highest	2nd highest	Highest	Below median	Above median	Difference
Panel A: All Grant Events										
Before SOX	17512	10.2%	8.4%	8.3%	6.9%	6.7%	6.4%	49.3%	42.3%	7.0%
After SOX	11252	7.1%	6.3%	6.2%	4.8%	5.4%	5.1%	50.2%	44.7%	5.4%
Overall	28764	9.0%	7.6%	7.5%	6.1%	6.2%	5.9%	49.6%	43.2%	6.4%
Panel B: Grant Event Date Known to Coincide With Annual Meeting Date (+/- 1 Day)										
Before SOX	1803	4.6%	5.0%	5.9%	6.8%	5.4%	4.7%	44.7%	49.8%	-5.0%
After SOX	752	4.0%	4.4%	6.8%	6.3%	4.5%	3.7%	49.3%	46.5%	2.8%
Overall	2555	4.4%	4.9%	6.1%	6.6%	5.2%	4.4%	46.1%	48.8%	-2.7%
Panel C: Sample Excludes Grant Events Known to Coincide With Annual Meeting Date (+/- 1 Day)										
Before SOX	15709	10.9%	8.8%	8.6%	6.9%	6.8%	6.6%	49.8%	41.4%	8.4%
After SOX	10500	7.3%	6.4%	6.2%	4.7%	5.5%	5.2%	50.2%	44.6%	5.6%
Overall	26209	9.4%	7.9%	7.6%	6.0%	6.3%	6.0%	50.0%	42.7%	7.3%
Panel D: Sample Excludes Grant Events in the Months of April and May and Grant Events where the Annual Meeting Date is Known										
Before SOX	9707	12.0%	9.3%	9.0%	7.3%	7.0%	6.8%	50.1%	40.1%	10%
After SOX	7120	7.5%	6.7%	6.5%	4.8%	5.4%	5.1%	50.7%	44.0%	7%
Overall	16827	10.1%	8.2%	7.9%	6.2%	6.3%	6.1%	50.4%	41.8%	9%

TABLE 2: THE DISTRIBUTION OF LUCK FOR OUTSIDE DIRECTORS AND FIRMS

The data on option grants are from Thomson. We use a sample of grants to outside directors and report the number of outside directors in panel A, the fraction of outside directors who received at least one grant at the lowest price as well as the fraction of outside directors that received at least one grant at the second lowest price whereas this outside director did not also receive a grant at the lowest price. Similarly for the highest and second highest price of the month. For firms, the unit of observation is the grant event, and statistics are computed at the firm level in a similar way to the outside director statistics. The sample consists of 92,253 grants to 32,139 different directors in 28,764 option grant events by 6,577 different firms between 1996-2005.

Distribution of Grants by Outside Directors

# Grants	Number of Outside Directors	At least one at lowest (lucky)	At least one at second lowest but none at lowest	At least one at lowest or second lowest	At least one at second highest or highest	At least one at second highest but none at highest	At least one at highest
1	12864	9.5%	8.0%	17.6%	13.2%	6.6%	6.6%
2	6835	16.3%	13.6%	29.9%	22.6%	11.5%	11.0%
3	4298	21.5%	15.8%	37.3%	30.5%	14.1%	16.4%
4	2686	27.0%	19.7%	46.7%	38.3%	18.2%	20.2%
5 and more	5456	42.0%	22.1%	64.1%	57.3%	21.7%	35.6%
All	32139	19.5%	13.6%	33.2%	27.1%	12.2%	14.9%

Distribution of Grants by Firm

# Grant Events	Number of Firms	At least one at lowest (lucky)	At least one at second lowest but none at lowest	At least one at lowest or second lowest	At least one at second highest or highest	At least one at second highest but none at highest	At least one at highest
1	1658	12.1%	9.8%	21.8%	15.5%	7.4%	8.1%
2	1087	19.8%	16.2%	36.0%	23.1%	11.8%	11.3%
3	811	26.9%	16.8%	43.6%	32.2%	15.9%	16.3%
4	611	32.2%	19.8%	52.0%	36.8%	19.1%	17.7%
5 and more	2410	45.6%	22.2%	67.8%	59.4%	22.9%	36.5%
All	6577	29.3%	17.2%	46.5%	36.9%	15.9%	20.9%

TABLE 3: LIKELIHOOD OF A DAY BEING SELECTED AS A GRANT DATE

For each firm that granted options to outside directors, the sample consists of all dates during the month where the options were granted. The dependent variable, is a dummy variable which equals one if the firm had a grant event to outside directors on that particular date and zero otherwise. Grant events Before SOX are ones whose grant date is before September 1, 2002, and grants After SOX are ones whose grant data are on or after September 1, 2002. Three lowest prices of the month is a dummy variable equal to one if the grant-date price was one of the three lowest prices of the month, and zero otherwise. *, **, *** represent significance at the 10%, 5%, and 1% level respectively. The numbers in parentheses are the t-statistics of the coefficients, based on robust standard errors and adjusted for clustering at the firm level. The sample for each of the regressions either includes or excludes months where the grant event falls on the day (+/-1 day) of the annual meeting. The last two regressions include only months where the grant was given on the day (+/- 1 day) of the annual meeting.

