Street Earnings and Board Independence*

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Abstract

We examine the characteristics of Street Earnings and board independence to understand how board structure shapes disclosure. We find that when boards contain fewer independent directors, exclusions from Street Earnings (1) have more predictive ability for future earnings, suggesting that the excluded expenses are less transitory, (2) are increasingly likely to occur in quarters when Street Earnings exceed analyst expectations but GAAP earnings do not, indicating that managers are more likely to use Street Earnings to meet the analyst forecast, (3) have a significantly stronger association with subsequent returns, indicating that the excluded expenses are less transparent as investors are slow to price their future earnings implications, and (4) are more strongly related to the intensity of insider trading activity. We obtain these results despite tests demonstrating that analysts reverse more management exclusions as boards become less independent. Overall, our results suggest that board independence is associated with the quality of voluntary earnings-related disclosure.

Keywords: Street Earnings; Board Independence; Voluntary Disclosure; Earnings Quality.

JEL Classification: M4

1. Introduction

This paper explores the relation between board structure and discretionary disclosure by examining how the nature and use of Street Earnings varies with board independence. Street Earnings is a quarterly earnings measure issued by managers and adjusted by analysts as an alternative to GAAP earnings. While Street Earnings are more valuation-relevant than GAAP earnings (Bradshaw and Sloan, 2002; Bhattacharya, Black, Christensen and Larson, 2003), the calculation of Street Earnings is not governed by specific rules nor are they audited. Thus, their computation is discretionary and susceptible to opportunistic choices by managers (Doyle, Lundholm and Soliman, 2003). Prior research finds that board independence is linked to both management actions and with the quality of the financial information (e.g., Dechow, Sloan and Sweeney, 1996; Klein, 2002a). Because boards of directors review earnings releases, we explore whether stronger board oversight can curb the opportunistic use of this form of disclosure.

Our main test examining the link between Street Exclusions and board structure is grounded in the notion that Street Earnings are designed to provide investors with a measure of earnings from continuing operations that is useful for valuation (Frankel and Roychowdhury, 2005). Therefore, expenses excluded from Street Earnings (hereafter Street Exclusions) should represent transitory rather than permanent items, an assumption maintained throughout the paper. We estimate the future earnings implications of Street Exclusions by estimating regressions of future GAAP earnings on current Street Earnings and Street Exclusions.[1] We define "low quality" exclusions as those that have the highest predictive power for future earnings, and then

[1] We study the correlation between current expenses and future expenses rather than the correlation between current expenses and future cash flows to isolate the permanence of earnings components. Large, one-time current expenses are expected to be correlated with future cash flows to the extent that they recognize cash outflows expected to arise from future transactions. For example, a restructuring charge in year *t* anticipates cash outflows in year *t*+1.

explore cross-sectional variation in this predictive power with board independence.[2] For our sample of 75,875 firm-quarter observations from 1988 to 2002, we find that Street Exclusions have significantly larger future earnings implications when boards contain fewer independent directors. This result holds after controlling for firm size, growth, analyst following, losses, earnings volatility, and industry membership, suggesting that managers are more likely to exclude "permanent" expenses from Street Earnings when boards are less independent. To provide corroborating evidence of opportunism, we study whether board independence is associated with (1) the use of exclusions to meet analyst expectations, (2) the relation between exclusions and future returns, and (3) whether exclusions are associated with increased insider trading.

First, both Lougee and Marquardt (2004) and Doyle and Soliman (2005) suggest that Street Exclusions allow managers to report earnings that exceed analyst forecasts. We extend this research by examining the link between this behavior and board independence, thus providing evidence on whether boards with more independent directors can curtail this type of behavior by management. We find that firms with more independent directors are less likely to have Street Earnings that meet or beat analyst expectations when GAAP earnings miss this benchmark.

Next we examine whether the transparency of Street Exclusions is linked to board structure by estimating regressions of Street Exclusions on future returns. Doyle et al. (2003) find evidence suggesting the stock market is slow to incorporate valuation-relevant information contained in Street Exclusions and document related subsequent negative abnormal returns. If boards with greater independence increase the transparency of voluntary disclosures thereby

[2] Gu and Chen (2004) also use the permanence of the components of exclusions from core earnings to measure the quality of the exclusions. Lipe (1986) uses a similar method to identify transitory items.

facilitating the incorporation of valuation-relevant exclusions into prices, we expect the relation between Street Exclusions and future returns to be weaker when boards contain more outside directors. Consistently, we find that the Street Exclusions disclosed by firms with higher proportions of outside directors have a weaker association with future negative abnormal returns over the next year.

Increased transparency also implies reduced opportunities for insiders to benefit by trading on exclusions when boards are more independent. The previous tests do not provide evidence that managers seek private gains at the expense of shareholders in their choice of Street Exclusions. Accordingly, we investigate whether the link between private management benefits and Street Exclusions is weaker in firms with more independent boards, and look at whether firms with more independent boards have a lower association between insider trading activity and the permanence of Street Exclusions. Consistent with board independence mitigating managerial opportunism, we find that the relation between the permanence of Street Exclusions and insider trading activity following the earnings announcement is stronger when boards are less independent.

In sum, Street Exclusions are 1) more likely to enable the manager to meet the consensus analyst forecast when they otherwise would not, 2) more strongly associated with future abnormal returns (i.e., less transparent), and 3) more likely to be used opportunistically by managers before they trade their shares. Overall, the evidence is consistent with board independence mitigating opportunism in the determination of Street Earnings.

Throughout the tests described above, we use I/B/E/S actual earnings to measure Street Earnings and Street Exclusions. As previously noted, analysts make adjustments to Street Earnings after managers choose which expenses to exclude in a given quarter. Gu and Chen

(2004) find that the portion of expenses that are excluded by management in the press release but re-inserted by analysts (hereafter Inclusions) are of lower quality (i.e., more permanent) than the remaining Street Exclusions.[3] This finding suggests that analysts might provide a substitute oversight mechanism and will be more active when board independence is lower. Therefore, we examine whether the magnitude of *Inclusions* varies with board independence. We find that Inclusions are decreasing in the level of board independence. Thus, analysts reverse more of management's exclusions when boards have fewer independent directors. Our results suggest that managers' disclosures are more likely to produce Street Earnings that represent permanent earnings when boards are more independent and that analysts do not completely eliminate this effect, perhaps because distinguishing between permanent and transitory earnings items is costly for outsiders.

Our findings contribute to both the voluntary disclosure and governance literatures. Street Earnings, as noted above, have been found to be both informative to equity investors (e.g., Bradshaw and Sloan, 2002; Brown and Sivakumar, 2003; Bhattacharya et al., 2003) and opportunistic (e.g., Bradshaw and Sloan, 2002; Doyle et al., 2003; Lougee and Marquardt, 2004; Bhattacharya, Black, Christensen and Mergenthaler, 2004; Bowen, Davis and Matsumoto, 2005). Rather than attempting to distinguish between these alternatives, which need not be mutually exclusive, we examine cross-sectional variation in various measures of opportunism with respect to the computation of Street Earnings.

This paper also adds to our body of knowledge regarding board independence. While evidence indicates board independence improves the quality of financial reporting and disclosure (e.g., Dechow et al., 1996; Beasley, 1996; Klein, 2002a; Ajinkya, Bhojraj and Sengupta, 2005;

[3] Doyle et al. (2003) find that excluded expenses are not entirely transitory even after analysts reinstate the lowest quality excluded expenses made by management.

Karamanou and Vafeas, 2005), several studies suggest that the effects of board independence are weak or non-existent (e.g., Bushman, Chan, Engel and Smith, 2004; Vafeas, 2000; Larcker, Richardson and Tuna, 2004). Street Earnings provides a sensitive proxy for the effects of governance on disclosure quality because, for example, while GAAP earnings are audited and management forecasts can be compared to earnings realizations, the appropriateness of the Street Earnings computation is more difficult to verify. Therefore, in determining Street Earnings, management has discretion beyond that permitted in the computation of GAAP earnings or in the disclosure of earnings forecasts. We provide evidence consistent with opportunism in the disclosure of Street Earnings varying cross-sectionally with board independence.

The remainder of the paper is organized as follows. In the next section we develop and motivate our hypotheses. Section 3 presents our sample and variable measurement. Section 4 presents our research design and test results, and Section 5 concludes.

2. Hypotheses

Given the separation between decision functions and residual risk bearing (Fama and Jensen, 1983), the reduction of agency costs becomes an important factor in achieving organizational efficiency.[4] Combined with legal protection, corporate transparency provides a means to reduce agency costs (La Porta, Lopez-de-Silanes, Schleifer and Vishny, 1998). By disclosing a non-GAAP operating-earnings measure indicative of future performance, managers can provide incremental information to investors over GAAP earnings. Providing such information is often the reason offered by managers to justify disclosure of non-GAAP earnings.[5]

[4] We focus on the alignment of interests between shareholders and managers, but efficient organizational design would minimize contracting costs between all factors of productions (e.g., Jensen and Meckling, 1976).

[5] See for example, the August 3, 2004 earnings release of ParaEXEL, Inc. (http://www.parexel.com/investor_relations/press_releasesSingle.asp?id=191) or the July 27, 2004 earnings release of BMC Software (http://www.bmc.com/corporate/nr2004/072704_1.html).

According to incentive signaling theory (Ross, 1979), managers will strive to reduce information asymmetry because they are penalized for the loss in efficiency associated with retaining the ability to profit from private information.

In contrast to research on voluntary disclosure, theoretical research has yet to define the role of corporate boards or why they arise (Hermalin and Weisbach, 2001). Despite this impediment, empirical research has sought to explore the link between independent directors and board actions. For example, Core, Holthausen and Larcker (1999) find weak governance structures are associated with increased CEO pay. However, they find that CEO pay is declining in the number of *inside* directors. Klein (2002a) finds a negative relation between board independence and the magnitude of discretionary accruals. Bowen, Rajgopal and Venkatachalam (2004) study the link between governance and financial accounting discretion. They measure the number of top executives on the board instead of the percentage of insiders, and find mixed results on the relation between this variable and the magnitude of accounting discretion. They find the magnitude of accruals decreases with the proportion of top executives on the board, while earnings smoothness (measured as the volatility of cash flows relative to the volatility of earnings) increases with the proportion of top executives on the board. With respect to voluntary disclosure, Byard and Li (2004) find indirect evidence that managers are less able to strategically dampen stock prices through disclosure just prior to stock grants (Yermack, 1996; Aboody and Kasznik, 2000) when the company's board has a majority of outside directors. Ajinkya et al. (2005) find that managers of firms with greater institutional ownership and outside directorship are more likely to issue a management forecast, and that these forecasts are more accurate and less optimistic. Finally, Karamanou and Vafeas (2005) find that in firms with more effective board and audit committee structures (where more effective is defined as more

independent, expert, larger, and more active), managers are more likely to make or update an earnings forecast, and their forecast is more accurate and elicits a more favorable market response. In sum, many studies suggest that outside directors benefit shareholders.

