Institutional Investor Type, Misvaluation, and Governance *

Paul Borochin
School of Business
University of Connecticut†

Jie Yang
McDonough School of Business
Georgetown University‡

This version: January, 2016

Abstract

We find that ownership by different institutional investor types has distinct implications for future firm (mis-)valuation and governance characteristics, with firms held by dedicated institutions displaying more favorable characteristics and posting better long-term performance. Dedicated institutional investors decrease future firm misvaluation relative to fundamentals, as well as the magnitude of this misvaluation. Transient institutional investors have the opposite effect. Using Regulation FD as an exogenous shock to information dissemination, we find evidence that these effects are due to the advantage dedicated institutions have in firm-specific analysis. We use propensity score matching to rule out institutional self-selection into misvalued firms. A decomposition of investor types by portfolio turnover and diversification suggests the valuation effect primarily comes from the turnover dimension. These results implies a more nuanced relationship of institutional ownership with firm value and corporate governance.

Keywords: Institutional investors, investor type, dedicated, transient, misvaluation, portfolio selection, corporate governance

JEL classification: G30, G32, G14, G38

*We thank Reena Aggarwal and seminar participants at Georgetown University and University of Massachusetts Lowell. All remaining errors are our own.

†Storrs, CT 06269. Phone: (860) 486-2774. Email: paul.borochin@uconn.edu.

‡Washington, DC 20057. Phone: (202) 687-5497. Email: jie.yang@georgetown.edu.

"Institutional investors are not all the same. They come in many different forms and with many different characteristics."

- Commissioner Luis Aguilar, SEC, April 2013

1 Introduction

Institutional equity ownership has risen dramatically in the last 30 years, inviting a more thorough investigation into its effects on firm valuation and operations. In the 1980s, institutional investors held approximately 20%-30% of the average firm with individual investors making up the rest. By the 2010s, over 65% of the average firm is owned by institutional investors.[1] This increase in institutional holdings corresponds with the growing sophistication of the markets and importance of corporate governance. Indeed, much of the literature focuses on the informed "smart money" of institutional investor in contrast to the less sophisticated individual "retail" investor. Barber and Odean (2008) confirm that, unlike institutions, individual investors are net-buyers of attention grabbing stocks due to limited search resources. This improved ability of institutional investors to gather information and impose market discipline on management should translate into improvements in market efficiency and asset valuation. For example, Sias and Starks (1997) find that institutional trading increases the speed of adjustment of information into prices and Nagel (2005) find that short sale constraints bind for stocks with low institutional ownership, resulting in underperformance.

Yet, as suggested in a speech by Commissioner Luis Aguilar of the SEC,[2] not all institutional owners are alike or have the same effects on the firm. While many characteristics can be considered to differentiate investors in general, and institutions in particular, from one another, portfolio turnover and portfolio diversification are the most fundamental. Consistent with this view, Bushee (1998, 2001) finds that short-term ("transient") investors

[1] Based on data from Thomson Reuters s34 Holdings Database and corroborated by Blume and Kein (2012).

[2] http://www.sec.gov/News/Speech/Detail/Speech/1365171515808

lead to myopic investment decision-making by managers and over-weighting of near-term expected earnings to the detriment of long-term earnings. Myopic investment behavior leads to myopic corporate decision-making, destroying long-run potential for the firm. These previous findings suggest that subsets of institutional investors have unique investment objectives that may have differential impact on corporate decisions and firm valuation in firms where one subset of institutional ownership is dominant.

In this paper, we study how two of the most fundamental portfolio characteristics of institutional investors, portfolio turnover and diversification, affect the (mis)valuation and future performance of firms in which they invest. We conduct tests along these two dimensions both jointly and independently. We begin by using the Bushee (1998, 2001) classification of institutions into "transient" and "dedicated" investor types to study the impact of ownership types on a firm's growth potential and firm-specific misvaluation. Institutional investors are classified as "transient" if they hold highly diversified portfolios and have high portfolio turnover. Due to a short holding period and lack of focus on particular firms, these investors are likely to be myopic traders on short-term gains. On the other hand, "dedicated" investors hold focused portfolios with low turnover. Both of these portfolio characteristics make investors more likely to invest for the long run, gathering costly firm-specific information and trading on realized growth potential of a firm. Bushee (1998) finds evidence consistent with this interpretation as firms with predominantly dedicated (transient) institutional owners invest more (less) in R&D. Fig. (1) shows that transient institutional investors comprise an increasingly large portion of the total institutional investor pool, making an investigation into the effects of different institutional investor types particularly timely. We also consider whether the turnover or diversification dimension, or an interaction of the two, is responsible for these effects. To do this, we look beyond the previously-defined institutional types to the turnover and diversification dimensions separately and in combination to identify their independent and joint effects on the owned firm.

We find that firms with higher percentages of transient (dedicated) institutional investors experience more (less) subsequent misvaluation. Specifically, using the Rhodes-Kropf, Robinson, and Viswanathan (2005) book-to-market decomposition, firms with more transient (dedicated) institutional investors experience positive (negative) firm-specific deviation from fundamental values in the next quarter after investment is observed. Furthermore firms that increase their percentage of transient (dedicated) institutional investors experience more (less) misvaluation in the next quarter. We obtain the same results using an alternative definition of misvaluation following the Hirshleifer and Jiang (2010) approach of estimating deviations from fundamental value from managerial decision to issue or repurchase stock. We find that these effects are driven by information gathering costs by examining the relationship between institutional investor types and firm misvaluation around Regulation FD. This regulation addresses the problem of selective disclosure of material information by public companies to analysts or institutional investors, differentially affecting the informational advantage of dedicated institutional investors as information gatherers relative to transient institutional investors. The regulation mandates that when an issuer does disclose material nonpublic information to specific outsiders, this disclosure must be public thereby eliminating the informational advantage previously enjoyed by institutions (Ke, Petroni, Yu, 2008).

By unbundling the transient and dedicated classifications into their separate constituent dimensions of portfolio turnover and diversification, we shed further light on the causes of differences in firm selection between the two previously defined institutional types. We find that institutions in the lowest portfolio turnover tercile invest in firms with less overvaluation relative to fundamentals, and lower absolute magnitude of misvaluation. Institutions in the highest portfolio turnover tercile also hold firms with less overvaluation, but insignificant absolute deviation from fundamentals. Importantly, firms held by institutions that have diversified portfolios and either high *or* low portfolio turnover experience more overvaluation.

Finally, we document that firms held by a predominance of different types of institutional investors have significantly different characteristics that relate to performance and corporate

governance. Specifically, firms held by transient institutional investors have more tail risk, higher realized volatility, higher executive compensation, worse accruals quality, lower payout ratios, and lower leverage increases relative to those held by dedicated institutional investors. Firms held by transient investors experience highly positive abnormal returns relative to the 5-factor model in the subsequent quarter, whereas those held by dedicated investors experience positive abnormal performance later in the year consistent with longer investment horizons. Firms held by dedicated investors experience positive raw returns over the subsequent four quarters, whereas those held by transient investors experience negative or insignificant raw returns over the same period.

A large debate within this literature is whether institutional investors benefit the markets, either through improvements in market efficiency or by providing corporate governance, or whether they harm them through opportunism and pressure exerted on managers to achieve short-term results at the expense of long-term performance. While the literature generally accepts that institutional investors are more informed and allow markets to be more efficient (Sias and Starks, 1997; Nagel, 2005; Barber and Odean, 2008), there is still a large debate over the institutional benefits to governance and costs of induced myopia both among academics and practitioners. For example, Gillian (1995), Karpoff, Malatesta, and Walking (1996), Smith (1996), and Wahal (1996) find no long-term effects from shareholder activism while Nesbitt (1994), Smith (1996), and Huson (1998) find that firms targeted by CalPERS outperform in subsequent years. More recently, Brav, Jiang, Partnoy, and Thomas (2008) find a positive abnormal return for firms targeted by hedge fund activism. Conversely, a survey of over 1,000 board members and executives around the world conducted by the Canadian Pension Plan Investment Board and McKinsey and Company (Barton and Wiseman, 2014) draws attention to the effects of short-term investor pressure on corporate decisionmaking and its negative effects on value maximization. 79% of respondents felt pressured to demonstrate performance over a horizon of two years or less, and 44% used a horizon of three or less years to set corporate strategy while 86% stated that a longer horizon

would have improved finanical performance.

These seemingly dissonant effects of institutional ownership on firm performance can be explained by its heterogeneous nature. A growing literature suggests that combining all institutions into one category yields different, and likely mistaken, results than those that would be obtained by breaking them up into subtypes. Indeed, among the papers that find benefits to corporate governance, most focus on a specific type of institutional investor (e.g., CalPERS or hedge funds) rather than institutional investors as a group.

Our paper's main contribution lies in identifying the distinct effects of institutional investor types and investment styles on firm misvaluation and subsequent performance. The literature has already begun to subset the monolithic institutional investor into types: Bushee (1999, 2001) group institutional investors based on their investment horizon, portfolio turnover, and portfolio diversity and finds that "transient" institutional investors are related to myopic corporate decision-making while "dedicated" institutional investors are not. Gompers and Metrick (2001) find that large institutional investors invest in large companies, thereby increasing the prices of large stocks. Yan and Zhang (2009) show that these trends in large institutional investors is largely driven by short-term investors reacting and trading on new information. On the other hand, Gasper, Massa, and Matos (2005) show that acquisition targets held by short-term investors experience a lower premium and Chen, Harford, and Li (2007) find that only long-term investors are related to positive post-merger performance rather than focusing on short-term gains. We add to this growing literature by identifying how institutional portfolio turnover and diversification, both independently and jointly, affect the misvaluation, governance characteristics, and future performance of firms in which these institutions invest.

2 Data and Hypothesis Development

2.1 Institutional Ownership and Investor Types

Our data on institutional investor ownership comes from the Thomson Reuters Institutional Holdings database. The Thomson Reuters holdings data covers investment companies and their security holdings as reported on their 13F forms filed with the Securities and Exchange Commission (SEC) every quarter.[3]

We first classify institutional investor types based on the combination of portfolio turnover and diversification from Bushee (1998, 2001) and Bushee and Noe (2000). Bushee (1998, 2001) categorizes institutional investors as "transient", "quasi-indexers", or "dedicated" based on their investment horizons and portfolio diversification.[4] We use the permanent classifications, Investors are classified as "transient" if they have short investment horizons reflected by high portfolio turnover and highly diversified portfolio holdings. Alternatively, "dedicated" investors have long investment horizons reflected by low portfolio turnover and focused portfolio holdings. The third class of investors, "quasi-indexers", are long-horizon, low turnover investors that are highly diversified. We focus our analysis on "dedicated" (DED) and "transient" (TRA) institutional investors as they both have an active choice in their investment strategy: dedicated investors do not trade frequently, but hold specifically selected firms (and are therefore different from the passive indexers), while transient investors trade frequently. We do not analyze the "quasi-indexer" institutional ownership type because the passive ownership strategy does not imply any asset selection in either the time horizon or portfolio choice dimensions.