	(1)	(2)	(3)	(4)	(5)	(6)
Three lowest prices of month	0.290	0.319			-0.084	
	(18.98)***	(20.15)***			(1.47)	
Three lowest * Before SOX			0.308	0.343		-0.128
			(18.17)***	(19.65)***		(1.99)**
Three lowest * After SOX			0.253	0.269		0.035
			(10.97)***	(11.27)***		(0.36)
Constant	-3.042	-3.048	-3.042	-3.048	-2.984	-2.984
	(800.07)***	(747.00)***	(800.07)***	(747.00)***	(328.96)***	(328.96)***
Observations on Meeting:	Included	Excluded	Included	Excluded	Only if	Only if
Observations	571830	519328	571830	519328	52502	52502

TABLE 4: PRECISE RANK AND THE LIKELIHOOD OF SELECTION AS A GRANT DATE

The regression is similar to the regression in Table 3, except that the independent variables are dummies for whether the price on the grant event date was the lowest, 2nd lowest, 3rd lowest, etc. *, **, *** represent significance at the 10%, 5%, and 1% significance level, respectively. The numbers in parentheses are the t-statistics of the coefficients, estimated using robust standard errors that are adjusted for clustering at the firm level. Coefficients in regression 3 and 4 are reported with an interaction variable between the price-rank and either a Before SOX or After SOX dummy variable. Regression 1 and 3 use all events, regression 2 and 4 exclude events where the grant event date is the annual meeting date (+/-1 day).

	(1)	(2)		(3)	(4)
Dummy_Lowest_price	0.514	0.565	Lowest * Before SOX	0.572	0.631
	(20.77)***	(22.23)***		(19.74)***	(21.27)***
Dummy_2nd lowest_price	0.228	0.259	2nd lowest* Before SOX	0.234	0.267
	(9.57)***	(10.49)***		(8.34)***	(9.22)***
Dummy_3rd lowest_price	0.152	0.162	3rd lowest* Before SOX	0.142	0.161
	(6.38)***	(6.55)***		(5.17)***	(5.65)***
Dummy_4th lowest_price	0.059	0.069	4th lowest* Before SOX	0.041	0.05
	(2.37)**	(2.64)***		(1.38)	(1.63)
Dummy_5th lowest_price	0.04	0.053	5th lowest * Before SOX	0.025	0.038
	(1.60)	(2.04)**		(0.85)	(1.25)
Constant	-3.051	-3.059	Lowest * After SOX	0.392	0.429
	(601.36)***	(563.24)***		(10.40)***	(11.14)***
Observations	571830	519328	2nd lowest* After SOX	0.217	0.241
				(5.39)***	(5.81)***
			3rd lowest* After SOX	0.172	0.163
				(4.17)***	(3.79)***
			4th lowest* After SOX	0.098	0.107
				(2.40)**	(2.54)**
			5th lowest * After SOX	0.071	0.082
				(1.70)*	(1.91)*
			Constant	-3.051	-3.059
				(601.36)***	(563.24)***
			Observations	571830	519328

TABLE 5: ESTIMATING THE INCIDENCE OF OPPORTUNISTIC TIMING

The table shows an estimate of the number of grant-date prices that should fall on the lowest price of the month, second lowest, third lowest as well as the three lowest, if the grant date was randomly selected. We estimate the probability of observing a grant event on a particular price-rank day by counting the number of days in the month where the price is at a given price-rank and divide it by the total number of trading days of the stock in that month. The table compares the estimate to the actual number of grant events that fall into these ranks. We also show the average ratio of the exercise price to the median stock price in the month. Grant events Before SOX are ones whose grant event date is before September 1, 2002, and grants after SOX are ones whose grant event date is on or after September 1, 2002. The sample consists of 26,209 option grant events between 1996-2005 after excluding events that are given on the annual meeting date (+/-1 day).

	Lucky (lowest)	2nd Lowest	3rd lowest	Three lowest
Before SOX (Observations 15709)				
Actual Number of Grant Events	1707	1386	1350	4443
Expected Number of Grant Events	1098	1236	1315	3649
Actual-Expected	609	150	35	794
(Actual-Expected)/Expected	55.5%	12.1%	2.7%	21.8%
(Actual-Expected)/Actual	35.7%	10.8%	2.6%	17.9%
(Actual-Expected)/Total	3.5%	0.9%	0.2%	4.5%
Exercise Price/Median Stock Price	0.88	0.92	0.95	0.91
After SOX (Observations 10500)				
Actual Number of Grant Events	766	672	646	2084
Expected Number of Grant Events	571	591	607	1769
Actual-Expected	195	81	39	315
(Actual-Expected)/Expected	34.1%	13.6%	6.4%	17.8%
(Actual-Expected)/Actual	25.4%	12.0%	6.0%	15.1%
(Actual-Expected)/Total	1.7%	0.7%	0.3%	2.8%
Exercise Price/Median Stock Price	0.91	0.93	0.94	0.93
Overall (Observations 26209)				
Actual Number of Grant Events	2473	2058	1996	6527
Expected Number of Grant Events	1669	1827	1922	5418
Actual-Expected	804	231	74	1109
(Actual-Expected)/Expected	48.2%	12.6%	3.9%	20.5%
(Actual-Expected)/Actual	32.5%	11.2%	3.7%	17.0%
(Actual-Expected)/Total	2.8%	0.8%	0.3%	3.9%
Exercise Price/Median Stock Price	0.89	0.93	0.94	0.92

TABLE 6: ESTIMATING THE INCIDENCE OF OUTSIDE DIRECTORS AND FIRMS ASSOCIATED WITH OPPORTUNISTIC TIMING

The sample consists of 26,209 option grant events between 1996-2005 after excluding events that are given on the annual meeting date (+/-1 day) to 30,483 different outside directors in 6,441 different firms. The table shows the number of outside directors (firms) with one to five-and-more grants (grant events) in the sample. The third column shows the number of outside directors who receive at least one grant at the lowest price of the month (lucky). The forth column shows the expected number of outside directors who receive at least one grant at the lowest price of the month. This number is computed in the following way: For outside directors with only one grant, it is the product of 13,140 (outside directors with only one grant) and the probability of observing the lowest price in the month. This probability is equal to the number of days where the price was the lowest price of the month divided by the total number of trading days in that month. For outside directors with more than one grant, the expected number of outside directors that receive at least one grant at the lowest price is equal to one minus the probability of having each grant not being lucky. This is one minus the product of the probabilities that each individual grant is at the lowest price. A similar calculation is used to estimate the expected number of firms that have at least one grant event at the lowest price of the month.