We add to our understanding on the relation between board characteristics and board actions by studying the relation between board independence and Street Earnings, a form of voluntary disclosure. The calculation of Street Earnings involves an interplay between managers and analysts. First, managers choose which expenses to exclude from GAAP when they disclose quarterly earnings in the press release. Next, analysts observe management's choices of exclusions but make adjustments to determine Street Earnings by re-inserting some expenses (*Inclusions*).[6] Gu and Chen (2004) find that *Inclusions* are more permanent than the expenses excluded by both managers and analysts, and Marques (2005) finds that *Inclusions* are treated as core earnings by equity investors, both consistent with investors following analysts' interpretation of earnings releases. The portion of manager exclusions that remains after analyst adjustments is the focus of our study, because monitoring of management actions that are less transparent to outsiders is a critical aspect of board oversight. Analysts can act as a substitute governance mechanism when management exclusions are easily identifiable as recurring operating expenses. Therefore, investigating the relation between board independence and exclusions *after* these analyst adjustments is a fundamental component of our research design.

By calling a number of investor relations departments and executives of firms with Street Exclusions, we confirmed that boards or audit committees of boards review the numbers in earnings press releases. The importance of this review was recently emphasized by its

[6] Ultimately the computation of Street Earnings is not governed by GAAP and the appropriateness of Street Exclusions and Inclusions are difficult to verify. In addition, these Exclusions and Inclusions may not be consistent across firms within the same industry or even across time for the same firm.

codification in the NYSE Listed Company Manual.[7] The audit committees of NYSE listed firms are required to "discuss the listed company's earnings press releases, as well as financial information and earnings guidance provided to analysts and rating agencies (Section 303A.07(c))." Given that boards provide oversight with respect to earnings press releases, we argue that the rigor of this oversight, and thus the opportunism present in non-GAAP disclosures, can be related to board independence. That is, more independent boards will act to ensure that Street Earnings coincides with the benign explanations offered by managers to justify its inclusion in the press release.[8]

Several studies argue that managers can use Street Earnings opportunistically to increase equity valuations and/or garner private benefits. For example, Bhattacharya et al. (2004) find that Street use increases dramatically when the earnings and stock prices of the respective firms start to decline. Bowen et al. (2005) look at the strategic emphasis placed on Street Earnings by managers. Among other things, they find that managers tend to emphasize the metric that portrays better firm performance. In experimental settings, both Frederickson and Miller (2004) and Elliott (2006) find that Street Earnings influence nonprofessional investors and induce them to assess a higher stock price for the same firm. In an analytical setting, Hirshleifer and Teoh (2003) argue that Street Earnings may also influence investors with limited attention.

Alternatively, the use of non-GAAP measures need not imply opportunism on the part of analysts and managers. For example, Frankel and Roychowdhury (2005) argue that the existence of Street and GAAP earnings reflects the differing demands of clienteles. The

[7] http://www.nyse.com/Frameset.html?displayPage=/listed/1022221393251.html

[8] Following much of the prior literature we treat board structure as exogenous. However, to the extent that board structure and disclosure policy are jointly determined, our inferences can be biased. As noted by Hermalin and Weisback (2001, p. 35) theory and evidence on the determinants of board structure are limited. Research suggests firm size and growth are related to board independence. Thus we control for these characteristics in our tests (Klein, 2002b; Lehn, Patro and Zhao, 2003; Boone, Field, Karpoff and Raheja, 2004).

characteristics of an earnings number useful for equity valuation can differ from those of a number that minimizes contracting costs. They find evidence suggesting that alternative earnings measures arise in equilibrium. In sum, empirical evidence exists on both sides of this issue. Thus, we do not claim that Street Earnings are used solely as an opportunistic earnings management tool, but simply that opportunism is possible.

To understand whether managers use exclusions opportunistically, researchers have explored the properties of the expenses excluded from Street Earnings. Doyle et al. (2003) find that these excluded expenses are not completely transitory and have future earnings and cash flow implications. To the degree that items are recurring and permanent, they are useful for valuation (e.g., Lipe, 1986; Fairfield, Sweeney, and Yohn, 1996). Gu and Chen (2004) support this point by providing evidence that items excluded by management but re-inserted by analysts are more permanent (i.e., more predictive of future earnings). Based on this logic, our measure of an excluded expense's quality is its ability to predict future earnings. Expenses excluded by management that forecast future earnings are not transitory and are possibly opportunistic in nature; prior studies confirm that this is the case on average—excluded expenses are predictive of future earnings. If board independence mitigates this type of behavior, we expect to find cross-sectional variation between the degree of exclusion permanence and board independence.[9] Stated in the alternative form, our first hypothesis is:

Hypothesis 1: Street Exclusions have significantly larger future earnings implications when a firm's board is less independent.

[9] We focus on the independence of the board of directors. In sensitivity tests, we also examine the independence of the audit committee. Results, though slightly weaker, support our general conclusions. The weaker results likely stem from the lower variation in audit committee independence compared to board independence; in Klein (2002a, p. 382) the mean audit committee independence was 79.6% while board independence was 58.4%. Moreover, this proportion has increased over time. In December 1999, the NYSE and NASDAQ modified their requirements for audit committees. Under the new standards, firms must maintain audit committees with at least three independent directors (Klein, 2003). In our sample, mean Audit Committee Independence increased to 90% for 2002 (while the board independence mean increased to only 66%).

Evidence consistent with Hypothesis 1 does not necessarily indicate opportunism on the part of managers. For example, it could be the case that managers simply make mistakes when excluding items (and analysts cannot correct them) because distinguishing between transitory and permanent items requires prediction of the future. If an excluded item's covariance with future earnings is bounded below by zero and unbounded above, then the distribution of observed covariances will be skewed and a greater incidence of mistakes could lead to a higher mean covariance between exclusions and future earnings. Furthermore, the difficulty in distinguishing the type of exclusion may be related to growth and thus correlated with board independence. Thus, to provide additional evidence of opportunism, we study whether the board independence is associated with (1) the use of exclusions to meet analyst expectations, (2) the relation between exclusions and future returns, and (3) whether exclusions are associated with insider trading.

Both Lougee and Marquardt (2004) and Doyle and Soliman (2005) suggest that managers strategically use non-GAAP earnings to exceed the analyst forecast benchmark. These studies find an increase in the use of positive (income-increasing) exclusions when reporting GAAP would result in the firm missing the median analyst forecast for the quarter.[10] We investigate whether the presence of Street Exclusions that allow firms to meet analyst forecasts is related to board independence. Our second hypothesis, stated in the alternative form is:

Hypothesis 2: The percentage of firms whose Street Earnings meet analyst forecasts and whose GAAP earnings miss analyst forecasts is higher when a firm's board is less independent.

[10] To exceed analyst expectations, managers can also misclassify core operating expenses as one-time items in the year they occur, since one-time items tend to be excluded from analyst forecasts. McVay (2006) finds that managers misclassify more core expenses as "special" when doing so allows them to meet the analyst forecasts they would otherwise miss.

The correlation documented by Doyle et al. (2003) between abnormal returns in the years following the earnings announcement and Street Exclusions suggests that markets are slow to incorporate information contained in Street Exclusions.[11] This could occur because investors are predisposed to fixate on Street Earnings even though managers are excluding valuation-relevant items from this non-GAAP performance metric (Hirshleifer and Teoh, 2003). Thus investors gradually update their expectations as firm performance is realized. The correlation between exclusions and future returns implies that financial reporting related to Street Exclusions lacks transparency. If more independent boards better protect shareholders from misleading or noisy disclosures, thereby increasing the transparency of reported numbers, then we would expect the correlation between Street Earnings and future returns to be weakened when boards are more independent. Therefore our third hypothesis, stated in the alternative form is:

Hypothesis 3: Street Exclusions have larger future abnormal return implications when a firm's board is less independent.

Seemingly opportunistic behavior by management can actually be beneficial to shareholders. For example, earnings management that forestalls the violation of debt covenants can transfer wealth from bondholders to stockholders. We would not expect boards to curtail managerial behavior that benefits shareholders. In our case, if the exclusion of permanent items were not costly to shareholders we would not expect such exclusions to be limited by board actions. Therefore, we examine a possible cost to shareholders: insider trading on the basis of Street Exclusions. Insider trading activity after the announcement of Street Earnings related to the permanence of Street Exclusions suggests managerial opportunism in the use of exclusions. For example, envision a manager who wants to maximize the proceeds from a stock sale after an

[11] The correlation between exclusions and an unidentified risk factor is another possible explanation for the ability of exclusions to explain future returns.

earnings announcement.[12] Given that the market is slow to incorporate information in Street Exclusions, the manager has an incentive to exclude expenses from Street Earnings. Such incentives can lead to the exclusion of expenses even if they are not transitory. Thus, opportunistic behavior by managers suggests that the magnitude of insider trading activity after the earnings announcement will be related to the future earnings implications of exclusions. Therefore our fourth hypothesis, stated in the alternative form is:

Hypothesis 4: The association between the magnitude of insider trading activity and the future earnings implications of Street Exclusions is stronger when a firm's board is less independent.

We define Street Earnings as the I/B/E/S-reported actual earnings per share (Bradshaw and Sloan, 2002; Brown and Sivakumar, 2003; Doyle et al., 2003; Collins, Li and Xie, 2005). Prior research (Abarbanell and Lehavy, 2002; Gu and Chen, 2004) finds that forecast data providers such as I/B/E/S occasionally adjust the earnings number disclosed in the press release (*Inclusions*) to ensure compatibility with earnings forecasts made by a majority of the analysts following the firm. Gu and Chen (2004) examine these Inclusions and find that the analysts re-insert the most persistent exclusions back into actual earnings. By making these adjustments, analysts can reverse some of the more opportunistic exclusions of managers. If more independent boards limit managerial opportunism, then analysts will make fewer adjustments (i.e., reinsert fewer items) when boards are more independent. However, managers are an important source of information on nonrecurring items (Healy and Palepu, 2001; Francis and Philbrick, 1993). Thus differentiating between exclusions that are more permanent and those that are less permanent will be costly for analysts, particularly when their purpose conflicts with management intentions. To better understand analysts' tendencies to re-insert exclusions as

[12] We focus on trading that occurs after the earnings announcement because most company policies prohibit sales prior to the earnings announcement (Bettis, Coles and Lemmon, 2000).

board independence varies we use the First Call Footnote file to isolate analyst adjustments to the earnings disclosed in the press release and test the following hypothesis (stated in the alternative form):

Hypothesis 5: The magnitude of analyst reversals of exclusions is decreasing in board independence.