Table I presents the top ten dedicated and transient institutional investors from the Bushee (1998, 2001) classification by portfolio size in our sample. As expected, the "dedicated" list is comprised of investment management and insurance companies, which

[3] All institutions conducting business in the U.S. with investments over $100 million are required to disclose their list and shares held of Section 13F securities, which include exchange-traded stocks.

[4] We are grateful to Brian Bushee for providing this data on his website.

may be expected to hold stocks for long periods of time and some of which, like Berkshire Hathaway, are famous for it. On the other hand, many of the investment management firms on the "transient" list are affiliated with investment banks such as UBS, Morgan Stanley, and Oppenheimer.

To further motivate the distinctions between the two types of active institutional investors, we next consider empirical differences between their investment portfolio characteristics from their SEC Form 13-F quarterly reports. Table II demonstrates that dedicated and transient institutions have significantly different investment styles. Dedicated institutional investor average portfolios values are almost four times larger than transient ones, but they hold fewer stocks on average. Dedicated investors hold a larger percentage of each firm on average, and at the median, than transients do. They also have a significantly higher variation in these holdings, consistent with the large positions of dedicated blockholders.[5] Notably, dedicated investors hold firms with smaller average and median market capitalizations that are almost half of those held by transients, with a correspondingly lower variability in owned-firm capitalizations. This is consistent with dedicated investors possessing an information advantage, as smaller and younger firms are more opaque and difficult to analyze (Hadlock and Pierce, 2010; Karpoff, Lee, Masulis, 2013). Dedicated investors are indeed more focused, holding firms from fewer unique SIC-3 industries and have a much higher Hirshleifer-Herfindahl concentration in portfolio weights than do transient investors. Reassuringly, by definition, dedicated investors do indeed have more concentrated positions in firms relative to total shares outstanding and have lower portfolio turnover than transients. All investor characteristics between dedicated and transient institutional investors are significantly different at the 1% level.

Transient investors are more likely to enter and exit their positions quickly and aggressively, relying on publicly available information and strategies such as technical

[5]That is, while both dedicated and transient investors hold small stakes in some firms, dedicated are more likely to be blockholders in other firms, leading to the higher variation.

analysis to choose their investments (Bushee, 2001). In contrast, dedicated investors have more incentive to gather information and build relationships with their investments. Due to the information advantage that dedicated investors have relative to transient investors, we hypothesize that firms with more transient institutional investors are more misvalued while firms with more dedicated institutional investors are less misvalued. Similarly, an increase in dedicated institutional investors should lead to a decrease in misvaluation and vice versa for firms experiencing an increase in transient investors. We define overvaluation as a positive deviation from the firm's fundamental value, and misvaluation as absolute magnitude of any deviation from it.

Hypothesis 1. *Firms with a higher percentage of dedicated (transient) institutional investors experience less (more) overvaluation and misvaluation.*

Hypothesis 2. *Firms that experience an increase in dedicated (transient) institutional investors experience less (more) overvaluation and misvaluation.*

We next use the 13F data to stratify institutions into terciles on the individual dimensions of portfolio turnover and diversification. We define the "long horizon" investors as those in the lowest turnover tercile, and "short horizon" as those in the highest. Similarly, we compute HHI indices of institutional portfolios and define "focused" investors as those in the lowest diversification tercile and "diversified" as those in the highest. We hypothesize that the individual dimensions of diversification and investment horizon will have effects consistent with the combined definitions used by Bushee (1998, 2001), both jointly and independently.

Hypothesis 3. *Firms with a higher percentage of long-horizon or focused (short-horizon or diversified) institutional investors experience less (more) overvaluation and misvaluation.*

Hypothesis 4. *Firms that experience an increase in long-horizon or focused (short-horizon or diversified) institutional investors experience less (more) overvaluation and misvaluation.*

2.2 Misvaluation Measures

Our first estimate of misvaluation is the Rhodes-Kropf, Robinson, and Viswanathan (2005), hereafter RKRV, decomposition which splits the market to book ratio into three parts: firm-specific error, time-series sector error, and long-run market value to book. The RKRV decomposition is provided in equation (3) of their paper and reproduced below:

$$m_{i,t} - b_{i,t} = \underbrace{m_{i,t} - v(\theta_{i,t}; a_{j,t})}_{firm} + \underbrace{v(\theta_{i,t}; a_{j,t}) - v(\theta_{i,t}; a_j)}_{sector} + \underbrace{v(\theta_{i,t}; a_j) - b_{i,t}}_{long-run}$$

This decomposition relies on a firm having a long-run, target, market-to-book ratio that equals that of its industry. This ratio is determined by a parsimonious set of multiples on book value, leverage, and net income.[6] The firm's market-to-book ratio is comprised of a long-run market-to-book value determined from long-run multiples of the three variables used, with a time-varying sector-wide multiple component representing sector-wide deviations and firm-specific multiples accounting for any additional firm-specific deviations. Following, Rhodes-Kropf, Robinson, and Viswanathan (2005), these firm-specific deviations capture the degree of market misvaluation. We explore the impact of the different types of institutional investor on the firm-specific error, or misvaluation component. Positive firm-specific error is our proxy for overvaluation, and the absolute magnitude of the error for misvaluation.

We control for the potential dual-hypothesis problem with using the RKRV estimate of misvaluation by also considering an alternative misvaluation measure from Hirshleifer and Jiang (2010), hereafter HJ. While the RKRV measure uses deviations from long-run market multiples to approach the issue of misvaluation, the HJ measure uses managerial decisionmaking as the measurement of it. Specifically, Hirshleifer and Jiang (2010)

[6] Despite the small number of multiples considered, this measure fits the cross-section of market to book ratios within industries very well with an R^2 of .8 to .94.

hypothesize that managers that have inside knowledge that their firm is undervalued (overvalued) will repurchase (issue) shares. Indeed, the UMO factor earns abnormal returns and firms that have positive exposure to it appear to be undervalued. We use rolling 60-month regressions to estimate the firm's exposure to the UMO factor as the alternative measure of misvaluation:

$$r_{i,t} = \alpha_i + \beta_{i,t,1} MKTRF_t + \beta_{i,t,2} SMB_t + \beta_{i,t,3} HML_t + \beta_{i,t,4} UMD_t + \beta_{i,t,5} UMO_t + \varepsilon_{i,t}$$

A positive coefficient on UMO proxies for undervaluation, but for consistency with the direction of the RKRV measure, we define the HJ measure of firm-specific misvaluation as $-\beta_{i,t,5}$ such that a positive HJ measure again proxies for overvaluation. We also use the absolute value of the HJ measure to proxy for misvaluation, whether positive or negative.

The RKRV and HJ over/undervaluation measures indicate the direction of misvaluation. The absolute-value versions of both the RKRV and HJ measures allow us to study whether institutional investor types matter for both the direction as well as the overall magnitude of misvaluation of the firm. Since the RKRV and HJ measures draw on drastically different sets of information (market multiples in the case of the former, and insider decisions in the case of the latter), each serves as a useful robustness check on the validity of the other in measuring overvaluatin and misvaluation. Fig. (2) displays the direction and magnitude of misvaluation as measured by both the RKRV and HJ measures through time.

2.3 Financial Statement Data

In addition to institutional investor ownership and market misvaluation, we collect information on firm characteristics. We define firm characteristics based on financial statement data obtained from Standard and Poor's Compustat North American quarterly database from 1985 to 2012. All dollar amounts are chained to 2000 dollars using CPI to

adjust for inflation. We remove any firms with negative book asset value, market equity, book equity, capital stock, sales, dividends, debt, and inventory. Such firms have either unreliable Compustat data or are likely to be distressed or severely unprofitable. In addition, we delete observations in which book assets or sales growth over the quarter is greater than 1 or less than -1 and remove firms worth less than $5 million in 2000 dollars in book value or market value to remove observations that have abnormally large changes due to acquisitions or small asset bases. Next, we remove outliers defined as firm-quarter observations that are in the first and 99th percentile tails for all relevant variables used in our analysis. Following standard practice in the literature, we remove all firms in the financial and insurance, utilities, and public administration industries as they tend to be heavily regulated.

Merging institutional investor data to corporate financial data based on a firm's CUSIP and year-quarter gives us a sample of 252,697 firm-quarter observations spanning 11,118 firms. Table III provides the summary statistics for our main sample and Table IV presents the correlation matrix. The average (median) firm in our sample has 40.1% (36.5%) institutional ownership, with 4.6% (2.8%) of the firm owned by dedicated institutional investors and 27.6% (27.5%) owned by transient institutional investors. The correlation between dedicated and institutional ownership is -.22.[7] While there is a wide range of firm misvaluation, the average and median firm in our sample is overvalued (i.e., has positive firm-specific error) according to the RKRV measure, and undervalued (i.e., has positive loading on the UMO measure) according to the HJ measure.

We motivate our study by comparing some key characteristics of firms held by the two types of active institutional investors in Table V. We subset the data on the highest tercile of ownership by each investor type and find that the two active types hold firms with significantly different characteristics. This is consistent with the different investment styles and objectives evident in their different approaches to diversification and holding period.

[7]While this is not high enough to warrant concerns about multicollinearity when including both dedicated and transient ownership, we test for this by including only one at a time. All results hold.

Notable differences in firms each type chooses to hold signal potential notably different effects on firm valuation, operations, and performance. Specifically, we find that dedicated institutional investors hold larger firms than transient investors do, with average total asset values of $1,952.1 and $1,472.6 million respectively. Despite this, dedicated investors hold firms with insignificantly different market value than transient investors do, with average market values of $1,848.6 and $1,808.0 million respectively. These two observations taken together imply a value preference by dedicated investors relative to transient ones, and indeed the M/B ratio is significantly lower for firms held by dedicated relative to transient institutional investors, 1.378 to 1.833. Firms held by dedicated investors have more undervaluation under both RKRV and HJ misvaluation measures, further corroborating this value-seeking interpretation for dedicated institutional investors and implying that institution ownership type does have a significant relationship with firm misvaluation.

The tests of means also suggest significant differences in information quality for firms held by the two types: dedicated investors herd less, with the average number of institutional investors in firms they hold at 66.0, relative to the 79.6 in firms held by transient investors. Dedicated investors also hold firms with lower analyst following, 3.2 to 4.6 respectively, as well as a higher principal component of several opacity measures[8], consistent with an informational advantage in selecting less-followed and more opaque firms. Firms held by dedicated investors are also less likely to have a credit rating, further consistent with a preference of dedicated investors in holding firms with less publically available information.

Dedicated investors also select firms with significantly different operating characteristics than do transient investors: they have higher Z-scores, higher leverage, lower cash flow dispersion, lower realized volatility, a lower implied volatility spread across moneyness between OTM and ATM put options indicative of tail or crash risk for firm cash flows $IVspread_{mon}$,[9] lower average, maximum, and median executive pay, higher quality accruals,

[8]See Karpoff, Lee, and Masulis (2013) for details on constructing principal components of opacity proxies.
[9]See Borochin Yang (2015).

higher payout ratios, and higher net leverage changes.