Distribution of Grants by Outside Directors

# Grants	Outside Directors	Actual # Outside Directors At Lowest	Expected # Outside Directors at Lowest	Actual - Expected	(Actual - Expected) /Expected	(Actual - Expected) / Actual	(Actual - Expected) / Total
1	13140	1243	927	316	34.1%	25.4%	2.4%
2	6670	1113	829	284	34.3%	25.5%	4.3%
3	3947	918	690	228	33.1%	24.9%	5.8%
4	2430	701	535	166	31.0%	23.7%	6.8%
5 and more	4296	1920	1525	395	25.9%	20.6%	9.2%
All	30483	5895	4506	1389	30.8%	23.6%	4.6%

Distribution of Grant Events by Firm

# Grant Events	Firms	Actual # Firms At Lowest	Expected # Firms at Lowest	Actual - Expected	(Actual - Expected) /Expected	(Actual - Expected) / Actual	(Actual - Expected) / Total
1	1722	207	141	66	47%	32%	3.8%
2	1146	213	153	60	39%	28%	5.2%
3	844	224	161	63	39%	28%	7.5%
4	616	204	143	61	43%	30%	10.0%
5 and more	2113	1004	797	207	26%	21%	9.8%
All	6441	1852	1395	457	33%	25%	7.1%

TABLE 7: BACKDATING VS. SPRING-LOADING

The table shows regression results where the dependent variable is a dummy for whether the firm had a grant event on a particular date. The sample consists only of months in which the difference between the lowest price and the second-lowest price is less than 1%. The sample for the first and third column regressions consists of all dates during the month where the options were granted. The sample for the second and fourth columns excludes grant events on the annual meeting date (+/- 1 day). For columns three and four, the sample is limited to the dates in which the lowest price (lucky) or the second lowest price of the month prevails. Dummy – lowest and Dummy – second lowest equal one if the price is the lowest price of the month and second-lowest price of the month and zero otherwise. Panel B shows coefficients of similar regressions but using the full sample (column 1) or excluding grant events on the annual meeting day (+/-1 day). The lowest price of the month dummy (lucky) is interacted with a dummy equal to one if the grant event was reported to the SEC in the same calendar month and a dummy equal to one if it was reported in the next or following months. The third column uses only post-SOX grant events excluding events on the annual meeting (+/- 1 day). The numbers in parentheses are the t-statistics based upon robust standard errors and adjusted for clustering at the firm level. The p-value of an F-test is reported in Panel B to test the equality of the lucky*reported the same month and lucky*reported next month coefficients.

Panel A: Lowest vs Second Lowest

Intercept	-3.014	***	-3.020	***	-2.851	***	-2.811	***
	(702.79)		(642.38)		(77.84)		(73.93)	
Lowest price of the month	0.326	***	0.384	***	0.163	***	0.175	***
	(8.34)		(9.48)		(3.09)		(3.20)	
Second-lowest price of the month	0.163	***	0.209	***				
	(4.15)		(5.09)					
Observations	229161		202019		27019		24039	
Annual Meeting Events	Included		Excluded		Included		Excluded	
Sample	All				Only Lowest and Second Lowest			

Panel B: Reported Same Month vs Reported Next Month

Intercept	-3.013	***	-3.016	***	-3.005	***
	(1291.84)		(1201.75)		(952.24)	
Lucky*Reported same month	0.302	***	0.335	***	0.309	***
	(7.30)		(7.90)		(6.56)	
Lucky*Reported next month	0.541	***	0.591	***	0.540	***
	(19.88)		(21.21)		(7.99)	
Observations	571830		519328		208402	
p-value of F-test	0.000		0.000		0.000	
Annual Meeting Events	Included		Excluded		Excluded	

TABLE 8: ABNORMAL STOCK RETURNS BEFORE AND AFTER GRANT EVENTS

The table shows average abnormal returns from 10 days prior to 10 days after option grants to outside directors between 1/1/1996 and 12/31/2005. The return benchmark is the three-factor model Fama French (1993), where the estimation period is the 255 days ending 50 days before the grant date. The sample consists of 26,209 grant events, (which already excludes scheduled grants, consisting of firms that had their grant date within 1 day of the annual meeting). Out of this sample, additional 2,620 grants are excluded because they do not have sufficient return data for the model estimates. Pre SOX grants are grants that were awarded before September 1st 2002. Post SOX grants are grants that were awarded on or after September 1st 2002.