3. Empirical Analysis

3.1 Sample

Our empirical tests employ data from several sources. Financial statement data are obtained from the *Compustat* quarterly database, quarterly Street Earnings are obtained from the split-unadjusted I/B/E/S database, board of director independence information comes from the Investor Research Responsibility Center's (IRRC) corporate governance dataset, and price information is obtained from CRSP. Finally, insider-trading data are obtained from Thomson Financial. Our sample period covers all firm quarters with available data across *Compustat*, I/B/E/S and IRRC for the period 1988 to 2002.[13] These criteria yield a final sample size of 75,875 firm-quarter observations. The number of observations in any particular test will vary depending on the availability of data necessary for the particular test. Finally, to test our final hypothesis, we create a subsample that examines the items added back by analysts (*Inclusions*). To this end, we use the March 2003 version of the First Call Historical Database covering the period 1990–2003.[14] Our sample selection process is identical to that of Gu and Chen (2004). Merging this data with our existing sample yields a new sample size of 8,306 firm-quarter observations.

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[13] IRRC data covers 1997 to 2002; we require that included firms have at least one year of IRRC data.

[14] We are grateful to Zhaoyang Gu for providing us with these data.

3.2 Variable Measurement

3.2.1 Street Earnings

To form Street Earnings and Exclusions, we begin by computing the Street Exclusions implied by the Street Earnings number. We use the I/B/E/S split-unadjusted database to ensure that the EPS figure is the actual EPS originally reported.[15] This makes the I/B/E/S figures directly comparable to the Compustat figures, which are recorded at the historically reported amounts. I/B/E/S flags whether the reported Street Earnings per share number is basic or diluted. GAAP earnings are defined as earnings per share before extraordinary items and discontinued operations, using either basic (Compustat data item #19) or diluted (data item #9), depending on the I/B/E/S basic/diluted flag. The difference between Street Earnings and GAAP earnings is defined as Street Exclusions: Street Exclusions = Street Earnings – GAAP earnings. When Street Earnings are higher than GAAP earnings, Street Exclusions are positive, indicating that the average exclusion is an expense.

3.2.2 Corporate Governance

Our corporate governance metric is the proportion of outside directors on the board.[16] Many potential corporate governance metrics exist (for example, see Larcker et al., 2004; Brown and Caylor, 2004).[17] However, board and audit committee independence has been used extensively in prior examinations of corporate governance and fraud and earnings management

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[15] Baber and Kang (2002) and Payne and Thomas (2003) show that the I/B/E/S's split-adjustment, coupled with I/B/E/S's rounding, can lead to erroneous inferences. We use I/B/E/S split-unadjusted data to avoid this problem.

[16] The definition of director independence varies depending on the exchange. For NYSE firms, independence requires that the director 1) does not have a material relationship with the company, 2) cannot have been an employee for 5 years, 3) cannot have been an employee of the company's auditor for five years, 4) cannot have been an interlocking director (i.e., an executive of company A serves on the compensation committee of B and an executive of company B serves on the board of company A), and 5) cannot have an immediate family member who has met any of these disqualifications. The NASDAQ and NYSE rules are similar.

[17] The general consensus from these papers is that corporate governance is multifaceted. However, the data used in both of these studies is new and the analyses are thus limited to the years 2002–2004. Alternatively, Bowen et al. (2004) use the G-Score developed in Gompers, Ishii, and Metrick (2003) as their main corporate governance metric. We do not use a metric of "shareholder rights," but rather focus on financial reporting oversight.

(Dechow et al., 1996; Beasley, 1996; Klein, 2002a). Moreover, both the SEC and the major stock exchanges impose board independence requirements, indicating that this is an important aspect of corporate governance. For example, both the NYSE and the NASDAQ now require a majority of outside directors on the board of directors, and under Sarbanes-Oxley, Section 301, all audit committee members must be independent (see also Klein, 2003).

To examine years prior to the start of IRRC data (i.e., prior to 1997), we assign the first year of available data to all preceding years. For example, a firm with IRRC data beginning in 1999 has the percentage of board independence in 1999 as the board independence percentage from 1988 to 1998. We also present results using only those firm years for which we have IRRC data, limiting these results to a subset of firms from 1997 to 2002.

We measure board independence several ways including the continuous percentage, the quartile rank, and an indicator variable indicating that a firm has an "independent" board if the majority of the directors are independent. We present the decile of independence (ranked by year) in our tables; however, our fundamental conclusions are insensitive to these alternate specifications.

3.2.3 Other Variables

As in Gaver and Gaver (1993) and Guay (1999) we employ common factor analysis to construct a single variable (*Growth*) that captures variation common to *Book-to-MarketAssets*, *R&D*, *Sales Growth*, and *Investment Expenditures*. *Book-to-MarketAssets* is defined as book value of equity divided by the book value of debt plus market value of equity at the end of the quarter (data item #60 / [data item #181 + (data item #61 × data item #14)]). *R&D* is calculated as R&D expense divided by the market value of assets (data item #46 / [data item #181 + (data item #61 × data item #14)]). *Sales Growth* is the change in sales from quarter $q - 4$ to q (data

item #2). *Investment Expenditures* is calculated as capital expenditures divided by market value of assets (data item #30 / [data item #181 + (data item #61 × data item #14)]).[18] We examine three additional variables in addition to *Growth*. *Analysts* is the number of analysts following the firm in year *t*. *Loss* is an indicator variable that is equal to one if quarterly GAAP earnings (data item #25) is less than zero, and zero otherwise. Finally, *Earnings Volatility* is the standard deviation of return on assets (data item #25 divided by data item #44) over the preceding eight quarters.

3.3 Descriptive Statistics

Referring to Table 1, the mean percentage of board independence is 62.3%. Klein (2002a, 2002b), in her hand-collected sample of S&P 500 firms from 1992 to 1993, finds that outsiders, on average, make up 58.4% of the board. Thus outsider representation has increased slightly over time. Street Earnings per share (GAAP earnings per share) is \$0.44 (\$0.40). This is larger than the per-share figures reported by Doyle et al. (2003) of \$0.29 (\$0.26). The difference is consistent with IRRC covering larger, more profitable firms. Consistent with prior literature, Street Earnings per share tends to exceed GAAP earnings per share. Total Street Exclusions average \$0.04. Our factor score for growth has a mean of zero by construction.

Table 2 provides descriptive statistics by independence quartile. Firms with high proportions of outsiders tend to have lower (scaled) Street Earnings per share, GAAP earnings per share, and Future GAAP earnings per share, as well as more recorded assets, lower growth and a higher number of analysts following the firm. Thus, growth firms tend to have less

[18] We replicate each of our results using the alternative growth controls of the book-to-market ratio and quarter-over-year ago quarter sales growth. Results are similar. We also consider the age of the firm as potential correlated omitted variable. Results are not sensitive to the inclusion of the age of the firm.

independent boards, consistent with growth firms facing higher uncertainty and complexity and therefore requiring board members with specialized knowledge of the firm (Klein, 2002b).

Table 3 displays the correlation between our variables. Referring to the Pearson correlations in the upper right, GAAP and Street Earnings are correlated at 0.83. Street Exclusions and Street Earnings are negatively correlated consistent with exclusions including special items, which are more likely to occur when performance is poor (e.g., Elliott and Shaw, 1988; DeAngelo, DeAngelo and Skinner, 1994). Consistent with managers' arguments in support of presenting non-GAAP measures, Street Earnings appears to be more highly correlated with Future GAAP earnings than current GAAP earnings (0.68 versus 0.63), and Street Exclusions are positively associated with both the existence of a loss and earnings volatility. Finally, board independence is positively associated with the *magnitude* of Street Exclusions, consistent with larger firms, with more assets and lower profitability, having more independent boards; the table does not shed light on cross-sectional variation in the *quality* of Street Exclusions.

In Table 4 we present sample size and board independence statistics by industry.[19] Our sample has the highest number of observations in Heavy Industry, and the lowest in Agriculture. The Utility (Apparel) industry has the highest (lowest) mean and median proportion of outside directors on the board. These realizations are consistent with firms requiring board members to have more firm-specific knowledge in the apparel industry than in utilities (Klein, 2002b). While apparel companies must move quickly to capitalize on changing consumer preferences, utility companies are more apt to focus on long-term trends.

4. Research Design and Test Results

[19] Industry classifications are based on Frankel, Johnson and Nelson (2002).

4.1 Future GAAP Earnings

Our first hypothesis posits that lower independence percentages imply Street Exclusions have greater future-earnings implications. We investigate the prediction of next year's GAAP earnings, measured as the sum of quarters $q + 1$ through $q + 4$, by estimating the following regression equation:

$$\textit{Future GAAP earnings}_{q+1,\,q+4} = \gamma_0 + \gamma_1 \textit{Street Earnings}_q + \gamma_2 \textit{Street Exclusions}_q + \gamma_3 \textit{Independence Decile}_t + \gamma_4 \textit{Street Exclusions}_q \times \textit{Independence Decile}_t + \textit{Control Variables} + \upsilon_{q+1,\,q+4}. \quad \textbf{(1)}$$

Estimating equation (1) in a pooled regression poses serious econometric problems because observations occur each quarter while the dependent variable aggregates over four quarters. Consequently, the dependent variable overlaps between observations. To control for this problem we estimate equation (1) separately for each quarter and report the mean of the resulting coefficient estimates. We then compute a t-statistic based on the quarterly estimates (similar to Fama and MacBeth, 1973), multiplying the traditional standard error by the Newey-West adjustment (Newey and West, 1987) to account for possible serial correlation in the quarterly estimates.[20]

Because all variables are denominated in dollars and scaled by total assets, the coefficients in equation (1) can be interpreted as the future-dollar-earnings implication of a dollar change in the unscaled independent variable. If the excluded expenses are irrelevant, non-recurring, and have no future GAAP earnings consequences, then the coefficient on Street

[20] The Newey-West adjustment is discussed in Verbeek (2000, p. 104). The correction multiplies the traditional standard error by $\sqrt{NW}$, where $NW = 1 + \sum_{i=1}^{n} (1 - \frac{i}{n+1}) \rho_i$. The variable ρ_i is the autocorrelation at lag i and n is the number of lags that are expected to be autocorrelated. We set n equal to the number of overlapping periods in each test (i.e., n=3).