Overall, these results are strongly indicative of differing investment preferences for the two institutional investor types, and find strong initial support for Hypothesis (1) and (2). The overlap between firms owned by dedicated, transient, long/short horizon, and focused/diversified institutional investors is imperfect but consistent with expectations. Firms owned by the largest number of dedicated investors also have more long-horizon and focused insititutional investors, though notably they also have more of the most diversified ones also. Firms owned by the largest number of transient investors also have more short-horizon institutional investors. This provides indirect support for Hypotheses (3) and (4). The differences observed in Table V also hold when we subsample firms based on the dollar amount of institutional ownership by type, rather than by the number of institutional investors of the type.

3 Main Results

3.1 Misvaluation and Institutional Investor Type

We test the importance of institutional investor type on misvaluation as detailed in Section 2 first in a baseline scenario with only the experimental type variables and fixed effects, then also in the presence of common controls for firm value, and further incorporating measures of information quality.

3.1.1 Baseline Model

We regress lagged levels of institutional ownership by type on valuation variables of interest $Y_{i,t}$ in the subsequent quarter to estimate the effects of institutional ownership on subsequent misvaluation. We consider four measures of misvaluation: the RKRV firm-specific error and the negative of the HJ firm-specific loading on the UMO factor as directional measures of misvaluation in terms of over/undervaluation, and their absolute-value equivalents as

measures of the magnitude of misvaluation.

$$Y_{i,t} = \alpha + \beta_1 pDED_{i,t-1} + \beta_2 pTRA_{i,t-1} + fe_t + fe_j + \varepsilon_{i,t} \quad (1)$$

Here $pDED$ is the percentage of dedicated institutional owners relative to the total number of institutional owners, and $pTRA$ is the percentage of transient institutional owners relative to the same. We control for macroeconomic effects with annual fixed effects, for seasonality with quarter dummies, for broad value changes with industry fixed effects, and cluster standard errors by firm and year-quarter. We next decompose the lagged level of ownership by type into the second lag of the level and the first lag of the change:

$$X_{i,t-1} \equiv X_{i,t-2} + \Delta X_{i,t-2,t-1} \quad (2)$$

This allows us to study the dynamics of the effect of ownership type on misvaluation by incorporating changes in ownership as well as levels, giving us a second version of the baseline model:

$$Y_{i,t} = \alpha + \beta_1 pDED_{i,t-2} + \beta_2 \Delta pDED_{i,t-1} + \beta_3 pTRA_{i,t-2} + \beta_4 \Delta pTRA_{i,t-1} + fe_t + fe_j + \varepsilon_{i,t} \quad (3)$$

We start with our baseline model by regressing the firm-specific RKRV misvaluation measures with fixed effects but without any controls, as defined in Eq. (1). We also report results for the dynamic decomposition including both levels and changes in institutional ownership by type following Eq.(3). Columns (1) through (4) of Table VI present the results for these baseline models.

Column (1) of Table VI shows that dedicated institutional investors hold more undervalued firms, while transient investors hold more overvalued firms. Both effects are signfiicant at the 1% level. Column (2) reports findings for the absolute misvaluation

measure, finding that transient institutional investors hold firms with higher subsequen overall misvaluation.[10] A 100% increase in the level of dedicated ownership reduces firm-specific misvaluation by -0.767, significant at the 1% level. Simultaneously, a 100% increase in the level of transient ownership increases firm-specific misvaluation by 0.388, also significant at the 1% level. This suggests that firms held by dedicated institutional investors in the prior quarter have lower market prices relative to firm-specific fundamental values than do firms held by transient institutional investors. A 100% increase in the level of transient ownership also increases the magnitude of misvaluation by 0.073, also significant at the 1% level.

We next decompose the levels of $pDED_{i,t-1}$ and $pTRA_{i,t-1}$ into the preceding period's level and change following include the effects of changes in institutional ownership type in columns (3) and (4) of Table VI, following equation (3). This allows us to test the effect of both levels and changes in institutional ownerhship by type, while at the same time minimizing endogeneity concerns resulting from a simultaneous analysis. These results support our prior findings, with the effects from changes in institutional ownership consistent with those from levels documented previously. Column (3) shows that value relative to fundamentals falls by -0.871 for a 100% increase in $pDED_{i,t-2}$, the level of dedicated institutional ownership, consistent with the -0.767 decrease documented in column (1), and falls further by -0.516 for a 100% increase in $\Delta pDED_{i,t-1}$, the change in dedicated ownership. Similarly, firm value relative to fundamentals rises by .452 for a 100% increase in $pTRA_{i,t-2}$, the level of transient institutional ownership, consistent with the .388 increase documented in column (1), and rises further by 0.410 for a 100% increase in $\Delta pTRA_{i,t-1}$, the change in transient ownership. All effects are significant at the 1% level. Column (4) presents the results for the magnitude of misvaluation, finding a weaker misvaluation effect on $pTRA_{i,t-2}$ significant at the 10% level.

[10] A highly significant constant term and relatively low R^2 of 5.8% suggest that additional variables need to be considered. This analysis follows.

3.1.2 Full Model

We next add control variables identified in the prior literature as relevant to firm information quality. This model extends equations (1) forming our full model:

$$\begin{aligned} Y_{i,t} = \alpha &+ \beta_1 pDED_{i,t-2} + \beta_2 \Delta pDED_{i,t-1} + \beta_3 pTRA_{i,t-2} + \beta_4 \Delta pTRA_{i,t-1} \\ &+ \beta_5 lnTA_{i,t-1} + \beta_6 pINST_{i,t-1} + \beta_7 HHI\_INST_{i,t-1} + \beta_8 Zscore_{i,t-1} + \beta_9 Leverage_{i,t-1} \\ &+ \beta_{10} LTCreditRating_{i,t-1} + \beta_{11} \sigma CF_{i,t-1} + \beta_{12} NumEst_{i,t-1} + \beta_{13} Opacity_{i,t-1} \\ &+ fe_t + fe_j + \varepsilon_{i,t} \end{aligned} \tag{4}$$

Here $lnTA$ is log-transformed total assets of the firm, $pINST$ is the total percentage of institutional ownership in the firm[11], HHI_INST is the Herfindahl measure of the concentration of institutional ownership in the firm, $Zscore$ is the Altman (1968) Z-score measure, $Leverage$ is the ratio of long-term debt to total assets, $LTCreditRating$ is an indicator variable for whether the firm has a credit rating, σCF is the standard deviation of cash flows over the prior 20 quarters[12], $NumEst$ is the number of analysts reporting EPS forecasts for the firm in a given quarter, and $Opacity$ is the principal component of opacity proxies following the approach of Karpoff, Lee, and Masulis (2013): log of firm age, log of firm size, and average bid-ask spread, standard deviation of returns, Amihud ratio, and skewness of the Fama-French 3-factor model residuals over the prior year.[13] Since this principal component includes the Amihud ratio and bid-ask spread, this effectively controls for firm liquidity as well.[14] We add annual fixed effects to control for the macroeconomic

[11] This includes all types of institutional ownership such as quasi-indexers in the Bushee (2008) framework.

[12] We also consider standard deviations of Earnings and Sales over the same time period, with no difference in the observed results.

[13] This principal component has a correlation between 70-98% with larger sets of information asymmetry proxies similar to those used by Karpoff, Lee, and Masulis (2013), including number of analysts, analyst dispersion, and analyst error. We use the more parsimonious set of proxies to maximize the number of usable observations due to the relatively lower availability of analyst observations from IBES.

[14] We repeat the analysis with separate control variables for Amihud ratio and bid-ask spread, and find no difference in results.

environment, SIC3 fixed effects to control for variation across industries, quarter dummies to control for seasonality, and cluster standard errors by firm and year-quarter.

Table VII presents the results for our full model of market to book and misvaluation on institutional investor type in equation (4). Column (1) confirms prior findings about the distinct effects of dedicated and transient institutional ownership on misvaluation in the presence of valuation controls. These results are also consistent with column (3) of Table VI. A 100% increase in the level of dedicated ownership reduces firm-specific misvaluation by -0.476, and a 100% increase in the change in dedicated ownership reduces firm-specific misvaluation by -0.280, both significant at the 1% level. Similarly to prior findings, a 100% increase in the level of transient ownership increases overvaluation by 0.142, and a 100% incrase in the change of transient ownership increases it by 0.264.

Column (2) reports a significant positive effect on the magnitude of misvaluation for both levels and changes of transient institutional investors, consistent with column (4) of Table VI. A 100% increase in the level of transient ownership increases the magnitude of misvaluation by 0.133, and a 100% incrase in the change of transient ownership increases it further by 0.083. Columns (3) and (4) add the additional *Opacity* principal component of various opacity measures as a control for availability of information. Notably, this only strengthens our results with larger coefficients on all experimental variables but the level of transient ownership, and increases the R^2. This is consistent with information asymmetries playing a role in the preferences of institional investor types, particularly dedicated institutional investors.

4 Robustness

4.1 Alternative Misvaluation Measure

We test the robustness of our prior findings by repeating the analysis in Table VII with a different measure of misvaluation. The HJ measure, the negative of the coefficient of

the firm's exposure to the UMO undervaluation factor (producing an *overvaluation*) factor consistent in direction with the RKRV measure, is based on insider signaling rather than firm fundamental multiples. The authors of the measure, Hirshleifer and Jiang (2010), hypothesize that managers who have private information about the overvaluation of their firm will issue equity to take advantage of this informational advantage, and repurchase equity if they have private information about undervaluation. Consistent with these expectations, the UMO factor as a portfolio long equity repurchasers and short equity issuers is able to identify overvalued and undervalued firms by its explanatory power for the firm's returns. Since the HJ measure is derived with respect to a completely different set of information than the RKRV measure, we can expect the two to be good robustness checks for one another.

Table VIII displays the results of estimating Eq. (1), (3), and (4) for the HJ measure of misvaluation and its absolute value as the measure of the magnitude of misvaluation. Column (1) finds results consistent with Column (1) of Table VI, with the lagged level of transient insitutional ownership resulting in a positive HJ coefficient consistent with overvaluation. Column (2) reports similar results for the absolute value of the coefficient as a proxy for the magnitude of misvaluation. A 100% increase in the level of transient ownership increases the loading on the overvaluation factor by 0.228, and the magnitude of the loading by 0.460. This is consistent with prior findings for the RKRV measure for transient institutional ownership. Notably, there are no statistically significant effects for dedicated institutional ownership.

Columns (3) and (4) of Table VIII repeats the decomposition of the lagged level of ownership into the second lag of the level and the first lag of the change in the level of ownership to estimate the dynamic effect of institutional ownership on misvaluation. The positive coefficient on the overvaluation factor is consistent with prior findings in Column (3) of Table VI, though only the level of transient ownership has a significant effect. However, both the level and change in transient ownership have the expected positive relationship with the magnitude of misvaluation in Column (4), consistent with the results in Column (4) of Table VI. In other words, using the alternative misvaluation measure to control for the dual

hypothesis test implicit in the use of any misvaluation measure as a proxy of unobserved misvaluation produces consistent results under both the HJ and RKRV misvaluation proxies. This evidence suggests that the proxies for misvaluation are valid.