	Days	N	Mean cumulative abnormal returns	p-value
All Events	(-10,0)	23589	-0.58%	0.000
	(+1,+10)		1.20%	0.000
Events Pre Sox	(-10,0)	13861	-1.07%	0.000
	(+1,+10)		1.43%	0.000
Events Post Sox	(-10,0)	9728	-0.17%	0.000
	(+1,+10)		0.49%	0.000

TABLE 9: UNIVARIATE STATISTICS

The sample consists of 25,888 option grant events between 1996-2005 after excluding events that are given on the annual meeting date (+/-1 day) or for which necessary Compustat or CRSP data are missing. The sample is smaller for grant events where we also use IRRC or ExecuComp data. Panel A shows the number of observations with available data, the unconditional mean and standard deviation. The last three columns present the mean of the subsample of lucky grant events, not lucky grant events, and the significance of the difference between these two means indicated by ***, **, for 1% and 5%, respectively. Lucky grant events are those given at the lowest price of the month; not lucky are all other grant events. Panel B uses the full sample of 28,764 grant events and shows the fraction of lucky grant events for different groups. Market capitalization is the market value of equity, calculated at the end of the month in which the option was granted. Relative size is the market cap of equity divided by the median market cap of firms in the sample for that year. Median-Minimum Price Difference is the natural log of the gross return to shareholders from the lowest price of the month in which the options were granted to the median price of that month. New Economy are firms that belong to a new economy industry, as defined in Murphy (2003). Grants Before SOX are ones whose grant date is before September 1, 2002, and grants after SOX are ones whose grant date is on or after September 1, 2002. Previously Lucky is a dummy equal to one if the previous grant event of the firm was lucky. At least 4 Directors get Grant in Event is a dummy equal to one if at least four directors receive a grant in the grant event, and zero otherwise. Not Independent Board dum is a dummy equal to one if the Board consists of a majority of independent directors. Number of Employee Directors is the number of Directors that are also employees as identified by ExecuComp. Boardsize is from IRRC. Busy Board dum is equal to one if the average number of other directorships the board members hold is bigger than two. CEO tenure is from ExecuComp. CEOChair dum is a dummy equal to one if the CEO is also Chairman. Founder CEO is a dummy equal to one if the CEO is classified as the founder of the company. We call a CEO the founder if the executive became CEO at least five years before the firm went public. We use the first listing year in CRSP as a proxy for the year in which the firm went public. Insider ownership is the stock ownership of insiders based on information in ExecuComp. High Entrenchment Index is a dummy equal to one if the Entrenchment Index is >2 and zero otherwise. The Entrenchment Index is based on Bebchuk et al. (2004) and takes on values between 0 and 6. For years where the IRRC data is not updated, we use lagged values. Fractional ownership by public pension funds is the fraction of ownership by public pension funds as reported by Thomson. Independent committee dummies are equal to one if the committees are entirely staffed by independent board members. Data is from IRRC, available after 1998. The last four rows show the fraction of events where other executives also receive a grant on the same date.

PANEL A: DIFFERENCES BETWEEN LUCKY AND NOT LUCKY GRANT EVENTS

Variables	Obs	Mean	Stddev	Lucky	Not Lucky	Sign of Diff
Relative Size	25888	-0.068	1.932	-0.397	-0.034	***
Median-Minimum Price Difference	25888	0.109	0.094	0.120	0.107	***
Neweconomy	25888	0.158	0.365	0.161	0.158	
SOX	25888	0.401	0.490	0.311	0.411	***
Previously Lucky	19796	0.093	0.290	0.143	0.088	***
At least 4 Directors get Grant in Event	25888	0.351	0.477	0.320	0.354	***
Not Independent Board dum	4673	0.245	0.430	0.290	0.241	**
Number of Employee Directors	6341	0.438	0.810	0.487	0.433	
Boardsize	4681	9.467	2.951	9.168	9.492	**
Busy Board dum	4868	0.045	0.208	0.032	0.046	
CEO Tenure	6071	6.395	6.770	7.055	6.337	**
CEOChair dum	4868	0.689	0.463	0.696	0.689	
Founder CEO	6341	0.138	0.345	0.161	0.136	
Insider Ownership	6196	0.039	0.071	0.052	0.037	***
High Entrenchment Index	4957	0.444	0.497	0.508	0.438	***
Fractional Ownership by Public Pension Funds	4622	2.721	1.889	2.706	2.722	
Indep Compensation Com dum	4681	0.872	0.334	0.868	0.873	
Indep Nominating Com dum	4681	0.803	0.398	0.801	0.803	
Indep Audit Com dum	4681	0.847	0.360	0.846	0.847	
CEO also gets Grant	25888	0.140	0.347	0.207	0.133	***
CEO but no other Exec gets Grant	25888	0.016	0.127	0.021	0.016	*
Other Exec but not CEO gets Grant	25888	0.150	0.357	0.190	0.146	***
CEO and other Exec get Grant	25888	0.124	0.329	0.186	0.117	***

TABLE 9 (continued)

PANEL B: DIFFERENCES AMONG CATEGORIES OF GRANT EVENTS

Variable	Observations	% At Lowest Price of Months (Lucky)		p-value of Difference	Observations	Variable
Company size below median	14218	10.5%	7.6%	0.00 ***	14546	Company size above median
High (top quartile) difference between lowest and median price	7191	10.7%	8.5%	0.00 ***	7192	Low (bottom quartile) difference between lowest and median price
New Economy	4342	9.4%	8.9%	0.30	24204	Not new economy
Before SOX	17512	10.2%	7.1%	0.00 ***	11252	After SOX
Previous Grant Event Lucky	1977	13.3%	7.8%	0.00 ***	20210	Previous Grant Event Not Lucky
Less than 4 Directors get a Grant in Event	18108	9.6%	8.0%	0.00 ***	10656	At least 4 Directors get a Grant in Event
Not Independent Board	1626	7.8%	6.2%	0.02 **	5252	Independent Board
Employee Directors on Board	1787	8.3%	8.0%	0.71	4563	No Employee Directors on Board
Boardsize <7	582	9.6%	7.4%	0.05 **	4100	Boardsize>6
Not Busy Board	4648	7.8%	5.4%	0.20	221	Busy Board
CEO tenure >4	3170	7.5%	8.7%	0.08 *	2910	CEO tenure<5
CEO is Chair	3355	7.7%	7.5%	0.82	1514	CEO is not Chair
CEO is Founder	874	9.4%	7.9%	0.13	5476	CEO is not Founder
Insider Ownership >4%	1420	12.0%	6.9%	0.00 ***	4784	Insider Ownership<=4%
High Entrenchment Index (>2)	2708	8.2%	6.3%	0.00 ***	3197	Low Entrenchment Index (<3)
Not Independent Compensation Com	598	7.9%	7.6%	0.83	4084	Independent Compensation Com
Not Independent Nominating Com	921	7.7%	7.6%	0.94	3761	Independent Nominating Com
Not Independent Audit Com	718	7.7%	7.6%	0.99	3964	Independent Audit Com
Public Pension Fund Ownership Low	1419	9.5%	7.7%	0.04**	3207	Public Pension Fund Ownership High (>2%)
CEO also gets a Grant	3815	13.7%	11.4%	0.00 ***	4266	An Exec other than CEO also gets a Grant
Any Executive also gets a Grant	8081	12.5%	7.6%	0.00 ***	20683	Directors alone receive grants
CEO gets a lucky grant this or last year – but no grant on event day	2035	7.9%	6.9%	0.06 *	9401	CEO gets a grant that is not lucky this or last year – but no grant on event day