Exclusions in (1) (i.e., γ_2) should be zero. However, based on prior research, we expect this coefficient to be negative, indicating that a portion of Street Exclusions represents recurring expenses (e.g., Doyle et al., 2003; Gu and Chen, 2004; McVay, 2006). The estimated coefficient of interest in this regression is γ_4. If Street Exclusions of firms with more independent boards are of higher quality than the average Street Exclusion, we expect γ_4 to be positive, countering the expected negative coefficient on γ_2.[21]

Results are presented in Table 5. The first column of results does not include the independence variable or interaction term. The coefficient on Street Earnings is 3.37. 4.0 is the expected coefficient when earnings are completely permanent, given that future GAAP earnings is the sum of four quarters. As expected, γ_2 is negative and significant.[22] Essentially, one dollar in quarterly Street Exclusions implies future expenses over the subsequent four quarters of $1.11. Though clearly less than 4.0 (the expected coefficient for a permanent dollar of earnings), the results are consistent with prior literature—while Street Exclusions are less permanent than included expenses ($1.11 < 3.34$), they are not entirely transitory (Doyle et al., 2003; Gu and Chen, 2004).

Next, we explore whether the Street Exclusions are more transitory when the firm has a greater proportion of outsider board representation. Consistent with Hypothesis One, γ_4, in the second column of Table 5, is positive and significant ($\gamma_4 = 0.10$). The association between Street Exclusions and future earnings is lower when the board is more independent. In addition, this

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[21] An alternative explanation to this result is that some types of firms tend to exclude expenses that are more permanent in nature (e.g., amortization expense) and that these firms are systematically related to board independence (i.e., there is a correlated omitted variable that explains our result). In unreported tests, we check whether the autocorrelation of exclusions varies with board independence and find no significant correlation. In other words, it is the "quality" of the exclusion, not simply the type of exclusion that varies with board independence.

result suggests analyst adjustments do not completely offset the effects of board independence on the permanence of Street Exclusions. Our result is consistent with that of Gu and Chen (2004) and Doyle et al. (2003), who find that exclusions contain a non-transitory component even after analysts have the opportunity to make adjustments. Taken together, these findings are compelling because they suggest that I/B/E/S analysts cannot easily identify the remaining exclusions as opportunistic. After analysts strip out the most egregious exclusions, the remaining exclusions continue to vary in quality, and this quality varies with board independence.

For intuition on the economic significance of this finding, consider firms in the top decile of board independence (deciles of board independence range from zero to nine). The Street Exclusions of these firms are expected to be associated with lower future GAAP earnings of \$0.67 ($-1.57 + 0.10 \times 9$), compared to \$1.57 for firms in the lowest decile of board independence; earnings implications are lower by more than one-half.

In the third column of Table 5, we include the decile rank of several control variables. Recall from Table 3 that board independence and size (the log of total assets) are positively correlated (see also Klein, 2002a, 2002b). Also, the costs to opportunistic behavior can increase with size, as shareholders are more likely to sue larger firms (Francis, Philbrick and Schipper, 1994). Therefore, we include the log of total assets. Next, growth can also act as a correlated-omitted variable if it is correlated with the persistence of Street Exclusions. Results in Table 2 (and Klein, 2002b) clearly indicate that high growth firms tend to have less independent boards. Accordingly, we include the *Growth* factor described in Section 3. We also control for the number of I/B/E/S analysts following the firm. As analyst following increases, forecast

[22] Recall that our definition of Street Exclusions gives excluded losses a positive sign and excluded gains a negative sign.

providers will be more likely to establish rules for the inclusion or exclusion of items to ensure cross-analyst consistency. Thus, the number of analysts forming the consensus can be related to differences between earnings reported by managers and actual numbers provided by I/B/E/S. Some firms, such as loss firms and firms with high earnings volatility, may have less persistent earnings (e.g., Hayn, 1995; Dichev and Tang, 2005) and appear more likely to have Street Exclusions (Table 3 herein; Lougee and Marquardt, 2004). Thus, we include an indicator variable for loss firms, as well as each firm's historical earnings volatility. We also interact each of the above five variables with exclusions. Finally, we include the industry indicator variables from Fama and French (1997). Results are robust to the inclusion of these additional variables and interactions.

In the final three columns of Table 5, we estimate the same three regression specifications using only those observations that had board data in the firm-quarter observation year. This restriction limits the sample to a subset of firms from 1997 to 2002, less than one third of the original sample. Results are similar to those in the first three columns.

The existence of Street Exclusions may simply indicate lower earnings persistence. Although we include control variables such as loss and earnings volatility above, we also present a second set of regressions (for both the extrapolated and actual board independence samples) for only those firm-quarter observations with non-zero Street Exclusions. Results from this alternative specification are presented in Table 6. Overall, the empirical results are similar to those in Table 5.

4.2 Exceeding Analyst Forecasts

Our second hypothesis concerns whether board independence is associated with the incidence of "benchmark-beating" exclusions. We consider a firm whose GAAP earnings fall

below the consensus analyst forecast, but whose Street Earnings meet or exceed this benchmark to have "benchmark-beating" exclusions. Although we recognize that analysts do not forecast GAAP earnings, several studies have shown that exceeding analyst forecasts provides a strong incentive for managers to exclude expenses from earnings (e.g., Lougee and Marquardt, 2004; Doyle and Soliman, 2005; McVay, 2006). We expect greater board independence to be associated with a reduction in the incidence of "benchmark-beating" exclusions. We estimate a logistic regression in Table 7, using the following model:

$$\textit{Benchmark Beating}_q = \gamma_0 + \gamma_1 \textit{Independence Decile}_t + \gamma_2 \textit{Log of Total Assets}_q + \gamma_3 \textit{Growth}_q + \gamma_4 \textit{Analysts}_t + \gamma_5 \textit{Loss}_q + \gamma_6 \textit{Earnings Volatility}_q + \varepsilon_q \quad (2)$$

Benchmark Beating is an indicator variable that is equal to one if GAAP earnings fall below the median analyst forecast, but Street Earnings meet or exceed the median forecast, and (are) zero otherwise. A negative coefficient on *Independence Decile* is consistent with board independence, reducing the likelihood that Street Exclusions enabled the manager to meet the analyst forecast. Referring to Table 7, when examining the entire population from 1988 to 2002, a higher independence decile decreases the likelihood of meeting the analyst forecast using Street Earnings, but missing the analyst forecast using GAAP earnings. This result strengthens when only observations with non-zero exclusions are used. Turning to the samples for the 1997 to 2002 time period, *Independence Decile* is not significant when examining all firms, but again is strongly significant when examining only those firms with non-zero exclusions. Overall, these results support the joint hypothesis that 1) Street Exclusions arise, in part, from managers' attempts to meet the analyst forecast, and 2) board independence mitigates this behavior.[23]

[23] One might question why boards prevent managers from using exclusions to meet the analyst forecast. One possibility is that managers obtain personal benefits from doing so, such as obtaining a larger bonus (Matsunaga and

4.3 Future Returns

To test our third hypothesis we examine whether the relation between Street Exclusions and subsequent returns varies with board independence. We estimate the following regression equation:

$$\begin{aligned} \textit{Returns}_{t+1} = {} & \gamma_0 + \gamma_1 \textit{ Street Exclusions}_q + \gamma_2 \textit{ Independence Decile}_t \\ & + \gamma_3 \textit{ Street Exclusions}_q \times \textit{Independence Decile}_t + \gamma_4 \textit{ Book to Market}_q \\ & + \gamma_5 \textit{ Log of MVE}_q + \gamma_6 \textit{ Beta}_q + \gamma_7 \textit{ Accruals}_q + \gamma_8 \textit{ Momentum}_q + \upsilon_{t+1} \end{aligned} \quad \textbf{(3)}$$

Future abnormal returns ($Returns_{t+1}$) are calculated as annual buy-and-hold returns (inclusive of dividends and other distributions) less the value-weighted market index for the same period. They are computed beginning two days after the announcement date. For firms that delist during the future return period we calculate the remaining return by taking CRSP's delisting return and then reinvesting the proceeds in the value-weighted market portfolio. For firms that delist due to poor performance (delisting codes 500 and 520–584), we use a –35% delisting return for NYSE/AMEX firms and a –55% delisting return for NASDAQ firms, as recommended in Shumway (1997) and Shumway and Warther (1999).

To control for the possibility that our return regressions are simply capturing differential risk across the portfolios or a previously documented market anomaly, we include multiple control variables. The risk controls are $Beta_q$, estimated using weekly returns over the two years prior to the end of fiscal quarter q, *Log of* MVE_q, defined as the log of the market value of equity at the end of fiscal quarter q (#61 × #14), and *Book-to-Market*$_q$, constructed as the book value of equity (#60) at the end of fiscal quarter q divided by the market value of equity at the end of fiscal-quarter q (see Fama and French, 1993 for a discussion of each risk control). We control

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Park, 2001) or selling their shares at potentially inflated prices (Richardson, Teoh and Wysocki, 2004). We

for the accruals anomaly (Sloan, 1996) by adding $Accruals_q$ as an independent variable computed as GAAP earnings per share (data item #19) minus cash from operations per share (data item #108 divided by data item #44), scaled by assets per share at the end of fiscal quarter. Finally, we control for $Momentum_q$, calculated as the market-adjusted stock return for the six months prior to the earnings announcement (see Chan, Jegadeesh and Lakonishok, 1996). Following Bernard and Thomas (1990), we transform each of the independent variables to its scaled-decile rank by quarter for ease of interpretation of coefficient estimates.

We present results for each of our four samples in Table 8. The first column of results is over all firms from 1988 to 2002. Consistent with Doyle et al. (2003), we find Street Exclusions are negatively associated with future abnormal returns ($\gamma_1 = -0.12$). Consistent with Hypothesis 3, we find future abnormal negative returns are declining in board independence ($\gamma_3 = 0.08$). We replicate these regressions using the sample from 1997 to 2002 and find similar results. Referring to the final two columns of results, however, results are significantly weaker when we exclude observations with zero Street Exclusions. Overall, we find limited evidence that board independence increases the transparency of Street Exclusions.