Columns (5) through (8) of Table VIII introduce the set of controls from Eq. (4) and uses the HJ misvaluation measure in the same set of models reported for the RKRV measure in Table VII. Column (5) of Table VIII finds results significant at the 5% level for the positive contribution of the level of transient institutional ownership for overvaluation, consistent with prior results. Column (6) finds stronger results, also highly consistent with prior findings, that both the level and change of transient institutional ownership increases the magnitude of misvaluation while the level of dedicated ownership reduces it. Finally, Columns (7) and (8) introduce the additional *Opacity* control to account for potential information asymmetries. The inclusion of this control variable makes the directional misvaluation results in Column (7) weaker than those reported in Column (3) of Table VII, with only the level of transient ownership increasing overvaluation with significance at the 10% level. However, Column (8) reports strong results highly consistent with Column (4) of Table VII, with both the level and change of dedicated ownership reducing the magnitude of misvaluation, and both the level and change of transient ownership increasing it.

We therefore establish a strong relationship between institutional investor ownership by type, including changes in the amounts of ownership, and misvaluation. These results are robust to a battery of controls and time and industry fixed effects. We next consider whether the valuation advantage enjoyed by dedicated investors is due to an information channel. To do this, we make use of an exogenous shock to the informational advantage of dedicated institutional investors.

4.2 Exogenous Shock to Institutions' Information Asymmetry

In October 2000 the SEC implemented a selective disclosure and insider trading rule, informally known as Regulation FD, which prohibited selective disclosure of information to

institutions and required all material disclosures to be public. This serves as an exogenous shock to the informational advantage previaously enjoyed by institutions, improving market efficiency (Heflin, Subramanyam, Zhang, 2003) and affecting the information advantage of transient institutional owners around earnings announcements (Ke, Petroni, Yu, 2008). We take advantage of this exogenous shock to examine the importance of dedicated and transient ownership for firm misvaluation and risk. Specifically, we hypothesize that by reducing the informational advantage to dedicated institutional connections, this regulation will result in a lower degree of misvaluation for transient institutional owners that do not possess these connections to the same degree dedicated institional owners do.

The implemenation of Regulation FD allows for a difference-in-difference estimation for dependent variables of interest. We identify three potential treatment and control groups designated by three indicator variables, $isDED$, $isTRA$, and TvD. The first is comprised of firms with above-median dedicated institutional ownership at the end of 1999, for which the respective control group is all firms with below-median dedicated ownership. The second, of those with above-median transient institutional ownership with a corresponding below-median transient ownership control. The third is drawn from a subsample of only firms with above-median dedicated or institutional ownership, but not both. The treatment group in this subsample are those with above-median dedicated ownership, and the control group are those with above-median transient ownership.

We follow the standard difference-in-differences model by considering as our variable of interest the interaction term between the treatment indicator and the post-event indicator

on valuation variables of interest $Y_{i,t}$:

$$
\begin{aligned}
Y_{i,t} = {} & \alpha + \beta_1 isFD + \beta_2 isType_i + \beta_3 isFD \times isType_i + \beta_4 pDED_{i,t-2} \\
& + \beta_5 \Delta pDED_{i,t-2,t-1} + \beta_6 pTRA_{i,t-2} + \beta_7 \Delta pTRA_{i,t-2,t-1} + \beta_8 lnTA_{i,t-1} \\
& + \beta_9 pINST_{i,t-1} + \beta_{10} HHI\_INST_{i,t-1} + \beta_{11} Zscore_{i,t-1} + \beta_{12} Leverage_{i,t-1} \\
& + \beta_{13} LTCreditRating_{i,t-1} + \beta_{14} \sigma CF_{i,t-1} + \beta_{15} NumEst_{i,t-1} + \beta_{16} Opacity_{i,t-1} \\
& + fe_t + fe_j + \varepsilon_{i,t}
\end{aligned}
\tag{5}
$$

where $isFD$ is the indicator variable for the implementation of Regulation FD after 2000Q4 and captures effects that would occur in firms regardless of treatment effect, $isType$ is the indicator variable for whether the firm has an above-median level of institutional ownership by type (dedicated, transient, and one versus the other) as of 1999Q4 and captures possible differences between treatment and control groups in the absence of a policy change, and $isFD \times isType$ is the difference-in-difference variable of interest that captures the effect of the policy on the treatment group net of control.

One potential complication is treatment/control classification drift post-1999, to control for which we add the firm's level and change in dedicated and transient institutional ownership. We control for the level at $t-2$ and the change from $t-2$ to $t-1$ of institutional ownership by type, which is a decomposition of the $t-1$ level. The coefficients β_4 through $beta_7$ absorb effects due to a firm's potential change in in ownership composition after the 1999 classification.

We also control for firm characteristics as in Table VII. Finally, we again control for macroeconomic effects with annual fixed effects, for seasonality with quarter dummies, cluster standard errors by firm and year-quarter.

Table IX presents the results of our difference-in-difference model in equation (5) for the RKRV misvaluation measure. Columns (1) and (2) report findings for the effect of Reg FD

on the dedicated institutional investors. As we expect, there is no significant effect on the interaction term for the dedicated institutional type, both for the direction and magnitude of misvaluation. This is due to Reg FD not changing the informational set accessible to the better-informed dedicated investors.

However, when we consider the effects of Reg FD on transient institutional investors, we find significant results for the direction of RKRV misvaluation in the expected direction in Column (3), significant at the 5% level. As we would expect, by mandating public disclosure of material information and therefore reducing the information asymmetry between the less-informed transient and more-informed dedicated institutional investors, Reg FD increases the transient investors' information set and therefore reduces their overvaluation after the Regulation is implemented. There is no significant effect on the magnitude of transient institutional investors' misvaluation reported in Column (4).

Columns (5) and (6) of Table IX compare the responses of above-median transient institutional ownership to that of above-median dedicated ownership in 1999, TvD, to the Reg FD policy change. The treatment group is comprised of the $isTRA$ firms and the control group is comprised of the $isDED$ firms. Considering these smaller subsamples reduces our number of observations to 39,899 firm-quarters. However, this approach allows us to address more directly the potential information advantage enjoyed by dedicated institutional investors by directly comparing them to transient ones.

Column (5) shows the effect of the policy change on the direction of misvaluation, and finds that valuation relative to fundamentals falls for TvD, which is to say it falls for transient-institution-owned firms relative to dedicated-institution-owned ones. This effect is significant at the 10% level. Furthermore, Column (6) shows that the magnitude of misvaluation falls much more strongly for transient-owned relative to dedicated-owned firms, significant at the 1% level.

We further confirm these results by comparing them with a control group of firms selected

using propensity score matching for ownership type. This addresses the potential issue of self-selection by dedicated and transient institutional owners into firms with specific characteristics, such as misvaluation. That is, the effects we observe thus far could be due to two possible explanations: institutional investor types cause future misvaluation over the following quarter,[15] or they may simply choose to hold firms that are more likely to be misvalued in the future for reasons exogenous to the ownership decision.

4.3 Matched-firm analysis

There are two potential explanations of our results thus far: either institutional investor types cause distinct effects within the firms they own, or they simply choose to own firms that are distinctly different to begin with (i.e., selection bias). While our analysis is predictive and uses lagged explanatory variabels, we seek to further distinguish between these two potential explanations. To do this, we use a matching algorigthm to find a control firm with a similar misvaluation but different institutional ownership type for each (treatment) firm held by a particular institutional ownership type. This is similar to the approach taken by Almeida, Campello, Laranjeira and Wesibenner (2011) and Williamson and Yang (2015). Specifically, we use the Mahalanobis (1936) distance measure to match each firm prior to the enactment of Regulation FD in 2000 that *has* above-median dedicated or transient ownership with a contemporaneous control firm that does *not*, but is similarly misvalued both at the firm and sector levels and has similar size and book-to-market ratio. The Mahalanobis distance matching algorithm ensures a match on each of the matching characteristics, rather than relying on a propensity score.[16] The match quality is good, as is summarized in Table B.I in Appendix B: there are no significant differences between the sample and control firms

[15]This may be due to pressure on management in adopting specific policies or by making trades such as trend-following that affect market prices.

[16]For robustness, we also create propensity scores for each of these ownership types and identify control firms using propensity score matching. This, however, does not necessarily enforce the requirement that ex-ante firm misvaluation be similar across the sample and control firms, only that the propensity scores are similar. Nevertheless, the results are similar to the Mahalanobis approach and are therefore suppressed for brevity.

for above-median dedicated ($isDED$), above-median transient ($isTRA$), or above-median transient and below-median dedicated institutional ownership ($isTvD$).

We then test differences in next-period misvaluation by ownership type ($isDED$, $isTRA$, $isTvD$) before and after the implementation of Reg FD. Similarly, we also test this difference for Mahalanobis-matched control firms that are similarly misvalued in the current period, but do not have above-median ownership by the same institutional owner type. Next, we test the difference-in-differences between the treatment and control firms. This difference-in-difference provide us with a cleaner measure on whether there is a significant misvaluation change around Reg FD implementation due to each ownership type. Finally, our framework allows us to test a difference-in-differences-in-difference by comparing the difference-in-difference for $isDED$ against the difference-in-difference for $isTRA$. This is the difference between firms with above-median dedicated ownership versus above-median transient ownership, taking into account both the time effect (i.e., pre and post Reg FD) as well as the selection bias (i.e., relative to their matched control firms).

Table X summarizes the results of this difference analysis of next quarter's firm-specific over/undervaluation and misvaluation relative to control firms chosen using Mahalanobis distance matching based on contemporaneous RKRV firm- and sector-specific misvaluation, size, and book to market ratio. Panel A presents the results for next quarter's directional RKRV firm-specific over/undervaluation measure. We observe that the firms with high dedicated ownership (isDED=1), in Row (a), have no significant overvaluation one year prior to the implementation of Reg FD in Column (1), and substantially higher overvaluation one year post in Column (2). The difference between the two, reported at 0.208 in Column (3), is also statistically significant indicative of an increase in overvaluation after the implementation of Reg FD. This result may be due either to an increase in market efficiency as was the intention of Reg FD,[17] or to the overall increase in overvaluation in the market.

[17]By mandating the uniform disclosure of material information, Reg FD removes the informational advantage in finding undervalued firms previously enjoyed by dedicated institutions.

The matched control firms do demonstrate a similar increase in overvaluation between pre- and post-Reg FD periods of 0.180 in Column (6). Notably, there is no significant difference-in-differences in the changes in overvaluation of firms held by dedicated investors relative to the controls around Reg FD in Column (7), suggesting the absence of an informational effect due to Regulation FD on dedicated institutional investors.