TABLE 10: THE DETERMINANTS OF BEING LUCKY – A FIRST LOOK

The dependent variable is a dummy variable which is equal to one if the grant event was on the lowest price of the month (lucky) and zero otherwise. We exclude grant events that take place on the annual meeting day (+/- 1 day). The first two regressions are pooled panel regressions. Regressions three and four are firm fixed effects regressions. The last two regressions are outside director fixed effects regressions and the sample is based on all grants except for those taking place on the annual meeting day (+/- 1 day). Relative size is the natural log of the ratio between the market cap of the firm at the end of the year and the median market capitalization of the firms in the sample for that year. Median-Minimum Price Difference is the natural log of the gross return to shareholders from the lowest price of the month in which the options were granted to the median price of that month. This return is winzorized at the 1 and 99 percentile. Market component of the Median-Minimum Price Difference is the market return from the minimum-price day to the median-price day. Firm-specific component of the Median-Minimum Price Difference is the total minus the market return from the minimum-price day to the median-price day. New Economy firms are firms with SIC codes as defined in Murphy (2003). This variable is omitted in the firm and director fixed effect regression because only very few firms change the industry. Grants Before SOX are ones whose grant date is before September 1, 2002, and grants After SOX are ones whose grant date is on or after September 1, 2002. We also control for the fraction of days in the month that have the lowest price (not shown). The numbers in parentheses are the t-statistics base on robust standard errors adjusted for clustering at the firm level (except for the fixed effect regressions). *, **, *** indicate significance at the 10%, 5%, and 1% levels respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Pooled Regressions		Firm Fixed Effects		Outside Director Fixed Effect	
Relative size	-0.006	-0.010	0.086**	0.084**	0.051***	0.049***
	(0.48)	(0.76)	(2.19)	(2.14)	(3.01)	(2.91)
New Economy	0.000	0.000				
	(0.00)	(0.01)				
Median-Minimum Price Difference	1.796***		1.678***		1.783***	
	(7.89)		(5.60)		(9.08)	
Market Component of the Median-Minimum Price Difference		3.587***		3.111***		2.333***
		(4.70)		(3.32)		(3.88)
Firm-specific Component of the Median-Minimum Price Difference		1.697***		1.597***		1.747***
		(7.28)		(5.24)		(8.74)
SOX	-0.198***	-0.196***	-0.265***	-0.263***	-0.178***	-0.177***
	(4.12)	(4.08)	(4.07)	(4.03)	(4.25)	(4.24)
Intercept	-1.419***	-1.414***				
	(6.95)	(6.94)				
Observations	25888	25888	25888	25888	79576	79576

TABLE 11: GRANT EVENT PARTICIPANTS AND OUTSIDE DIRECTOR LUCK

PANEL A: OUTSIDE DIRECTOR LUCK AND EXECUTIVE PARTICIPATION

The dependent variable is a dummy equal to one if the grant was given at the lowest price of the month. The regressions are firm fixed effects logit regressions. The sample consists of the 25,888 events where outside directors get a grant but it excludes grant events that are on the day (+/- 1 day) of the annual meeting. **, *** indicate significance at the 5%, 1% level, respectively. T-statistics are shown underneath the coefficients in parentheses. CEO But Not Other Exec Get Grant is a dummy equal to one if the CEO but no other executive also received a grant on the same day. CEO and Other Exec Get Grant, and Other Exec But Not CEO Get Grant are defined accordingly. Number of Outside Directors per Grant Event is the number of outside Directors that receive a grant in the grant event. At least 4 Outside Directors Get Grant In Event is a dummy equal to one if at least 4 outside Directors receive a grant in the grant event.

	(1)	(2)	(3)
CEO But Not Other Execs Get Grant	0.645	0.645	0.644
	(2.99)***	(2.99)***	(2.98)***
CEO And Other Execs Get Grant	0.632	0.657	0.647
	(7.48)***	(7.67)***	(7.58)***
Other Execs But Not CEO Get Grant	0.336	0.345	0.340
	(4.26)***	(4.37)***	(4.31)***
Number of Outside Directors per Grant Event		-0.024	
		(1.79)*	
At Least 4 Outside Directors Get Grant in Event			-0.079
			(2.24)**
SOX	-0.240	-0.229	-0.232
	(3.66)***	(3.49)***	(3.53)***
Relative size	0.079	0.080	0.079
	(2.01)**	(2.02)**	(2.01)**
Median-Minimum Price Difference	1.573	1.579	1.576
	(5.21)***	(5.22)***	(5.22)***
Observations	25888	25888	25888