4.4 Insider Trading

To test our fourth hypothesis, we examine whether board independence reduces the relation between insider trading and the permanence of Street Exclusions. In Table 9 we examine the association between the persistence of Street Exclusions and the magnitude of insider trading, and whether this association varies with board independence. Specifically, we estimate the following regressions:

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investigate these incentives in subsequent tests.

$$\textit{Future GAAP earnings}_{q+1,\,q+4} = \gamma_0 + \gamma_1 \textit{ Street Earnings}_q + \gamma_2 \textit{ Street Exclusions}_q + \gamma_3 \textit{ Abs(Insider Trading) Decile}_q + \gamma_4 \textit{ Street Exclusions}_q \times \textit{Abs(Insider Trading)Decile}_q + \upsilon_{q+1,\,q+4} \quad \textbf{(4a)}$$

$$\textit{Future GAAP earnings}_{q+1,\,q+4} = \gamma_0 + \gamma_1 \textit{ Street Earnings}_q + \gamma_2 \textit{ Street Exclusions}_q + \gamma_3 \textit{ Abs(Insider Trading) Decile}_q + \gamma_4 \textit{ Street Exclusions}_q \times \textit{Abs(Insider Trading) Decile}_q + \gamma_5 \textit{ Independence Decile}_t + \gamma_6 \textit{ Street Exclusions}_q \times \textit{Abs(Insider Trading) Decile}_q \times \textit{ Independence Decile}_t + \upsilon_{q+1,\,q+4} \quad \textbf{(4b)}$$

where *Abs(Insider Trading) Decile* is the decile rank of the absolute value of managerial insider trades occurring from the day following the earnings announcement through the end of the quarter, calculated as $[\ \sum_{i=1,h=1}^{I,H} (SS_{ih} / SH_{ih}) - \sum_{i=1,h=1}^{I,H} (SP_{ih} / SH_{ih})]$ where SS_{ih}, SP_{ih}, *and* SH_{ih} are shares sold in the open market, purchased in the open market, and held by officer *i* for each post-announcement trade *h* for the given firm in the given quarter. Referring to the first column of Table 9, which presents regression equation (4a) for all firms from 1988 to 1999,[24] γ_4 is not statistically different from zero, indicating that Street Exclusions are no more permanent (i.e., of lower quality) when insiders trade more.

In the second column of results, which presents regression equation (4b) for all firms from 1988 to 1999, γ_4 is negative and significant after controlling for board independence. In other words, once the exclusions are able to vary by board independence, Street Exclusions are more permanent (i.e., of lower quality) when insiders in firms with low board independence trade more. Further, γ_6 is positive and significant, indicating that the above association is weaker in firms with higher board independence. This finding supports the notion that while managers' trading activity is associated with the future earnings implications of Street Exclusions, this relation is diminished in firms with higher board independence.

[24] Our insider trading data is only available through the first quarter of 2000.

Although not shown, these findings are similar if we include the multiple control variables in Tables 5 and 6. For example, regression equation (4b) yields coefficients of $\gamma_4 = -0.03$ ($t = -1.51$) and $\gamma_6 = 0.01$ ($t = 2.53$) when estimated using all of the control variables. Moreover, results are generally consistent in the three alternate sub-samples, though the coefficient on γ_4 is insignificant or weakly significant when the sample period is confined to the years 1997 to 1999, suggesting that insiders are less apt to trade on the basis of exclusions in more recent periods (or alternately, that these regressions lack power). Overall, the results support the notion that board independence reduces opportunism related to the permanence of Street Exclusions.

4.5 Street Earnings, Analyst Adjustments, and Board Independence

Next, we investigate the relation between *Inclusions* and board independence *Inclusions* are income statement items that were excluded by managers when calculating non-GAAP earnings in the press release but included in actual earnings by First Call analysts. For consistency with our other tests we give net income-reducing items a positive sign. In untabulated univariate tests, we find that they are negatively correlated (–0.045; p-value = 0.0001) with board independence. Thus, all else equal, First Call is less likely to restore to earnings exclusions made by managers of firms with more independent boards.

In Table 10, we present the results of a regression of *Inclusions* (a continuous variable scaled by total assets per share) on board independence and control variables. The results are consistent with the simple correlation above. In all models *Inclusions* are significantly negatively related to board independence. This result suggests that managers of firms with more independent boards behave less opportunistically in their choice of exclusions, and (consistent

with results in Gu and Chen,2004) that First Call analysts need to be less active to reverse these exclusions when boards are more independent. [25]

5. Conclusions

In this study we explore the relation between board independence and disclosure. We focus on board independence, as the economic importance of this facet of corporate governance remains an open question in the academic literature and because the NYSE stock exchange, the SEC, and the financial press have shown a keen interest in board independence. Further, per our conversations with company officials, the boards or audit committees often review earnings press releases and thus have the means to affect earnings disclosures. We focus on Street Earnings, and examine the characteristics of the income or expenses included in GAAP earnings, but excluded from Street Earnings (i.e., Street Exclusions). We have reason to believe that board independence is linked to the characteristics of Street Earnings—a number whose computation is associated with less regulatory guidance and auditor oversight. In addition, because Street Earnings are subject to adjustment by analysts, they provide a variable that allows us to examine the ability of analysts to counteract the effects of opportunistic disclosures by managers.

Our findings reject the null hypothesis of no relation between the characteristics of Street Exclusions and board independence. We find that Street Exclusions are more strongly related to future earnings when board independence is low. Further, we find that Street Exclusions that allow Street Earnings to beat analyst forecasts when GAAP earnings would not occur more frequently when board independence is low. We also find some evidence that subsequent

[25] An alternative test approach is to examine an indicator variable for whether or not the First Call analysts re-inserted *any* managerial exclusions into core earnings (rather than examining the magnitude). We replicate our analysis using an indicator variable approach and results are similar. For example, for the first column of results, the coefficient on board independence is –0.033 ($Pr < X^2 = 0.025$).

negative abnormal returns associated with Street Exclusions are less pronounced in firms where board independence is high, and that insider trading is more weakly associated with the permanence of Street Exclusions when board independence is high. Finally, our results suggest that analysts reverse more exclusions as boards become less independent.

These tests provide insight into how corporate governance (measured by board independence) shapes disclosure, given analyst oversight. This question is relevant, given regulatory concerns about the potential for non-GAAP earnings to mislead investors, and the focus by regulators on independent boards and analyst activities. Our results suggest that board independence affects voluntary earnings-related disclosure despite analyst intervention.

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TABLE 1
Descriptive Statistics

Variable	*Mean*	*Std Dev*	*5%*	*25%*	*Median*	*75%*	*95%*
Percent Board Independence	62.3%	17.9%	28.6%	50.0%	64.3%	76.9%	87.5%
Street Earnings per share	0.44	0.44	–0.13	0.19	0.37	0.63	1.26
GAAP earnings per share	0.40	0.54	–0.33	0.16	0.35	0.63	1.30
Street Exclusions per share	0.04	0.26	–0.13	0.00	0.00	0.00	0.38
Future GAAP	1.64	1.98	–1.20	0.67	1.50	2.53	4.97
Total Assets	6,275	19,134	76	304	1,007	3,955	27,914
Growth	0.00	0.07	–0.04	0.00	0.02	0.05	0.15
Analysts	6.65	5.04	1.00	3.00	5.00	9.00	17.00
Loss	0.117	0.322	0.000	0.000	0.000	0.000	1.000
Earnings Volatility	0.013	0.018	0.001	0.003	0.007	0.014	0.046
Surprise	0.00	0.13	–0.19	–0.02	0.01	0.03	0.15

The full sample consists of 75,875 firm-quarter observations from 1988 to 2002. All income numbers (including Surprise) are reported here on a per-share basis, but are scaled by total assets per share at the end of the fiscal quarter in all statistical tests. The variables are defined as follows: *Street Earnings* is the I/B/E/S reported actual earnings per share. *GAAP earnings* is the applicable basic or diluted income per share (matched to the I/B/E/S definition) before extraordinary items and discontinued operations (#19 or #9). *Street Exclusions* = Street Earnings – GAAP earnings. *Future GAAP* is GAAP earnings per share, as defined above, summed for 4 quarters starting with quarter q+1. *Total Assets* (#44) is measured at the end of quarter q. The log of this number is used in all statistical tests. *Growth* is obtained using common factor analysis on the four variables of *Book-to-MarketAssets*, *R&D*, *Sales Growth*, and *Investment Expenditures*. *Book-to-MarketAssets* is defined as book value of equity divided by the book value of debt plus market value of equity at the end of the quarter (#60 / [181+{#61 times #14}]). *R&D* is calculated as R&D expense divided by the market value of assets (#46/[181+{#61 times #14}]). *Sales Growth* is the change in sales from quarter q–4 to q (#2). *Investment Expenditures* is calculated as capital expenditures divided by market value of assets (#30/[181+{#61 times #14}]). *Analysts* is the number of I/B/E/S analysts following the firm. *Loss* is an indicator variable that is equal to one if GAAP earnings (#25) is less than zero, and zero otherwise. *Earnings volatility* is the standard deviation of return on assets (#25 divided by #44) over the preceding eight quarters. *Surprise* is *Street Earnings – I/B/E/S forecast*, the most recent median forecast preceding the earnings announcement date. *Percent Board Independence* is the percent of board members that are independent in the fiscal year containing quarter *q*. The earliest year of available board data is extrapolated to all preceding years. All financial statement variables are winsorized at the 1% and 99% levels.

TABLE 2
Descriptive Statistics by Board Independence Quartiles

Descriptive Values	Board Independence Quartiles			
Mean (above) Median (below)	1 (lowest)	2	3	4 (highest)
Street Earnings per share	0.018	0.016	0.015	0.013
	0.016	0.014	0.012	0.011
GAAP earnings per share	0.016	0.014	0.012	0.011
	0.015	0.014	0.012	0.010
Street Exclusions per share	0.002	0.002	0.002	0.002
	0.000	0.000	0.000	0.000
Future GAAP	0.069	0.061	0.053	0.046
	0.064	0.055	0.046	0.040
Total Assets	4,246.9	5,067.3	7,488.9	8,290.2
	547.4	762.7	1,320.4	1,918.8
Growth	0.043	0.037	0.030	0.023
	0.029	0.022	0.014	0.010
Analysts	6.02	6.43	6.93	7.21
	5.00	5.00	6.00	6.00
Loss	0.114	0.120	0.114	0.121
	0.000	0.000	0.000	0.000
Earnings Volatility	0.013	0.014	0.013	0.012
	0.007	0.007	0.007	0.006
Surprise	–0.01	0.00	0.00	0.00
	0.00	0.01	0.01	0.01
Board Independence	37.3%	57.6%	70.6%	83.4%
	40.0%	57.1%	71.4%	83.3%

The full sample consists of 75,875 firm-quarter observations from 1988 to 2002. All income numbers (excluding Surprise) are scaled by total assets per share at the end of the fiscal quarter. The variables are defined as follows: *Street Earnings* is the I/B/E/S reported actual earnings per share. *GAAP earnings* is the applicable basic or diluted income per share (matched to the I/B/E/S definition) before extraordinary items and discontinued operations (#19 or #9). *Street Exclusions* = Street Earnings – GAAP earnings. *Future GAAP* is GAAP earnings per share, as defined above, summed for 4 quarters starting with quarter q+1. *Total Assets* (#44) is measured at the end of quarter q. The log of this number is used in all statistical tests. *Growth* is obtained using common factor analysis on the four variables of *Book-to-MarketAssets*, *R&D*, *Sales Growth*, and *Investment Expenditures*. *Book-to-MarketAssets* is defined as book value of equity divided by the book value of debt plus market value of equity at the end of the quarter (#60 / [181+{#61 times #14}]). *R&D* is calculated as R&D expense divided by the market value of assets (#46/[181+{#61 times #14}]). *Sales Growth* is the change in sales from quarter q–4 to q (#2). *Investment Expenditures* is calculated as capital expenditures divided by market value of assets (#30/[181+{#61 times #14}]). *Analysts* is the number of I/B/E/S analysts following the firm. *Loss* is an indicator variable that is equal to one if GAAP earnings (#25) is less than zero, and zero otherwise. *Earnings volatility* is the standard deviation of return on assets (#25 divided by #44) over the preceding eight quarters. *Surprise* is Street Earnings – I/B/E/S forecast, the most recent median forecast preceding the earnings announcement date. *Board Independence* is the percent of board members that are independent in the fiscal year containing quarter q. The earliest year of available board data is extrapolated to all preceding years. All financial statement variables are winsorized at the 1% and 99% levels.