We next consider the future over/undervaluation of firms with high transient ownership (isTRA=1), in Row (b), which are significantly overvalued both pre- and post-Reg FD in Columns (1) and (2) respectively. The difference of 0.083 is significant at the 5% level in Column (3). However, we see a much greater increase in overvaluation for the matched control firms in Columns (4) through (6) with a difference in control firm overvaluation around the implementation of Reg FD of 0.306 significant at the 1% level. This larger change in the control firms implies that there is an overall reduction in the overvaluation of firms held by transients around Reg FD in the difference-in-difference test in Column (7), with a magnitude of -0.223 significant at the 1% level. That is, when controlling for the self-selection of institutional types into firms using firm characteristics and contemporaneous firm- and sector misvaluation, we find that the implementation of Reg FD results in transient institutions investing in significantly less overvalued firms, consistent with Table IX.

We further compare the difference-in-difference results in Column (7) for transient and dedicated institutions to obtain a difference-in-difference-in-difference between the two institutional investor types relative to matched controls around the implementation of Reg FD in Column (8). We find a coefficient of -0.251 significant at the 1% level, implying that the decrease in future overvaluation of firms held by transients relative to matched controls, when compared to that of firms held by dedicated institutions relative to controls, decreased markedly around the implementation of the Reg FD disclosure requirement.

Finally, we refine the sample to exclude firms that have both above-median dedicated and transient ownership, creating the indicator variable TvD which takes the value of '1' only when the firm has above-median transient ownership and below-median dedicated ownership.

This additional restriction removes potential confounding effects of observing the effects of both institutional investor types on the same firm. The results for TvD, in Row (c), in Columns (1) through (7) closely match those of isTRA firms, with overvaluation falling relative to matched control firms after the implementation of Reg FD. These findings for the transient-held firms suggest that transient institutional investors experienced an information effect on future misvaluation around the implementation of Reg FD.

Panel B of Table X considers a similar matched-firm analysis for the next quarter's absolute magnitude of firm-specific RKRV misvaluation. We find that firms with above-median dedicated ownership in Row (a) do not experience a significant change in the absolute magnitude of misvaluation relative to control firms in the difference-in-difference analysis in Column (7) of Panel B. Firms with above-median transient ownership in Row (b), on the other hand, experience a reduction of -.175 in the magnitude of misvaluation relative to control firms significant at the 1% level in Column (7). Furthermore, the difference-in-difference-in-difference test in Column (8) also finds a reduction of -0.121 in the absolute magnitude of future firm-specific misvaluation between the transient-held firms and their controls relative to dedicated-held firms and their controls around Reg FD. When we exclude firms with both above-median transient and dedicated ownership in the TvD analysis in Row (c) in Panel B, we also observe a -0.164 reduction in the magnitude of misvaluation with a 5% significance level.

Overall the findings around the exogenous shock to the informational advantage of dedicated institutional investors from Regulation FD are in line with expectations, with the misvaluation experienced by firms owned by transient institutions falling, both in magnitude and direction. This is to be expected as the SEC regulation puts transient investors on a more even footing with their dedicated counterparts. In finding this effect, these results also support the interpretation of asymmetric information as one channel for the observed differences between firms owned by dedicated and transient investors. Furthermore, the propensity score matching tests show that these misvaluation effects are not merely due to

institutional self-selection into misvalued firms. The misvaluation of firms owned by transient institutions falls relative to that of matched control firms around the implementation of the regulation in the difference-in-difference analysis, and this decrease is significantly greater than that for firms owned by dedicated institutions in the difference-in-difference-in-difference.

4.4 Alternative Institutional Investor Types

While the prior results focus on the previously defined investor types from Bushee (1998, 2001), we now estimate the separate characteristics of institutional portfolio turnover and diversification. We then relate these simpler single-dimensional institutional investor types, as well as their interactions, to the RKRV misvaluation measure. To create the four basic institutional investor types (long horizon, short horizon, focused, and diversified) we use the Thomson 13F data to estimate the portfolio turnover and diversification characteristics for each institutional investor using the available history at each point in time.

We then form terciles on the dimensions of turnover and diversification in each quarter, and select the top turnover tercile as the "short-horizon" institutional type, and the bottom tercile as the "long-horizon". Similarly, we take the top diversification tercile as the "diversified" institutional type, and the bottom as the "focused". For each firm in our sample, we then compute the percentage held by each of these institutional investor types, as we had previously done with the Bushee (1998, 2001) definitions. We also identify the joint percentage held by institutions in specific terciles of both turnover and diversification to estimate conditional effects of these two fundamental portfolio decisions. That is, we estimate the percentage of the firm owned by long-horizon *and* focused institutional investors as that held by insitutions that are both in the lowest portfolio turnover tercile *and* the lowest diversification tercile. We create analogous ownership percentages for the three other possible combinations of the four basic institutional investor types.

Finally, as before, we decompose the lagged level of each ownership type into a second lag

of the level and first lag of the change in the ownership by a given institutional investor type. The correlation between these fundamental types is approximately 40% (see Table IV).

Table XI presents the effects of these fundamental institutional ownership types on RKRV misvaluation and its absolute magnitude in the full sample, as well as the pre- and post-Reg FD subsamples. Panel A presents the full-sample results for next quarter's firm-specific RKRV over/undervaluation and the absolute magnitude of misvaluation. Column (1) of Panel A shows that overall the lagged level and change in long-horizon institutional ownership surprisingly results in higher subsequent overvaluation significant at the 1% and 10% levels respectively, but notably so does lagged change in short-horizon institutional ownership, also significant at the 1% level. There is no ownership effect on the absolute magnitude of misvaluation in Column (2) for long-horizon ownership but both the lagged level and change in short-horizon institutional ownership increases the magnitude of misvaluation significant at the 5% level in both cases.

Columns (3) and (4) of Panel A present analogous full-sample findings for the focused and diversified institutional types. Consistent with expectations, we find that lagged levels and changes in focused institutional ownership decrease overvaluation, significant at the 10% and 1% levels respectively. Also consistent with prior results, lagged levels and changes in diversified ownership increase overvaluation with 1% level of significance for both. However, in Column (4) we find that it is only the diversified institutional types that reduce the magnitude of firm misvaluation, with both the level and change effects significant at the 5% and 10% levels respectively.

Columns (5) and (6) consider the joint effects of both horizon and diversification ownership types. Notice that long-horizon and focused investors are more likely to be dedicated whereas short-horizon and diversified investors are more likely to be transient investors. We find that the joint effect of focused ownership reduces subsequent overvaluation in Column (5) regardless of its conditional interaction with long- or short-horizon ownership. Similarly, diversified ownership increases subsequent overvaluation regardless of interaction

with horizon types. Consistent with Column (4), we find in Column (6) that diversified ownership reduces the magnitude of misvaluation regardless of any joint effects with institutional investment horizon. This result is surprising given that we previously found that TRA investors, those most likely to be short and diversified, increase the magnitude of misvaluation.

Given the information advantage for TRA investors with the enactment of Regulation FD, we split our full sample into pre and post Reg FD. Panel B presents results for the pre-Reg FD (pre-2000) subsample to test whether the disclosure requirement had an effect on the fundamental institutional ownership types. Panel C presents results for the post-Reg FD (post-2000) subsample to test whether the disclosure requirement had an effect on the fundamental institutional ownership types. The results are similar to that of the full sample along the long and short horizon investors (columns (1) and (2)). However, when we turn our attention to focused and diversified investors, we see that prior to the enactment of Regulation FD, diversified investors, in columns (3) and (4), as well as short-horizon and diversified investors, in columns (5) and (6), increase misvaluation both in the direction as well as the magnitude. It is only in the post-Reg FD period that this reverses. These results reinforce the idea that Regulation FD provided TRA investors with the information that previously only DED investors had.

Overall these findings present mixed evidence for Hypotheses 3 and 4. To a large degree, the effects of long-horizon and focused ownership appear to occur prior to the implementation of Reg FD. However, the effects of diversified ownership in increasing overvaluation but reducing misvaluation, are strengthened after its passage.

5 Institutional Investor Types, Firm Characteristics, and Performance

Finally, we consider the underlying firm characteristics that might be related to the observed misvaluation effects, and also the subsequent performance of the firms held by their respective institutional types beyond the next quarter. These findings provide information to market participants who may find themselves investing alongside these institutional investor types, so that they can form appropriate expectations about firms that are selected by either dedicated or transient institutions.

Table XII Panel A reports findings for some key characteristics related to firm performance and corporate governance in our full sample. We find that firms held by dedicated institutions have lower realized volatility and lower average, median, and maximum executive compensation. Firms held by transient institutions have higher tail risk as proxied by the $IVspread_{mon}$ implied volatility spread between out-of-the-money and in-the-money puts[18], higher realized volatility and executive pay, lower payout ratios than those in firms held by dedicated institutions, and lower leverage increases.[19]

While the informational advantage enjoyed by dedicated institutional investors prior to the implementation of Reg FD clearly plays a role in their effects on firm over- and misvaluation, the corporate governance characteristics considered in Table XII should be more directly observable to the institutional investor. We test this by subsampling into pre- and post-Reg FD subsamples in Panels B and C respectively, and indeed find that the effects of dedicated and transient ownership on the firm characteristics related to good governance are largely consistent through time. The only notable exception to this is the payout ratio whose negative coefficients become similar in magnitude post-2000.

Building on these findings, we next test the joint effects of the fundamental investor types

[18]See Borochin and Yang (2015) for details about this measure of tail risk.

[19]Borochin and Yang (2015) find that leverage increase is a significant signal of firm quality and is related to other quality firm characteristics.

along the dimensions of portfolio turnover and diversification to unbundle the dedicated and transient institutional investor definitions in Table XIII. We find results consistent with the investment horizon portions of Hypotheses 3 and 4. Long-horizon ownership levels and changes are associated with lower historical volatility, higher payout ratios, and net leverage increases, largely invariant to the diversification dimension. At the same time, short-horizon ownership is associated with higher tail risk, higher executive compensation, and lower payout ratios, also largely invariant to diversification.

Therefore, while the effects of dedicated and transient ownership on firm over- and misvaluation are shown to be largely due to the diversification dimension in Table XI, the corporate governance effects of these institutional ownership types are due to the portfolio turnover dimension as shown in Table XIII. The changes in over- and misvaluation effects found for dedicated and transient ownership around the implementation of Reg FD in Table IX and Table X, coupled with their strong relation to the diversification portfolio dimension, suggest that the diversification dimension in particular was sensitive to the information effect from Reg FD. The largely time-invariant firm characteristics in Table XII, coupled with their strong relation to the turnover portfolio dimension, suggest that institutional variation on investment horizon was not as big a driver of informational asymmetries addressed by Reg FD.

We also consider the raw and risk-adjusted performance of firms held by each institutional type over the following year. This analysis captures the long-term effects of both types of institutional investment on the firm, and is particularly relevant to market participants investing alongside these institutions. We risk-adjust returns using the Pastor and Stambaugh (2005) 5-factor model. Table XIV reports the raw performance over each of the next four quarters in Columns (1) through (4), and the 5-factor abnormal performance in Columns (5) through (8).