TABLE 11: GRANT EVENT PARTICIPANTS AND OUTSIDE DIRECTOR LUCK (continued)

PANEL B: OUTSIDE DIRECTOR LUCK WITHOUT EXECUTIVE PARTICIPATION

For each firm that granted options, the sample consists of all dates during the month where the option was granted. We run logit regressions where the dependent variable is a dummy variable, which equals one if the firm granted an option on that particular date and zero otherwise. Grants Before SOX are ones whose grant date is before September 1, 2002, and grants after SOX are ones whose grant date is on or after September 1, 2002. Lucky is a dummy equal to one if the grant event day was on the day with the lowest price of the month. *** represents significance at the 1% level. The numbers in parentheses are the t-statistics of the coefficients, based on robust standard errors and adjusted for clustering at the firm level. The sample excludes months where the grant event falls on the day (+/-1 day) of the annual meeting. The first two regressions also exclude grant event months where other executives receive a grant on the same day as the outside directors.

	(1)	(2)	(3)
Lucky	0.431		
	(16.47)***		
Lucky *Before SOX		0.485	
		(15.63)***	
Lucky * After SOX		0.322	
		(7.78)***	
Lucky * Directors Alone in Grant Event			0.357
			(12.51)***
Lucky * Directors With Non-CEO Execs			0.359
			(6.35)***
Lucky * Directors with CEO			0.598
			(10.61)***
Constant	-3.009	-3.009	-3.016
	(1195.46)***	(1195.46)***	(1201.75)***
Observations	454649	454649	519328

TABLE 11: GRANT EVENT PARTICIPANTS AND OUTSIDE DIRECTOR LUCK (continued)

PANEL C: OUTSIDE DIRECTOR LUCK AND CEO LUCK

The sample consists of grant events excluding those where the date was +/-1 day of the annual meeting and excluding grant events where the CEO and/or other executives received a grant. The dependent variable is equal to one if the grant event was lucky. The coefficients of logit regressions are shown, using a pooled regression with clustering of errors at the firm level (1) and a firm fixed effect regression (2). T-statistics are underneath the coefficient estimates. ***, **, * indicate significance at the 1%, 5%, 10% level. Lucky CEO this or last Year is a dummy equal to one if the CEO received at least one lucky grant in the fiscal year of the event or the year before (but did not get a grant on the same day as the outside Directors).

	(1)	(2)
Lucky CEO this or last Year	0.286	0.215
	(2.90)***	(1.69)*
Relative size	-0.024	0.000
	(1.41)	(0.00)
Median-Minimum Price Difference	1.496	1.657
	(4.92)***	(4.12)***
SOX	-0.061	-0.065
	(1.04)	(0.77)
Constant	-1.889	
	(6.63)**	
Observations	18376	18376

TABLE 12: CORPORATE GOVERNANCE AND OUTSIDE DIRECTOR LUCK

The table shows logit regressions where the dependent variable is one if the grant was lucky and zero otherwise. The sample size is reduced because data from ExecuComp and IRRC are required. Not Independent Board is a dummy equal to one if the board does not consist of a majority of independent directors as identified by IRRC. Boardsize is the number of directors a company has from IRRC. Number of Exec Directors is the number of directors that are executives, and is derived from IRRC. CEO tenure is from ExecuComp. CEOChair dum is equal to one if the CEO is also the Chairman. Insider Ownership is from ExecuComp by adding up all stock and option ownership if the top five executives for a given year. Busy Board dum is equal to one if the average director of the firm has two or more directorships. Founder CEO is a dummy equal to one if the current CEO is the founder. A CEO is designated to be the founder if the CEO began service as the CEO at least three years prior to the first listing of the firm on CRSP. High Entrenchment Index is a dummy equal to one if the Entrenchment Index of the firm is three or more and zero otherwise. Entrenchment Index consists of six anti-takeover provisions and is computed according to Bebchuk, Cohen and Ferrell (2004). Fractional ownership by public pension funds is from the 13f filings. Independent audit, compensation and nomination committee, are dummies equal to one if all of the committee members are independent. Corporate Governance Com is a dummy equal to one if the firm has a Corporate Governance committee and zero otherwise.

	(1)	(2)	(3)	(4)
Not Independent Board	0.206	0.285	0.288	0.307
	(2.05)**	(2.61)***	(2.56)**	(2.68)***
Numb of Exec Directors	0.117	0.149	0.144	0.137
	(1.89)*	(2.31)**	(2.01)**	(1.93)*
Board size	-0.039	-0.068	-0.060	-0.057
	(1.77)*	(2.55)**	(2.02)**	(1.93)*
Busy Board dum	-0.399	-0.397	-0.258	-0.239
	(1.30)	(1.28)	(0.82)	(0.76)
CEO tenure	0.016	0.015	0.016	0.016
	(2.05)**	(1.73)*	(1.68)*	(1.68)*
CEOChair dum	0.034	0.039	0.053	0.049
	(0.29)	(0.29)	(0.36)	(0.33)
Founder CEO	-0.139	-0.046	-0.022	-0.034
	(0.88)	(0.25)	(0.11)	(0.17)
Insider Ownership	6.231	7.192	8.518	8.433
	(2.79)***	(2.99)***	(3.03)***	(3.00)***
Insider Ownership2	-19.806	-20.873	-24.065	-23.998
	(2.67)***	(2.69)***	(2.65)***	(2.63)***
High Entrenchment Index		0.478	0.416	0.418
		(4.08)***	(3.14)***	(3.15)***
Fractional Ownership by			-0.053	-0.054
Public Pension Funds			(1.74)*	(1.76)*
Independent Compensation Com dum				0.138
				(0.67)
Independent Nominating Com dum				0.018
				(0.11)
Independent Audit Com dum				-0.019
				(0.10)
Corporate Governance Com dum				-0.267
				(1.34)
Relative size	0.038	0.054	0.043	0.041
	(1.01)	(1.27)	(0.93)	(0.88)
Median-Minimum Price Difference	2.256	2.682	2.278	2.274
	(3.58)***	(4.18)***	(3.24)***	(3.49)***
SOX	0.068	0.010	0.056	0.086
	(0.60)	(0.08)	(0.37)	(0.56)
Constant	-3.301	-3.296	-3.213	-3.310
	(11.80)***	(10.12)***	(8.89)***	(8.27)***
Observations	6418	5895	4581	4581