TABLE 3

Correlation Table - (Pearson above the diagonal and Spearman below)

	Percent Board Indep.	*Street EPS*	*GAAP EPS*	*Street Excl-usions*	*Future GAAP EPS*	*Log of Total Assets*	*Growth*	*Analysts*	*Loss*	*Earnings Volatility*	*Surprise*
Percent Board Indep.		–0.103 *(0.0001)*	–0.084 *(0.0001)*	0.007 *(0.0561)*	–0.107 *(0.0001)*	0.225 *(0.0001)*	–0.129 *(0.0001)*	0.105 *(0.0001)*	0.010 *(0.0041)*	–0.033 *(0.0001)*	0.002 *(0.6245)*
Street EPS	–0.120 *(0.0001)*		0.829 *(0.0001)*	–0.045 *(0.0001)*	0.683 *(0.0001)*	–0.218 *(0.0001)*	0.369 *(0.0001)*	0.099 *(0.0001)*	–0.459 *(0.0001)*	–0.036 *(0.0001)*	0.097 *(0.0001)*
GAAP EPS	–0.121 *(0.0001)*	0.910 *(0.0001)*		–0.555 *(0.0001)*	0.634 *(0.0001)*	–0.146 *(0.0001)*	0.326 *(0.0001)*	0.059 *(0.0001)*	–0.623 *(0.0001)*	–0.121 *(0.0001)*	0.087 *(0.0001)*
Street Exclusions	0.036 *(0.0001)*	–0.024 *(0.0001)*	–0.283 *(0.0001)*		–0.139 *(0.0001)*	–0.027 *(0.0001)*	–0.068 *(0.0001)*	0.051 *(0.0001)*	0.455 *(0.0001)*	0.145 *(0.0001)*	0.008 *0.0272*
Future GAAP EPS	–0.140 *(0.0001)*	0.730 *(0.0001)*	0.713 *(0.0001)*	–0.118 *(0.0001)*		–0.194 *(0.0001)*	0.290 *(0.0001)*	0.047 *(0.0001)*	–0.346 *(0.0001)*	–0.087 *(0.0001)*	0.039 *(0.0001)*
Log of Total Assets	0.241 *(0.0001)*	–0.318 *(0.0001)*	–0.299 *(0.0001)*	0.044 *(0.0001)*	–0.315 *(0.0001)*		–0.268 *(0.0001)*	0.522 *(0.0001)*	–0.074 *(0.0001)*	–0.295 *(0.0001)*	0.011 *(0.0018)*
Growth	–0.162 *(0.0001)*	0.453 *(0.0001)*	0.440 *(0.0001)*	–0.091 *(0.0001)*	0.407 *(0.0001)*	–0.329 *(0.0001)*		–0.037 *(0.0001)*	–0.168 *(0.0001)*	0.046 *(0.0001)*	0.042 *(0.0001)*
Analysts	0.105 *(0.0001)*	0.072 *(0.0001)*	0.045 *(0.0001)*	0.068 *(0.0001)*	0.031 *(0.0001)*	0.528 *(0.0001)*	–0.029 *(0.0001)*		–0.038 *(0.0001)*	–0.050 *(0.0001)*	0.007 *(0.0423)*
Loss	0.012 *(0.0007)*	–0.425 *(0.0001)*	–0.558 *(0.0001)*	0.300 *(0.0001)*	–0.310 *(0.0001)*	–0.072 *(0.0001)*	–0.188 *(0.0001)*	–0.049 *(0.0001)*		0.241 *(0.0001)*	–0.060 *(0.0001)*
Earnings Volatility	–0.058 *(0.0001)*	0.159 *(0.0001)*	0.114 *(0.0001)*	0.064 *(0.0001)*	0.123 *(0.0001)*	–0.400 *(0.0001)*	0.118 *(0.0001)*	–0.074 *(0.0001)*	0.236 *(0.0001)*		–0.018 *(0.0001)*
Surprise	–0.009 *(0.0099)*	0.313 *(0.0001)*	0.274 *(0.0001)*	0.034 *(0.0001)*	0.248 *(0.0001)*	–0.087 *(0.0001)*	0.244 *(0.0001)*	–0.008 *(0.0286)*	–0.163 *(0.0001)*	0.104 *(0.0001)*	

There are a maximum of 75,875 firm-quarter observations from 1988 to 2002. The variables are defined as follows, with all income numbers scaled by assets per share at the end of the fiscal quarter: *Street EPS* is the I/B/E/S reported actual earnings per share. *GAAP EPS* is the applicable basic or diluted income per share (matched to the I/B/E/S definition) before extraordinary items and discontinued operations (#19 or #9). *Street Exclusions* = Street EPS – GAAP EPS. *Future GAAP EPS* is GAAP Earnings per share, as defined above, summed for 4 quarters starting with quarter q+1. *Total Assets* (#44) is measured at the end of quarter q. The log of this number is used in all statistical tests. *Growth* is obtained using common factor analysis on the four variables of *Book-to-MarketAssets*, *R&D*, *Sales Growth*, and *Investment Expenditures*. *Book-to-MarketAssets* is defined as book value of equity divided by the book value of debt plus market value of equity at the end of the quarter (#60 / [181+{#61 times #14}]). *R&D* is calculated as R&D expense divided by the market value of assets (#46/[181+{#61 times #14}]). *Sales Growth* is the change in sales from quarter q–4 to q (#2). *Investment Expenditures* is calculated as capital expenditures divided by market value of assets (#30/[181+{#61 times #14}]). *Analysts* is the number of I/B/E/S analysts following the firm. *Loss* is an indicator variable that is equal to one if GAAP earnings (#25) is less than zero, and zero otherwise. *Earnings volatility* is the standard deviation of return on assets (#25 divided by #44) over the preceding eight quarters. *Surprise* is Street EPS – I/B/E/S forecast, the most recent median forecast preceding the earnings announcement date. *Percent Board Independence* is the percent of board members that are independent in the fiscal year containing quarter *q*. The earliest year of available board data is extrapolated to all preceding years. All financial statement variables are winsorized at the 1% and 99% levels.

TABLE 4
Percentage of Board Independence by Industry

Industry Name	# of Obs	Mean	Median
Agriculture, Forestry, Fishing	172	63.1%	71.4%
Mining and Construction	1,408	63.1%	70.0%
Food and Tobacco	2,200	60.1%	60.0%
Textile and Apparel	1,363	49.9%	50.0%
Lumber, Furniture, Paper Printing	4,054	63.0%	64.3%
Chemicals	2,687	67.8%	70.0%
Refining and Extractive	3,017	63.7%	66.7%
Heavy Industry—Rubber, Leather, Concrete, Metal, Machinery, Manufacturing	16,091	65.3%	66.7%
Computers, Semiconductors, And Computer Services	8,905	60.6%	62.5%
Transport, Pipelines, Telecom	3,694	57.0%	57.1%
Utilities	5,667	72.3%	73.3%
Wholesale, Retail, Restaurants	8,711	56.4%	57.1%
Services	4,741	56.1%	56.3%
Banks and Insurance	10,444	63.6%	66.7%
Drugs and Medical Equipment	2,721	61.2%	66.7%
Total:	**75,875**		

There are a total of 75,875 observations. Board Independence is the percent of board members that are independent in the fiscal year containing quarter q. The earliest year of available board data is extrapolated to all preceding years. Industry classifications are based on Frankel, Johnson and Nelson (2002).

TABLE 5 – Quarterly Regressions of Future GAAP on Street Exclusions

Independent Variables	Predicted Sign	Dependent Variable: *Future GAAP earnings* — Mean Quarterly Regression Est. (Newey-West t-statistic) 1988–2002			Mean Quarterly Regression Est. (Newey-West t-statistic) 1997–2002		
Intercept		0.01	0.01	0.04	–0.003	0.001	0.03
		(4.09)	(6.18)	(11.12)	(–1.23)	(0.68)	(5.90)
Street Earnings	(+)	3.37	3.35	3.33	3.62	3.61	3.57
		(58.79)	(58.30)	(63.71)	(32.63)	(32.49)	(32.68)
Street Exclusions	(–)	–1.11	–1.57	–2.02	–0.90	–1.23	–1.37
		(–5.98)	(–6.49)	(–4.48)	(–5.16)	(–6.03)	(–1.77)
Independence Decile			–0.001	–0.001		–0.001	–0.001
			(–11.10)	(–7.16)		(–8.35)	(–7.90)
Street Excl. × Indep. Decile	**(+)**		**0.10**	**0.07**		**0.08**	**0.07**
			(3.82)	**(2.98)**		**(3.79)**	**(2.47)**
Log of Total Assets				–0.003			–0.002
				(–11.70)			(–6.32)
Growth				–0.002			–0.003
				(–4.25)			(–2.97)
Analysts				0.001			0.001
				(6.31)			(3.70)
Loss				0.006			–0.01
				(1.54)			(–1.79)
Earnings Volatility				–0.001			–0.002
				(–4.50)			(–4.16)
Log of Assets ×				0.02			0.04
Street Excl.				(0.57)			(1.11)
Growth ×				0.01			–0.02
Street Excl.				(0.21)			(–0.33)
Analysts × Street				0.002			–0.02
Excl.				(0.09)			(–0.68)
Loss × Street				1.23			1.36
Exclusions				(6.16)			(5.03)
Earn. Volatility ×				–0.07			–0.09
Street Excl.				(–1.78)			(–2.76)
Industry Indicators		*Not Incl.*	*Not Incl.*	*Included*	*Not Incl.*	*Not Incl.*	*Included*
Mean Qtrly Adj. R^2		*51.2%*	*51.5%*	*55.0%*	*49.1%*	*49.3%*	*53.7%*
Number of Obs.		*74,178*	*74,178*	*73,320*	*20,906*	*20,906*	*20,438*