We find that firms held by transient institutions have insignificant or negative raw returns over the next four quarters. Conversely, firms held by dedicated institutions have positive

raw returns over the same period. The results become more compelling when we consider abnormal, rather than raw, performance. Transient institutional ownership results in highly significant abnormally positive returns in the first quarter, consistent with the previously documented myopic objectives of transient institutions (Bushee, 1998). These firms have no abnormal performance in any subsequent period considered. However, firms held by dedicated institutions have significant abnormal performance in Q2 and Q3 after dedicated ownership is observed, consistent with their long-term value objectives. Market participants may therefore be able to observe the type of institutional ownership and use it as a guide for the horizon of expected future performance.

Finally, we follow the monthly raw and risk-adjusted returns of firms over the next year in Figures 4 and 5. Figure 4 tracks the monthly returns and abnormal returns for firms with dedicated and transient institutional investors in Panels A and B, respectively. Consistent with the analysis in Table XIV, firms with more dedicated institutional investors realize raw returns of 17.7% over the following year, whereas firms with more transient institutional investors realize raw returns of 14.7%. That is, firms with more dedicated investors achieve 3.0% higher returns than those with more transient investors. However, when we turn to risk-adjusted or abnormal returns, firms with more dedicated (transient) institutional investors earn returns of 4.1% (3.8%), resulting in a difference of 0.3%.

Figure 5 repeats the previous figure by separating institutional investors based on portfolio turnover and diversification. Panels A and B of Figure 5 present the raw and risk-adjusted returns for firms with more long-horizon or short-horizon institutional investors. Panels C and D present the raw and risk-adjusted returns for firms with more focused or diversified institutional investors. We see that firms with more long-horizon institutional investors realize raw (abnormal) returns of 19.3% (5.7%) over the following year, whereas firms with more short-horizon institutional investors realize raw (abnormal) returns of 13.3% (2.9%) over the next year. This leaves firms with more long-horizon institutional investors with raw (abnormal) returns that are 6.0% (2.8%) higher than firms with more short-horizon

investors. In contrast, firms with more focused institutional investors realize raw (abnormal) returns of 15.2% (2.7%) while firms with more diversified institutional investors realize raw (abnormal) returns of 16.1% (4.9%) over the next year. This results in firms with more focused institutional investors earning raw (abnormal) returns 0.9% (2.1%) lower than firms with more diversified institutional investors. The net negative effect of focused investors is offset by the net positive effect of long-horizon investors, resulting in the 0.3% abnormal returns observed for dedicated investors in Figure 4.

These figures support the earlier finding that the higher firm performance observed with dedicated institutional investors, which are defined by Bushee (1998) as focused, long-term investors, is driven by lower portfolio turnover rather than by lower portfolio diversification. Furthermore, this superior long-horizon performance suggests that long-horizon investors are able to accomplish their investment objectives. In addition to providing insight about the causes of dedicated investor performance, these results have broader implications regarding the existence of portfolio manager ability. While we are able to address the ability of long-horizon managers to achieve long-horizon returns, our data are potentially not captured at sufficiently high frequency to address the ability of short-horizon managers to achieve short-horizon returns. At any rate, we do not find any superior short-term performance by firms they hold in our sample.

6 Conclusion

Institutional ownership can have starkly different effects on firm valuation, depending on the type of institutional investor involved. Dedicated institutional investor ownership reduces future misvaluation, while transient institutional investor ownership increases it. Using the Bushee (1998, 2001) classification of institutional investor types, we show these effects on the direction and magnitude of the firm-specific valuation error relative to fundamentals from Rhodes-Kropf, Robinson, and Viswanathan (2005). Specifically, dedicated institutional

ownership is correlated with lower future firm-specific misvaluation and long-run valuation multiples, whereas transient institutional ownership has the opposite relationship.We find similar effects for the absolute magnitude of misvaluation, with dedicated institutional ownership reducing the magnitude of firm-specific misvaluation and long-run value to book, and transient institutional ownership increasing it. These results are corroborated by an alternative misvaluation measure from managerial decision making following Hirshleifer and Jiang (2010).

Furthermore, decomposing the level of institution ownership by type into the prior period's level and the change with respect to the current period, we find that changes in ownership type have the same effect as the level. This suggests that the effects of institutional ownership types become stronger as the degree of institutional ownership of the particular type becomes more pronounced. These results persist and become stronger in the presence of measures of information quality, suggesting a connection between ownership type and the ability to interpret firm-specific information.

We examine this issue further using the exogenous shock of the SEC's introduction of Regulation Fair Disclosure (Reg FD) in 2000, which requires firms to disclose material information publicly. Prior to this regulation, firms could reveal information to preferred institutional owners, contributing to the informational advantage enjoyed by them. We find evidence consistent with an informational advantage enjoyed by dedicated institutional owners prior to the introduction of Reg FD in 2000. The policy change has a negative effect on firm-specific misvaluation for transient institutional owners, both in the direction and magnitude of misvaluation. Furthermore, we consider subsequent over- and misvaluation effects relative to firms matched on contemporaneous misvaluation and characteristics to demonstrate that these effects are not due to self-selection of institutional investors into misvalued firms.

We also consider more fundamental institutional investor types along the dimensions of portfolio turnover and diversification. We find that ownership by focused institutions is

largely related to lower overvaluation and misvaluation, with the opposite being true for ownership by diversified institutions.

Finally, we demonstrate that institutional ownership types have effects on key firm characteristics that are related to corporate governance and firm performance. Dedicated (transient) institutions hold firms with less (more) tail risk, historical volatility, and mean, median, and maximum executive compensation. Furthermore, dedicated institutions hold firms with less earnings management, higher payouts, and higher leverage increases. We find that these characteristics are stable over time and not sensitive to the information effects from Reg FD. Furthermore, we find that they are due more to the portfolio turnover dimension than the diversification dimension.

These ownership effects have real performance implications. Over the subsequent year, firms held by transient institutions experience abnormal positive performance only in the first quarter, whereas those held by dedicated institutions have positive abnormal and raw returns in later periods. This difference in performance appears to be largely due to the portfolio turnover dimension, as firms held by long-horizon institutions outperform those held by short-horizon ones over subsequent year. This is consistent with the objectives of transient (short-term) and dedicated (long-term) institutions, but has profound implications on the expected effects of institutional ownership for other market participants.

These results provide a new perspective on the role of institutional investors in firm valuation, and have important implications for the role of institutional investor types in firm governance and firm performance.

References

Ajinkya, B., S. Bhojraj, and P. Sengupta, 2005, The Association Between Outside Directors, Institutional Investors, and the Properties of Management Earnings Forecasts, *Journal of Accounting Research*, 43, 343-376.

Almeida, H., M. Campello, B. Laranjeira, and S. Weisbenner, 2011, Corporate Debt Maturity and the Real Effects of the 2007 Credit Crisis, *Critical Finance Review*, 1, 3-58.

Altman, E., 1968, Financial Ratios, Discriminant Analysis, and the Prediction of Corporate Bankruptcy, *Journal of Finance*, 23, 589-609.

Barber, B., and T. Odean, 2008, All that Glitters: The Effect of Attention and News on the Buying Behavior of Individual and Institutional Investors, *Review of Financial Studies*, 21, 785-818.

Borochin, P., and J. Yang, 2016, Options, Equity Risks, and the Value of Capital Structure Adjustments, *working paper*.

Bushee, B., 1998, The Influence of Institutional Investors on Myopic R&D Investment Behavior, *The Accounting Review*, 73, 305-333.

Bushee, B., 2001, Do Institutional Investors Prefer Near-Term Earnings over Long-run Value?, *Contemporary Accounting Research*, 18, 207-246.

Barton, D., and M. Wiseman, 2014, Short-termism: Insights from business leaders, *Harvard Business Review*, 92, 44-77.

Cronqvist, F., 2009, Large Shareholders and Corporate Policies, *Review Financial Studies*. 22, 3941-3976.

Flannery, M., S. Kwan, and M. Nimalendran, 2004, Market evidence on the opaqueness of banking firms' assets, *Journal of Financial Economics*, 71:3, 419-460.

Gillian, S.L., 1995, Shareholder Activism Through the Proxy Mechanism: An Empirical Investigation, *working paper*.

Gompers, Paul A., and A. Metrick, 2001, Institutional Investors and Equity Prices, *Quarterly Journal of Economics*, 116.

Guo, M., and H. Ou-Yang, 2015, Feedback Trading Between Fundamental and Nonfundamental Information, *Review Financial Studies*, 28, 247-296.

Hadlock, C.J., and J.R. Pierce, 2010, New Evidence on Measuring Financial Constraints: Moving Beyond the KZ Index, *Review of Financial Studies*, 23, 1909-1940.

Hartzell, J.C. and L.T. Starks, 2003, Institutional Investors and Executive Compensation, *Journal of Finance*, 58, 2351-2374.

Heflin, F., K.R. Subramanyam, and Y. Zhang, 2003, Regulation FD and the financial information environment: Early evidence, *The Accounting Review*, 78:1, 1-37.

Karpoff, J., G. Lee, and R. Masulis, 2013, Contracting under asymmetric information: Evidence from lockup agreements in seasoned equity offerings. *Journal of Financial Economics*, 110, 607-626.

Karpoff, J., P. Malatesta, and R. Walking, 1996, Corporate Governance and Shareholder Initiatives: Empirical Evidence, *Journal of Financial Economics*, 42, 365-395.

Ke, B., K.R. Petroni, and Y. Yu, 2008, The effect of Regulation FD on transient institutional investors' trading behavior, *Journal of Accounting Research*, 46:4, 853-883.

Mahalanobis, P., 1936, On the generalised distance in statistics, *Proceedings of the National Institute of Sciences of India* 2:1, 49-55.

Nagel, S., 2005, Short Sales, Institutional Investors and the Cross-Section of Stock Returns, *Journal of Financial Economics*, 78, 277-309.

Rhodes-Kropf, M., D.T. Robinson, and S. Viswanathan, 2005, Valuation Waves and Merger Activity: The Empirical Evidence, *Journal of Financial Economics*, 77, 561-603.

Sias, R.W., and L.T. Starks, 1997, Return Autocorrelation and Institutional Investors, *Journal of Financial Economics*, 46, 103-131.

Smith, D.G., 1996, Corporate Governance and Managerial Incompetence: Lessons from Kmart, *North Carolina Law Review*, 74, 1038-1139.

Williamson, R. and J. Yang, 2015, Financing Constraints and Acquisitions, *working paper*.

Yan, X. and Z. Zhang, 2009, Institutional Investors and Equity Returns: Are Short-term Institutions Better Informed, *Review of Financial Studies*, 22, 893-924.

Appendix A

We detail the construction of our control variables below. Summary statistics of these variables are reported in Table III.