TABLE 13: SERIAL LUCK

The table shows logit regressions where the dependent variable is one if the grant was lucky and zero otherwise. The sample size is reduced because data from ExecuComp and IRRC are required. Previous Grant Event Lucky is equal to one if the previous grant was given at the lowest price. Previous Grant not Lucky is equal to one if the previous grant was given at any other price than the lowest price of the month. The hold out group is those events without a prior grant. All other variables are described in Table 12.

	(1)	(2)	(3)
Previous Grant Event Lucky	0.289	0.325	0.397
	(3.55)***	(3.89)***	(1.77)*
Previous Grant Event Not Lucky	-0.218	-0.151	-0.196
	(4.37)***	(2.90)***	(1.23)
Not Independent Board			0.308
			(2.71)***
Numb of Exec Directors			0.139
			(2.02)**
Busy Board dum			-0.261
			(0.84)
Boardsize			-0.058
			(1.99)**
CEO tenure			0.015
			(1.70)*
CEOChair dum			0.031
			(0.22)
Founder CEO			-0.036
			(0.19)
Insider Ownership			8.129
			(3.00)***
Insider Ownership2			-22.832
			(2.60)***
High Entrenchment Index			0.409
			(3.18)***
Fractional Ownership by			-0.055
Public Pension Funds			(1.75)*
Independent Audit Com dum			-0.020
			(0.11)
Independent Compensation Com dum			0.123
			(0.62)
Independent Nominating Com dum			0.018
			(0.11)
Relative size		-0.023	0.041
		(1.77)*	(0.91)
Median-Minimum Price Difference		1.581	2.241
		(6.99)***	(3.21)***
SOX		-0.185	0.077
		(3.82)***	(0.51)
Constant	-2.691	-2.858	-3.170
	(50.22)***	(43.77)***	(7.51)***
Observations	25888	25888	4581

TABLE 14: OUTSIDE DIRECTOR LUCK AROUND THE ECONOMY

The table shows statistics by industries. Industries are defined as the 12 Fama-French industries. For each industry the table reports, the number of firms, the number of grant events, the fraction of grant events at the lowest price (lucky), and the fraction of firms that unexpectedly granted options at the lowest price of the month. For firms with only one grant event the estimated number of grant events is the product of the number of firms with only one grant event and the probability of observing the lowest price in the month. This probability is equal to the number of days where the price was the lowest price of the month divided by the total number of trading days in that month. For firms with more than one grant event, the expected number of firms that have at least one grant event at the lowest price is equal to one minus the probability of having each grant event not being lucky. The latter is one minus the product of the probabilities that each individual grant event is at the lowest price of the month. The last column contains the regression coefficients on industry dummies. The holdout industry is the consumer Non-Durables industry (The first Fama-French Industry). The regression run corresponds to the first regression in Table 10 where the Fama-French industry dummies are added. * indicates significance at the 10% level.

12 Fama-French Industries	#Firms in Industry	#Grant Events in Industry	%Grant Events at Lowest (Lucky)	%Firm with Opportunistically Timed Grants	Regression Coefficients
Shops: Wholesale, Retail, and Some Services (Laundries, Repair Shops)	656	2923	10.4%	10%	0.162
Consumer Durables: Cars, TV's, Furniture, Household Appliances	144	623	10.3%	6%	0.154
Other: Mines, Constr, BldMt, Trans, Hotels, Bus Serv, Entertainment	809	3376	9.7%	7%	0.045
Business Equipment: Computers, Software, and Electronic Equipment	1593	7318	9.3%	9%	0.036
Consumer Non-Durables: Food, Tobacco, Textiles, Apparel, Leather, Toys	290	1270	9.1%	5%	
Health: Healthcare, Medical Equipment, and Drugs	789	4106	8.8%	7%	0.000
Telecom: Telephone and Television Transmission	207	821	8.4%	7%	-0.030
Money: Finance	1155	4281	8.4%	4%	-0.022
Manufacturing: Machinery, Trucks, Planes, Off Furn, Paper, Com Printing	557	2443	8.1%	4%	-0.086
Energy: Oil, Gas, and Coal Extraction and Products	189	743	7.5%	4%	-0.127
Chem: Chemicals and Allied Products	112	517	6.0%	2%	-0.342*
Utilities	76	343	4.7%	0%	-0.476*