The variables are defined as follows, with all income numbers scaled by assets per share at the end of the fiscal quarter: *Street Earnings* is the I/B/E/S reported actual earnings per share. *GAAP earnings* is the applicable basic or diluted income per share (matched to the I/B/E/S definition) before extraordinary items and discontinued operations (#19 or #9). *Street Exclusions* = Street Earnings – GAAP earnings. *Future GAAP earnings* is GAAP earnings per share, as defined above, summed for 4 quarters starting with quarter q+1. *Total Assets* (#44) is measured at the end of quarter q. The log of this number is used in all statistical tests. *Growth* is obtained using common factor analysis on the four variables of *Book-to-MarketAssets*, *R&D*, *Sales Growth*, and *Investment Expenditures*. *Book-to-MarketAssets* is defined as book value of equity divided by the book value of debt plus market value of equity at the end of the quarter (#60 / [181+{#61 times #14}]). *R&D* is calculated as R&D expense divided by the market value of assets (#46/[181+{#61 times #14}]). *Sales Growth* is the change in sales from quarter q–4 to q (#2). *Investment Expenditures* is calculated as capital expenditures divided by market value of assets (#30/[181+{#61 times #14}]). *Analysts* is the number of I/B/E/S analysts following the firm. *Loss* is an indicator variable that is equal to one if GAAP earnings (#25) is less than zero, and zero otherwise. *Earnings volatility* is the standard deviation of return on assets (#25 divided by #44) over the preceding eight quarters. Each of the control variables is decile ranked. Independence Decile is the decile rank of the percent of board members that are independent in the fiscal year containing quarter q. The 1988–2002 sample extrapolates the earliest year of available board data to all preceding years. The 1997–2002 sample uses only those years for which there is available board data. Industry Indicators are indicator variables for each of the 48 industries following Fama and French (1997). All financial statement variables are winsorized at the 1% and 99% levels.

TABLE 6 – Quarterly Regressions of Future GAAP on Street Exclusions for Non-Zero Street Exclusion Firms

		Dependent Variable: *Future GAAP earnings*					
Independent Variables	Predicted Sign	Mean Quarterly Regression Est. (Newey-West t-statistic)			Mean Quarterly Regression Est. (Newey-West t-statistic)		
		1988–2002			1997–2002		
Intercept		0.009	0.014	0.04	–0.003	–0.00	0.03
		(3.71)	(4.31)	(6.23)	(–0.85)	(–0.09)	(3.26)
Street Earnings	(+)	3.06	3.05	3.09	3.37	3.37	3.39
		(43.06)	(43.90)	(39.99)	(23.16)	(23.39)	(27.45)
Street Exclusions	(–)	–1.04	–1.49	–1.89	–0.85	–1.13	–1.10
		(–6.01)	(–6.21)	(–4.34)	(–5.33)	(–5.82)	(–1.53)
Independence Decile			–0.001	–0.004		–0.001	–0.001
			(–5.04)	(–1.97)		(–1.88)	(–1.69)
Street Excl. × Indep. Decile	**(+)**		**0.10**	**0.08**		**0.07**	**0.06**
			(3.85)	**(3.08)**		**(3.76)**	**(2.22)**
Log of Total Assets				–0.003			–0.002
				(–5.72)			(–3.48)
Growth				–0.02			–0.002
				(–3.66)			(–1.46)
Analysts				0.001			0.001
				(2.96)			(1.33)
Loss				–0.001			–0.01
				(–0.21)			(–2.88)
Earnings Volatility				–0.001			–0.002
				(–1.13)			(–3.63)
Log of Assets ×				0.02			0.04
Street Excl.				(0.90)			(0.82)
Growth ×				0.01			–0.04
Street Excl.				(0.20)			(–0.76)
Analysts × Street				0.01			–0.01
Excl.				(0.22)			(–0.21)
Loss × Street				1.24			1.36
Exclusions				(5.67)			(3.86)
Earn. Volatility ×				–0.07			–0.103
Street Excl.				(–2.06)			(–3.08)
Industry Indicators		*Not Incl.*	*Not Incl.*	*Included*	*Not Incl.*	*Not Incl.*	*Included*
Mean Qtrly Adj. R^2		*42.0%*	*42.6%*	*48.6%*	*42.0%*	*42.3%*	*48.7%*
Number of Obs.		*28,567*	*28,567*	*27,141*	*9,702*	*9,702*	*9,428*

The variables are defined as follows, with all income numbers scaled by assets per share at the end of the fiscal quarter: *Street Earnings* is the I/B/E/S reported actual earnings per share. *GAAP earnings* is the applicable basic or diluted income per share (matched to the I/B/E/S definition) before extraordinary items and discontinued operations (#19 or #9). *Street Exclusions* = Street Earnings – GAAP earnings. *Future GAAP earnings* is GAAP earnings per share, as defined above, summed for 4 quarters starting with quarter q+1. *Total Assets* (#44) is measured at the end of quarter q. The log of this number is used in all statistical tests. *Growth* is obtained using common factor analysis on the four variables of *Book-to-MarketAssets*, *R&D*, *Sales Growth*, and *Investment Expenditures*. *Book-to-MarketAssets* is defined as book value of equity divided by the book value of debt plus market value of equity at the end of the quarter (#60 / [181+{#61 times #14}]). *R&D* is calculated as R&D expense divided by the market value of assets (#46/[181+{#61 times #14}]). *Sales Growth* is the change in sales from quarter q–4 to q (#2). *Investment Expenditures* is calculated as capital expenditures divided by market value of assets (#30/[181+{#61 times #14}]). *Analysts* is the number of I/B/E/S analysts following the firm. *Loss* is an indicator variable that is equal to one if GAAP earnings (#25) is less than zero, and zero otherwise. *Earnings volatility* is the standard deviation of return on assets (#25 divided by #44) over the preceding eight quarters. Each of the control variables is decile ranked. Independence Decile is the decile rank of the percent of board members that are independent in the fiscal year containing quarter q. The 1988–2002 sample extrapolates the earliest year of available board data to all preceding years. The 1997–2002 sample uses only those years for which there is available board data. Industry Indicators are indicator variables for each of the 48 industries following Fama and French (1997). All financial statement variables are winsorized at the 1% and 99% levels.

TABLE 7 – Pooled Logistic Regression of Benchmark-Beating on Independence Deciles

Independent Variables	Predicted Sign	Dependent Variable: *Benchmark Beating*			
		Logit Estimate ($Pr > X^2$)		Logit Estimate ($Pr > X^2$)	
		1988–2002		1997–2002	
		All Firms	*Non-Zero Exclusions*	*All Firms*	*Non-Zero Exclusions*
Intercept		–4.07 (0.0001)	–2.30 (0.0001)	–3.67 (0.0001)	–1.94 (0.0001)
Independence Decile	**(–)**	**–0.01 (0.076)**	**–0.02 (0.003)**	**–0.01 (0.271)**	**–0.03 (0.008)**
Log of Total Assets		–0.01 (0.140)	–0.10 (0.0001)	0.03 (0.033)	–0.07 (0.0001)
Growth		0.03 (0.004)	–0.01 (0.336)	–0.03 (0.058)	–0.06 (0.001)
Analysts		0.13 (0.0001)	0.14 (0.0001)	0.141 (0.0001)	0.15 (0.0001)
Loss		1.66 (0.0001)	1.10 (0.0001)	1.62 (0.0001)	1.10 (0.0001)
Earnings Volatility		0.005 (0.539)	–0.004 (0.285)	0.029 (0.008)	–0.01 (0.655)
Likelihood Ratio		*1,909.73 (0.0001)*	*1,056.71 (0.0001)*	*906.02 (0.0001)*	*454.62 (0.0001)*
Number of Benchmark-Beating Observations		*3,366*	*3,366*	*1,556*	*1,556*
Number of Total Observations		*71,090*	*27,141*	*20,438*	*9,428*

The variables are defined as follows: *Benchmark Beating* is an indicator variable that is equal to one if GAAP earnings fall below the I/B/E/S forecast, but Street Earnings meet or exceed the I/B/E/S forecast, where *Street Earnings* is the I/B/E/S reported actual earnings per share, *GAAP earnings* is the applicable basic or diluted income per share (matched to the I/B/E/S definition) before extraordinary items and discontinued operations (#19 or #9) and the I/B/E/S forecast is the most recent median forecast preceding the earnings announcement date. Firms must have non-zero Street Exclusions to be included. Independence decile is the decile rank of the percent of board members that are independent in the fiscal year containing quarter q. The 1988–2002 sample extrapolates the earliest year of available board data to all preceding years. The 1997–2002 sample uses only those years for which there is available board data. *Total Assets* (#44) is measured at the end of quarter q. The log of this number is used in all statistical tests. *Growth* is obtained using common factor analysis on the four variables of *Book-to-MarketAssets*, *R&D*, *Sales Growth*, and *Investment Expenditures*. *Book-to-MarketAssets* is defined as book value of equity divided by the book value of debt plus market value of equity at the end of the quarter (#60 / [181+{#61 times #14}]). *R&D* is calculated as R&D expense divided by the market value of assets (#46/[181+{#61 times #14}]). *Sales Growth* is the change in sales from quarter q–4 to q (#2). *Investment Expenditures* is calculated as capital expenditures divided by market value of assets (#30/[181+{#61 times #14}]). *Analysts* is the number of I/B/E/S analysts following the firm. *Loss* is an indicator variable that is equal to one if GAAP earnings (#25) is less than zero, and zero otherwise. *Earnings volatility* is the standard deviation of return on assets (#25 divided by #44) over the preceding eight quarters. Each of the control variables is decile ranked. All financial statement variables are winsorized at the 1% and 99% levels.