Total Assets
Assets - Total (ATQ) * Adjustment to 2000 Dollars

Ln Total Assets (LnTA)
ln{Assets - Total (ATQ) * Adjustment to 2000 Dollars}

Total Market Capitalization
Price-Close-Quarter (PRCCQ) * Common Shares Outstanding (CSHOQ) * Adjustment to 2000 Dollars

Market Value
Total Market Capitalization + Total Book Debt

% Owned by Institutional Investors
Total number of shares held by institutional investors / Shares outstanding

% Owned by Dedicated Institutional Investors
Number of shares held by institutional investors classified as "Dedicated" based on Bushee (2001) / Total number of shares held by institutional investors

% Owned by Transient Institutional Investors
Number of shares held by institutional investors classified as "Transient" based on Bushee (2001) / Total number of shares held by institutional investors

% Owned by Long (Short) Horizon Institutional Investors
Total # shares held by long (short) horizon institutional investors / Shares outstanding where long (short) horizon is calculated based portfolio turnover, as defined in Yan and Zhang (2009)

% Owned by Focused (Diversified) Institutional Investors
Total # shares held by focused (diversified) institutional investors / Shares outstanding where focused (diversified) is based on the HHI of portfolio weights for each institutional investor

HHI-Index of Institutional Investors
$\sum_i \left(\frac{\text{Number of shares held by investor } i}{\text{Total number of shares held by institutional investors}} \right)^2$

RKRV (Firm) Misvaluation

Firm-specific error from the Rhodes-Kropf Robinson, and Viswanathan (2005) decomposition of the market-to-book ratio into three types of components: firm-specific error, time-series sector error, and long-run market-to-book.

HJ (Firm) Misvaluation

Negative of the beta on the Hirshleifer and Jiang (2010) UMO factor

Returns for each firm are regressed on a Carhart (1997) 4-factor along with the Hirshleifer and Jiang (2010) UMO factor. A positive (negative) beta on the UMO factor indicates an under- (over-) valued firm. The HJ firm-specific misvaluation takes the negative of the UMO beta such that a positive (negative) measure indicates an over- (under-) valued firm.

Altman's Zscore

$$\frac{\text{3.3*Pretax Income (PIQ) + 1.0*Net Sales (SALEQ) + 1.4*Retained Earnings (REQ) + 1.2*Working Capital}}{\text{Total Assets (ATQ)}}$$

where Working Capital = Current Assets-Total (ACTQ) - Current Liabilities-Total (LCTQ)

Long-term Debt / TA

Long-Term Debt-Total (DLTTQ) / Total Assets (ATQ)

Has Long-term Debt Credit Rating

1, if firm has a S&P Long-term credit rating, and 0, otherwise

Cash Flow Dispersion

Average(Cash flow (OIBDPQ) over the past 20 quarters) / Standard Deviation (Cash flow (OIBDPQ) over the past 20 quarters)

Number of Analyst Estimates

Number of analyst EPS estimates for the relevant quarter based on IBES data

Opacity Measure

First principal component of log firm age, log firm size, bid-ask spread, standard deviation of returns, Amihud ratio, and skewness of 3-factor residuals following Karpoff, Lee, and Masulis (2013) to create a single proxy variable increasing in firm opacity

Firm Concentration

$$\left(\frac{\text{Number of shares invested by institutional investor}}{\text{Shares outstanding}}\right)^2$$

Following Bushee (1998), used as a measure for investor concentration within a firm.

Portfolio Turnover

$$min\left(\frac{\Delta\text{portfolio value from buying}_i}{\sum_i \Delta\text{portfolio value from buying}_i}, \frac{\Delta\text{portfolio value from selling}_i}{\sum_i \Delta\text{portfolio value from selling}_i}\right)$$

divided by average portfolio value between $t-1$ and t

Following Yan and Zhang (2009), used as a measure for portfolio turnover.

$IVspread_{mon}$

Spread between quarterly average implied volatility from short-term out-of-the-money put options and in-the-money put options.

Following Borochin and Yang (2016), used as a measure of cash flow tail risk.

Appendix B

Table B.I: Mahalanobis distance matching algorithm. Using Mahalanobis distance matching algorithm, the single nearest neighbor is identified as a control firm for each treatment firm. Columns (1), (4), and (7) report the means of matching characteristics for the actual DED, TRA, or TvD firms, respectively. Columns (2), (5), and (8) report the means of matching characteristics for the matched nearest neighbor to the actual DED, TRA, or TvD firms, respectively. Columns (3), (6), and (9) reports the p-values of the t-test of difference in means of matching characteristics for DED, TRA, or TvD matching, respectively. isDED is equal to 1 if the percentage of dedicated institutional investors within a firm falls into the upper tercile and 0 otherwise. isTRA is equal to 1 if the percentage of transient institutional investors within a firm falls into the upper tercile and 0 otherwise. isTvD contrasts isTRA=1 firms against isDED=1 firms and is equal to 1 if the percentage of transient institutional investors within a firm falls into the upper tercile and the percentage of dedicated institutional investors within a firm falls into the bottom tercile and 0 if the percentage of transient institutional investors within a firm falls into the bottom tercile and the percentage of dedicated institutional investors within a firm falls into the upper tercile.

	isDED= 1			isTRA= 1			isTvD= 1		
	Actual (1)	Matched (2)	p-val (3)	Actual (4)	Matched (5)	p-val (6)	Actual (7)	Matched (8)	p-val (9)
RKRV (Firm) $\text{Misval}_{i,t-1}$	0.062	0.066	0.609	0.155	0.151	0.574	0.177	0.167	0.399
RKRV Sector $\text{Misval}_{i,t-1}$	0.137	0.138	0.927	0.152	0.150	0.464	0.150	0.147	0.528
Log Total $\text{Assets}_{i,t-1}$	5.236	5.217	0.254	5.242	5.230	0.532	5.183	5.184	0.986
Book-to-Market $\text{Ratio}_{i,t-1}$	0.556	0.551	0.258	0.502	0.504	0.681	0.497	0.499	0.698

Table I: List of top ten dedicated and transient institutional investors by average portfolio size. Panel A lists the top ten dedicated institutional investors and panel B lists the top ten transient institutional investors. Dedicated institutional investors, as defined in Bushee (1998, 2001), are characterized as having large average investment in firms in their portfolios and extremely low turnover. In contrast, transient institutional investors are institutional investors characterized as having high portfolio turnover and highly diversified portfolio holdings. Investors are sorted based on their average portfolio size.

Panel A: Top 10 Dedicated (DED) Institutional Investors By Average Portfolio Size

Name	Average Portfolio Size ($)
Fidelity Management & Research	366B
Capital Research & Management	130B
Wellington Management	121B
Jennison Associates	31B
Berkshire Hathaway	27B
State Farm Musual Automobile Insurance	27B
Harris Associates	16B
Sanford Bernstein & Co	14B
Bank of New York Asset Management	12B
Southeastern Asset Management	12B

Panel B: Top 10 Transient (TRA) Institutional Investors By Average Portfolio Size

Name	Average Portfolio Size ($)
Blackrock	190B
Morgan Stanley	84B
Janus Capital	60B
Putnam Management	58B
Pacific Investment Management Co.	42B
Oppenheimerfunds	39B
UBS Warburg	37B
Investors Research Corp	36B
Marsico Capital Management	34B
AIM Management	31B

Table II: Comparison of means for dedicated institutional investors versus transient institutional investors. Dedicated institutional investors, as defined in Bushee (1998, 2001), are characterized as having large average investment in firms in their portfolios and extremely low turnover. In contrast, transient institutional investors are institutional investors characterized as having high portfolio turnover and highly diversified portfolio holdings. Significance at the 10% level is indicated by *, 5% level by **, and 1% level by ***.

	DED Investors	TRA Investors	Sig
Total Portfolio Value ($M)	9431.6	2581.5	***
Number of Stocks in Portfolio	182.0	247.2	***
Average Firm Holdings (%)	5.250	2.460	***
Median Firm Holdings (%)	3.114	1.756	***
Std. Dev. Firm Holdings (%)	6.847	2.413	***
Average Firm Size ($M)	8784.8	17376.6	***
Median Firm Size ($M)	3023.5	5631.8	***
Std. Dev. Firm Size ($M)	15899.0	32817.8	***
Number of SIC3 Industries in Portfolio	34.5	47.1	***
HHI of Portfolio	0.142	0.035	***
Average Firm Concentration	0.052	0.007	***
Average Portfolio Turnover	0.041	0.122	***

Table III: Sample statistics of institutional investor and firm characteristics. Institutional investor types are defined in Section 2.1. Dedicated institutional investors, as defined in Bushee (1998, 2001), are characterized as having large average investment in firms in their portfolios and extremely low turnover. In contrast, transient institutional investors are institutional investors characterized as having high portfolio turnover and highly diversified portfolio holdings. Firm characteristics are defined in Appendix A.

	No. Obs	Mean	Std Dev	1%	25%	50%	75%	99%
Total Assets ($M)	252697	2663.0	13268.3	11.6	61.4	207.9	948.3	43255.7
Market Value ($M)	224962	3121.2	15515.5	9.3	73.3	258.9	1119.5	57700.0
No. of Institutional Investors	252697	89.0	139.7	1.0	14.0	41.0	108.0	715.0
% Owned by Institutional Investors	247791	0.401	0.280	0.001	0.153	0.365	0.631	0.964
% Owned by Dedicated Inst. Investors	252697	0.046	0.065	0.000	0.007	0.028	0.061	0.286
% Owned by Transient Inst. Investors	252697	0.276	0.148	0.000	0.183	0.275	0.364	0.667
% Owned by Long Horizon Inst. Investors	252697	0.215	0.146	0.000	0.136	0.182	0.253	0.833
% Owned by Short Horizon Inst. Investors	252697	0.313	0.141	0.000	0.240	0.324	0.394	0.667
% Owned by Focused Inst. Investors	252697	0.063	0.068	0.000	0.015	0.053	0.087	0.286
% Owned by Diversified Inst. Investors	252697	0.603	0.174	0.000	0.500	0.617	0.714	1.000
HHI-Index of Institutional Investors	252697	0.144	0.186	0.015	0.042	0.076	0.157	1.000
RKRV Misvaluation	252697	0.072	0.832	-2.511	-0.360	0.114	0.575	1.879
HJ Misvaluation	174294	-0.057	1.237	-3.633	-0.697	-0.049	0.597	3.271
Altman's Z-score	233836	0.972	5.763	-25.535	0.318	2.370	3.991	7.407
Long-term Debt / TA	249142	0.159	0.168	0.000	0.002	0.112	0.266	0.643
Has LT Debt Credit Rating	252697	0.231	0.421	0.000	0.000	0.000	0.000	1.000
Cash Flow Dispersion	234134	0.441	1.426	-4.866	0.202	0.387	0.696	5.643
No. of Analyst Estimates	252697	4.3	5.5	0.0	0.0	2.0	6.0	24.0
Opacity Measure	207898	-0.150	0.447	-0.562	-0.429	-0.288	-0.045	1.726
$IVspread_{mon}$	62556	0.051	0.144	-0.417	-0.002	0.062	0.121	0.380
Realized Volatility	85374	0.531	0.265	0.172	0.348	0.472	0.653	1.402
Average Executive Compensation ($M)	77079	29.3	259.6	0.0	3.0	7.5	19.6	212.3
Maximum Executive Compensation ($M)	77079	113.5	1167.9	0.0	8.7	22.8	63.8	872.4
Median Executive Compensation ($M)	77079	9.0	38.1	0.0	1.5	3.6	8.6	80.4
Accruals Quality	238383	-0.008	0.284	-0.946	-0.086	-0.008	0.064	1.011
Payout Ratio	219467	0.113	0.251	0.000	0.000	0.000	0.112	1.312
Net Leverage Increase	238682	-0.004	0.052	-0.251	-0.009	-0.001	0.005	0.140