TABLE 15: ESTIMATING THE INCIDENCE OF SUPER-LUCKY GRANTS DUE TO OPPORTUNISTIC TIMING - QUARTER

The table reports the actual and expected number of grant events on a quarterly basis. The expected number of grant events is computed as the number of days with a certain price rank in a quarter where a grant was given, divided by the number of trading days in that quarter where the stock actually traded. The reported number is the sum of this ratio by rank. Exercise Price/Median Stock Price is the average of the ratio of the exercise price of the option in a given rank to the median stock price in the quarter of the grant. The sample consists of 26,175 grant events to outside directors between 1996-2005, and is taken from Thomson Financial's insider-transaction database. The sample size is reduced because we require at least one trading day in each of the months of the quarter. Grants Before SOX and Grants After SOX are grants whose strike date is before and on or after September 1st, 2002 respectively. Quarters are defined by calendar time. Panel B shows the number of firms with one to five-and-more grant events in the sample. The fourth column shows the expected number of firms who receive at least one grant at the lowest price of the quarter (super lucky). This number is computed in the following way: For firms with only one grant event, it is the product of the number of firms with only one grant event and the probability of observing the lowest price in the quarter. This probability is equal to the number of days where the price was the lowest price of the quarter divided by the total number of trading days in that quarter. For firms with more than one grant event, the expected number of firms that give at least one grant at the lowest price of the quarter (super lucky) is equal to one minus the probability of having each grant not being super lucky. The latter is one minus the product of the probabilities that each individual grant event is at the lowest price of the quarter.

Panel A: Super-Lucky Grant Event Distribution

	Before SOX			After SOX			Overall		
Total Number of Grant Events	15692			10483			26175		
Price rank of grant date in the price distribution of the grant month:	Lowest	2nd lowest	3rd lowest	Lowest	2nd lowest	3rd lowest	Lowest	2nd lowest	3rd Lowest
Actual Number of Grant Events	727	584	566	267	218	245	994	802	811
Actual/Total Grant Events	4.6%	3.7%	3.6%	2.5%	2.1%	2.3%	3.8%	3.1%	3.1%
Expected Number of Grant Events	385	460	519	196	206	213	581	666	732
Actual-Expected	342	124	47	71	12	32	413	136	79
(Actual-Expected)/Actual	47.0%	21.2%	8.3%	26.7%	5.6%	13.0%	41.5%	16.9%	9.8%
Exercise Price/Median Stock Price	0.79	0.84	0.85	0.84	0.86	0.87	0.80	0.84	0.86

Panel B: Distribution of Grant Events by Firm

# Grant Events	Firms	Actual # Firms at Lowest Price	Expected # of Lucky Grant Events	Actual – Expected	(Actual - Expected) / Expected	(Actual - Expected) / Actual	(Actual - Expected) / Total
1	1723	75	51	24	46.3%	31.6%	1.4%
2	1147	87	59	28	48.0%	32.4%	2.4%
3	844	103	61	42	70.2%	41.3%	5.0%
4	616	83	53	30	56.7%	36.2%	4.9%
>4	2108	491	319	172	53.9%	35.0%	8.2%
All	6438	839	543	296	54.6%	35.3%	4.6%

TABLE 16: ESTIMATING THE INCIDENCE OF SUPER-LUCKY GRANTS DUE TO OPPORTUNISTIC TIMING - YEAR

The table reports the actual and expected number of grant events on an annual basis. The expected number of grant events is computed as the number of days with a certain price rank in a year where a grant was given divided by the number of trading days in that year where the stock actually traded. The reported number is the sum of this ratio by rank. Exercise Price/Median Stock Price is the average of the ratio of the exercise price of the option in a given rank to the median stock price in the year of the grant. The sample consists of 26,025 grant events to outside directors between 1996-2005, and is taken from Thomson Financial's insider-transaction database. The sample size is reduced because we require at least one trading day in each of the months of the year. Grants Before SOX and Grants After Sox are grants whose strike date is before and on or after September 1st, 2002 respectively. Years are defined by calendar time. Panel B shows the number of firms with one to five-and-more grant events in the sample. The fourth column shows the expected number of firms who receive at least one grant at the lowest price of the year (super lucky – year). This number is computed in the following way: For firms with only one grant event, it is the product of the number of firms with only one grant event and the probability of observing the lowest price in the year. This probability is equal to the number of days where the price was the lowest price of the year (super lucky – year) divided by the total number of trading days in that year. For firms with more than one grant event, the expected number of firms that give at least one grant at the lowest price of the year (super lucky-year) is equal to one minus the probability of having each grant not being super lucky (year). The latter is one minus the product of the probabilities that each individual grant event is at the lowest price of the year.

Panel A: Super-Lucky Grant Event Distribution (Year)

	Before SOX			After SOX			Overall		
Total Number of Grant Events	15622			10403			26025		
Price rank of grant date in the price distribution of the grant month:	Lowest	2nd lowest	3rd lowest	Lowest	2nd lowest	3rd lowest	Lowest	2nd lowest	3rd Lowest
Actual Number of Grant Events	165	178	195	50	59	83	215	237	278
Actual/Total Grant Events	1.1%	1.1%	1.2%	0.5%	0.6%	0.8%	0.8%	0.9%	1.1%
Expected Number of Grant Events	62	111	138	40	53	57	102	164	195
Actual-Expected	103	67	57	10	6	26	113	73	83
(Actual-Expected)/Actual	62.5%	37.6%	29.1%	19.4%	9.6%	31.3%	52.5%	30.6%	29.8%
Exercise Price/Median Stock Price	0.59	0.64	0.65	0.68	0.70	0.71	0.61	0.66	0.67

Panel B: Distribution of Grant Events by Firm

# Grant Events	Firms	Actual # Firms at Lowest Price	Expected # of Lucky Grant Events	Actual – Expected	(Actual - Expected) / Expected	(Actual - Expected) / Actual	(Actual - Expected) / Total
1	1705	12	7	5	64.2%	39.1%	0.3%
2	1143	14	9	5	64.2%	39.1%	0.5%
3	844	21	10	11	118.8%	54.3%	1.4%
4	616	18	9	9	102.6%	50.7%	1.5%
>4	2113	132	66	66	99.8%	50.0%	3.1%
All	6421	197	100	97	96.3%	49.1%	1.5%