TABLE 8 – Quarterly Regressions of Future Returns on Street Exclusions

Independent Variables	Predicted Sign	Dependent Variable: *Future Returns*			
		Mean Quarterly Regression Est. (Newey-West t-statistic)		Mean Quarterly Regression Est. (Newey-West t-statistic)	
		All Firm-Quarter Observations		Only Non-Zero Exclusions	
		1988–2002	1997–2002	1988–2002	1997–2002
Intercept		0.15 (3.18)	0.15 (0.96)	0.11 (2.56)	0.08 (0.63)
Street Exclusions	(–)	–0.12 (–3.20)	–0.16 (–4.17)	–0.09 (–2.02)	–0.15 (–2.74)
Independence Decile	(?)	–0.002 (–1.27)	–0.01 (–3.60)	–0.001 (–0.82)	–0.01 (–1.90)
Street Excl.* × *Indep. Decile	**(+)**	**0.08** **(2.34)**	**0.10** **(2.57)**	**0.05** **(1.07)**	**0.10** **(1.78)**
Book to Market Ratio	(+)	0.01 (0.26)	–0.01 (–0.10)	0.04 (1.04)	0.04 (0.42)
Log of MVE	(–)	–0.20 (–4.17)	–0.05 (–0.68)	–0.19 (–3.23)	–0.05 (–0.51)
Firm Beta (β_i)	(+)	0.11 (1.85)	0.16 (1.26)	0.10 (1.46)	0.15 (1.03)
Accruals	(–)	–0.09 (–6.00)	–0.12 (–5.88)	–0.08 (–3.99)	–0.10 (–3.50)
Momentum	(+)	0.05 (1.40)	–0.04 (–0.46)	0.08 (1.78)	–0.01 (–0.05)
Mean Quarterly Adjusted R^2		*6.5%*	*9.3%*	*8.1%*	*10.9%*
Number of Observations		*52,619*	*14,465*	*19,600*	*6,495*

The variables are defined as follows, with all earnings numbers scaled by total assets per share at the end of the fiscal quarter: *Future Returns* is the one year ahead abnormal compound buy-and-hold returns inclusive of all dividends and other distributions beginning two days after the earnings announcement and continuing for one year. In the event of delisting, CRSP's delisting return is first used, adjusting for the delisting bias documented in Shumway (1997), followed by the return on the market-value-weighted index. *Street Exclusions* = Street Earnings – GAAP earnings, where *Street Earnings* is the I/B/E/S reported actual earnings per share and *GAAP earnings* is the applicable basic or diluted income per share (matched to the I/B/E/S definition) before extraordinary items and discontinued operations (#19 or #9). *Independence Decile* is the decile rank of the percent of board members that are independent in the fiscal year containing quarter t. The 1988–2002 sample extrapolates the earliest year of available board data to all preceding years. The 1997–2002 sample uses only those years for which there is available board data. All financial statement variables are winsorized at the 1% and 99% levels. The *Book-to-Market Ratio* is constructed as the book value of equity (#60) divided by the market value of equity at the end of quarter t (#61 times #14). *Beta* is estimated using weekly returns over the two years prior to the initial fiscal quarter. *MVE* is the natural log of the size of the firm and is measured by the market value of equity at the end of quarter t. *Accruals* = GAAP earnings per share (#19) – cash from operations (#108). Sales Growth is the change in sales from quarter t–4 to t (#2). Variables are ranked monthly and assigned to deciles. The continuous value of the variables is replaced by decile-rank in the regressions. Regressions are estimated quarterly and mean coefficients are presented. Fama-MacBeth t-statistics, adjusted for serial correlation using the Newey-West correction (see footnote 20 for details), are shown in parentheses below the coefficients.

TABLE 9 – Quarterly Regressions of Future GAAP earnings on Street Exclusions and Insider Trading

Independent Variables	Predicted Sign	Dependent Variable: *Future GAAP earnings* Mean Quarterly Regression Estimate (Newey-West t-statistic)							
		All Firm-Quarter Observations				Only Non-Zero Street Exclusions			
		1988–1999		1997–1999		1988–1999		1997–1999	
Intercept		0.004 (2.94)	0.009 (6.22)	–0.007 (–7.53)	–0.003 (–2.38)	0.006 (3.16)	0.012 (5.96)	–0.010 (–4.81)	–0.002 (–0.67)
Street Earnings	(+)	3.34 (56.80)	3.32 (56.33)	3.63 (28.92)	3.62 (29.03)	3.03 (43.48)	3.01 (44.16)	3.37 (21.65)	3.38 (21.97)
Street Exclusions	(–)	–1.10 (–4.83)	–1.06 (–4.77)	–0.72 (–3.72)	–0.72 (–3.86)	–1.04 (–5.02)	–1.01 (–4.97)	–0.73 (–3.83)	–0.75 (–3.95)
Insider Trading Decile		0.001 (6.34)	0.003 (6.47)	0.002 (5.56)	0.002 (5.87)	0.002 (5.31)	0.001 (5.29)	0.002 (6.11)	0.002 (6.30)
Street Exclusions* × *Abs (Insider Trading) Decile	**(–)**	**0.01 (0.35)**	**–0.09 (–2.42)**	**0.01 (–0.47)**	**–0.05 (–1.85)**	**0.01 (0.53)**	**–0.09 (–2.35)**	**0.02 (0.78)**	**–0.03 (–1.29)**
Independence Decile			–0.001 (–11.26)		–0.001 (–5.20)		–0.001 (–8.91)		–0.001 (–1.89)
Street Exclusions* × *Abs (Insider Trading) Decile* × *Independence Decile	**(+)**		**0.02 (3.11)**		**0.01 (3.66)**		**0.02 (3.32)**		**0.01 (4.43)**
Mean Quarterly Adjusted R^2		*53.0%*	*53.3%*	*50.2%*	*50.4%*	*43.7%*	*44.3%*	*43.6%*	*43.8%*
Number of Observations		*63,355*	*63,355*	*11,994*	*11,994*	*23,442*	*23,442*	*5,479*	*5,479*

The variables are defined as follows, with all income numbers scaled by assets per share at the end of the fiscal quarter: *Street Earnings* is the I/B/E/S reported actual earnings per share. *GAAP earnings* is the applicable basic or diluted income per share (matched to the I/B/E/S definition) before extraordinary items and discontinued operations (#19 or #9). *Street Exclusions* = Street Earnings – GAAP earnings. *Future GAAP earnings* is GAAP earnings per share, as defined above, summed for 4 quarters starting with quarter q+1. *Abs (Insider Trading) Decile* is the decile rank of the absolute value of managerial insider net sales from the day following the earnings announcement through the end of the quarter, calculated as $[\sum_{i=1,h=1}^{I,H} (SS_{ih} / SH_{ih}) - \sum_{i=1,h=1}^{I,H} (SP_{ih} / SH_{ih})]$ where SS_{ih}, SP_{ih}, SH_{ih} are shares sold in the open market, purchased in the open market, and held by officer i for each post-announcement trade h for the given firm in the given quarter. This data is only available through the first quarter of 2000. *Independence Decile* is the decile rank of the percent of board members that are independent in the fiscal year containing quarter q. The 1988–2002 sample extrapolates the earliest year of available board data to all preceding years. The 1997–2002 sample uses only those years for which there is available board data. All financial statement variables are winsorized at the 1% and 99% levels.

TABLE 10 – Quarterly Regressions of *Inclusions* on Board Independence

Independent Variables	Pred. Sign	Dependent Variable: *First Call Inclusions* — Quarterly Regression Estimate (Ordinary Least Squares t-statistic)							
		All Firm-Quarter Observations				Only Non-Zero Street Exclusions			
		1988–1999		1997–1999		1988–1999		1997–1999	
Intercept		0.036 (13.13)	0.035 (2.07)	0.033 (10.48)	0.039 (2.26)	0.037 (13.08)	0.037 (2.06)	0.035 (10.75)	0.043 (2.37)
Independence Decile	(–)	**–0.002** **(–4.07)**	**–0.001** **(–1.84)**	**–0.002** **(–3.40)**	**–0.001** **(–1.96)**	**–0.002** **(–4.33)**	**–0.001** **(–2.21)**	**–0.003** **(–4.04)**	**–0.002** **(–2.46)**
Log of Total Assets			–0.005 (–6.02)		–0.003 (–2.95)		–0.004 (–5.46)		–0.003 (–2.82)
Growth			–0.001 (–1.29)		–0.001 (–1.38)		–0.001 (–1.50)		–0.001 (–1.44)
Analysts			0.001 (0.81)		–0.000 (–0.41)		0.0001 (0.17)		–0.001 (–0.69)
Loss			0.024 (6.42)		0.017 (3.91)		0.022 (5.63)		0.014 (3.27)
Earnings Volatility			–0.0003 (–0.44)		–0.0004 (–0.54)		0.0001 (0.14)		–0.0002 (–0.21)
Industry Indicators		*Not Incl.*	*Included*	*Not Incl.*	*Included*	*Not Incl.*	*Included*	*Not Incl.*	*Included*
Mean Quarterly Adjusted R^2		*0.19%*	*2.08%*	*0.23%*	*1.87%*	*0.23%*	*2.19%*	*0.36%*	*2.21%*
Number of Observations		*8,306*	*8,074*	*4,621*	*4,518*	*7,764*	*7,544*	*4,247*	*4,151*

The variables are defined as follows, with all income numbers scaled by assets per share at the end of the fiscal quarter: *Inclusions* are those exclusions made by managers that First Call included in actual earnings. *Independence Decile* is the decile rank of the percent of board members that are independent in the fiscal year containing quarter q. The 1988–2002 sample extrapolates the earliest year of available board data to all preceding years. The 1997–2002 sample uses only those years for which there is available board data. *Total Assets* (#44) is measured at the end of quarter q. The log of this number is used in all statistical tests. *Growth* is obtained using common factor analysis on the four variables of *Book-to-MarketAssets*, *R&D*, *Sales Growth*, and *Investment Expenditures*. *Book-to-MarketAssets* is defined as book value of equity divided by the book value of debt plus market value of equity at the end of the quarter (#60 / [181+{#61 times #14}]). *R&D* is calculated as R&D expense divided by the market value of assets (#46/[181+{#61 times #14}]). *Sales Growth* is the change in sales from quarter q–4 to q (#2). *Investment Expenditures* is calculated as capital expenditures divided by market value of assets (#30/[181+{#61 times #14}]). *Analysts* is the number of I/B/E/S analysts following the firm. *Loss* is an indicator variable that is equal to one if GAAP earnings (#25) is less than zero, and zero otherwise. *Earnings volatility* is the standard deviation of return on assets (#25 divided by #44) over the preceding eight quarters. Each of the control variables is decile ranked. *Industry Indicators* are indicator variables for each of the 48 industries following Fama and French (1997). Coefficients are multiplied by 100, as *Inclusions* are small. All financial statement variables are winsorized at the 1% and 99% levels.