Table IV: Pairwise correlation matrix of institutional investor and firm characteristics. Institutional investor types are defined in Section 2.1. Institutional investor types are defined in Section 2.1. Dedicated institutional investors, as defined in Bushee (1998, 2001), are characterized as having large average investment in firms in their portfolios and extremely low turnover. In contrast, transient institutional investors are institutional investors characterized as having high portfolio turnover and highly diversified portfolio holdings. Firm characteristics are defined in Appendix A.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Total Assets ($M)							
(2) Market Value ($M)	0.8575						
(3) No. of Institutional Investors	0.5391	0.6811					
(4) % Owned by Institutional Investors	0.0505	0.0704	0.4764				
(5) % Owned by Dedicated Inst. Investors	-0.0676	-0.0711	-0.1613	-0.1194			
(6) % Owned by Transient Inst. Investors	-0.0140	-0.0173	0.0268	0.1645	-0.2239		
(7) % Owned by Long Horizon Inst. Investors	-0.1163	-0.1245	-0.2578	-0.3080	0.0306	-0.4567	
(8) % Owned by Short Horizon Inst. Investors	-0.0606	-0.0704	-0.0369	0.2067	-0.0568	0.6304	-0.4786
(9) % Owned by Focused Inst. Investors	0.0241	0.0232	0.0377	-0.0119	0.1729	-0.0927	-0.0061
(10) % Owned by Diversified Inst. Investors	-0.2093	-0.2351	-0.3456	-0.0691	-0.1362	0.0444	0.3467
(11) HHI-Index of Institutional Investors	-0.0742	-0.0884	-0.3047	-0.4735	0.0794	-0.0873	0.2272
(12) RKRV Misvaluation	-0.0128	0.0472	0.2871	0.3112	-0.0663	0.0601	-0.1474
(13) HJ Misvaluation	0.0209	0.0205	0.0243	0.0333	-0.0251	0.0658	-0.0614
(14) Altman's Z-score	0.0581	0.0727	0.1457	0.1520	0.0295	-0.1373	0.0024
(15) Long-term Debt / TA	0.0579	0.0311	0.0570	0.0646	0.0038	-0.0567	0.0121
(16) Has LT Debt Credit Rating	0.2848	0.2809	0.4973	0.3365	-0.0939	0.0125	-0.1773
(17) Cash Flow Dispersion	-0.0093	-0.0111	-0.0205	-0.0012	0.0146	-0.0313	0.0439
(18) No. of Analyst Estimates	0.2408	0.3158	0.7190	0.5737	-0.1665	0.1253	-0.2797
(19) Opacity Measure	-0.1345	-0.1422	-0.3549	-0.4905	0.1727	-0.2585	0.3922

	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(9) % Owned by Focused Inst. Investors	-0.0438						
(10) % Owned by Diversified Inst. Investors	0.1854	-0.4288					
(11) HHI-Index of Institutional Investors	-0.1578	-0.0088	0.1105				
(12) RKRV Misvaluation	0.0690	0.0228	-0.1436	-0.2500			
(13) HJ Misvaluation	0.0545	0.0034	-0.0174	-0.0399	0.0150		
(14) Altman's Z-score	-0.0370	0.0201	-0.0545	-0.1217	0.0268	-0.0746	
(15) Long-term Debt / TA	-0.0289	0.0459	-0.0497	-0.0116	-0.0179	-0.0258	0.0606
(16) Has LT Debt Credit Rating	0.0000	0.0933	-0.2482	-0.2043	0.1046	0.0098	0.1250
(17) Cash Flow Dispersion	-0.0237	-0.0185	0.0350	0.0096	-0.0396	-0.0368	0.1985
(18) No. of Analyst Estimates	0.0911	0.0258	-0.2314	-0.3489	0.3243	0.0403	0.1103
(19) Opacity Measure	-0.2780	-0.0532	0.1423	0.4402	-0.2508	-0.0636	-0.1282

	(15)	(16)	(17)	(18)
(16) Has LT Debt Credit Rating	0.3959			
(17) Cash Flow Dispersion	0.0380	0.0057		
(18) No. of Analyst Estimates	0.0583	0.4224	-0.0135	
(19) Opacity Measure	-0.0123	-0.2657	0.0348	-0.3968

Table V: Comparison of means for firms with dedicated institutional investors versus firms with transient institutional investors. Dedicated institutional investors, as defined in Bushee (1998, 2001), are characterized as having large average investment in firms in their portfolios and extremely low turnover. In contrast, transient institutional investors are institutional investors characterized as having high portfolio turnover and highly diversified portfolio holdings. Sorting by firm based on its percentage of dedicated institutional investors, isDED is equal to 1 if the percentage of dedicated institutional investors within a firm falls into the upper tercile and 0 otherwise. Similarly, sorting by firm based on its percentage of transient institutional investors, isTRA is equal to 1 if the percentage of transient institutional investors within a firm falls into the upper tercile and 0 otherwise. Significance at the 10% level is indicated by *, 5% level by **, and 1% level by ***.

	isDED=1	isTRA=1	Sig
Total Assets ($M)	1952.1	1472.6	***
Market Value ($M)	1848.6	1808.0	
Market Value / Book Value	1.378	1.833	***
No. of Institutional Investors	66.0	79.6	***
% Owned by Institutional Investors	0.410	0.392	***
% Owned by Dedicated Inst. Investors	0.090	0.014	***
% Owned by Transient Inst. Investors	0.186	0.389	***
% Owned by Long Horizon Inst. Investors	0.239	0.182	***
% Owned by Short Horizon Inst. Investors	0.274	0.373	***
% Owned by Focused Inst. Investors	0.070	0.056	**
% Owned by Diversified Inst. Investors	0.613	0.604	***
HHI-Index of Institutional Investors	0.136	0.145	***
RKRV Misvaluation	-0.014	0.115	**
HJ Misvaluation	-0.078	-0.028	***
Altman's Z-score	1.276	0.818	***
Long-term Debt / TA	0.162	0.153	***
Has LT Debt Credit Rating	0.202	0.220	***
Cash Flow Dispersion	0.455	0.466	
No. of Analyst Estimates	3.2	4.6	***
Opacity Measure	-0.137	-0.158	***
$IVspread_{mon}$	0.038	0.060	***
Realized Volatility	0.499	0.584	***
Average Executive Compensation ($M)	13.8	26.2	***
Maximum Executive Compensation ($M)	50.8	101.7	***
Median Executive Compensation ($M)	5.2	8.8	***
Accruals Quality	-0.012	0.000	***
Payout Ratio	0.127	0.086	***
Net Leverage Increase	-0.001	-0.006	***

Table VI: Estimation of misvaluation on types of institutional investors. Misvaluation is defined based on the Rhodes-Kropf, Robinson, and Viswanathan (2005) decomposition of the market-to-book ratio into three types of components: firm-specific error, time-series sector error, and long-run market-to-book. RKRV Misvaluation refers to the firm-specific error from the RKRV decomposition. Columns (1) and (3) use the firm-specific misvaluation as the dependant variable. A negative (positive) firm-specific error indicates a under- (over-) valued firm. Columns (2) and (4) use the absolute value of the firm-specific misvaluation as the dependant variable. This captures the magnitude of the misvaluation. Dedicated institutional investors, as defined in Bushee (1998, 2001), are characterized as having large average investment in firms in their portfolios and extremely low turnover. In contrast, transient institutional investors are institutional investors characterized as having high portfolio turnover and highly diversified portfolio holdings. Percentage of dedicated or transient institutional investors is relative to the total number of institutional investors within a firm. Standard errors are reported in the parentheses and clustered by both firm and year-quarter as in Petersen (2009). Significance at the 10% level is indicated by *, 5% level by **, and 1% level by ***.

	RKRV Misval. (1)	abs(RKRV Misval.) (2)	RKRV Misval. (3)	abs(RKRV Misval.) (4)
% Owned by Dedicated Inst. Investors$_{i,t-1}$	-0.7670 ***	-0.0245		
	(0.1077)	(0.0505)		
% Owned by Dedicated Inst. Investors$_{i,t-2}$			-0.8709 ***	-0.0343
			(0.1226)	(0.0511)
Δ % Owned by Dedicated Inst. Investors$_{i,t-1}$			-0.5163 ***	-0.1022
			(0.1256)	(0.0864)
% Owned by Transient Inst. Investors$_{i,t-1}$	0.3877 ***	0.0726 ***		
	(0.0691)	(0.0278)		
% Owned by Transient Inst. Investors$_{i,t-2}$			0.4524 ***	0.0547 *
			(0.0773)	(0.0301)
Δ % Owned by Transient Inst. Investors$_{i,t-1}$			0.4096 ***	0.0304
			(0.0774)	(0.0315)
Constant	0.3468	0.5754 ***	0.3478	0.5663 ***
	(0.2526)	(0.1734)	(0.2675)	(0.1823)
Quarter Fixed Effects?	Y	Y	Y	Y
Year Fixed Effects?	Y	Y	Y	Y
Industry Fixed Effects?	Y	Y	Y	Y
No. Obs.	236048	236048	223027	223027
Adjusted R^2	0.0615	0.0586	0.0662	0.0589

Table VII: Estimation of misvaluation on types of institutional investors with control variables. Misvaluation is defined based on the Rhodes-Kropf, Robinson, and Viswanathan (2005) decomposition of the market-to-book ratio into three types of components: firm-specific error, time-series sector error, and long-run market-to-book. RKRV Misvaluation refers to the firm-specific error from the RKRV decomposition. Columns (1) and (3) use the firm-specific misvaluation as the dependant variable. A negative (positive) firm-specific error indicates a under- (over-) valued firm. Columns (2) and (4) use the absolute value of the firm-specific misvaluation as the dependant variable. This captures the magnitude of the misvaluation. Dedicated institutional investors, as defined in Bushee (1998, 2001), are characterized as having large average investment in firms in their portfolios and extremely low turnover. In contrast, transient institutional investors are institutional investors characterized as having high portfolio turnover and highly diversified portfolio holdings. Percentage of dedicated or transient institutional investors is relative to the total number of institutional investors within a firm. All controls are defined in Appendix A. Standard errors are reported in the parentheses and clustered by both firm and year-quarter as in Petersen (2009). Significance at the 10% level is indicated by *, 5% level by **, and 1% level by ***.

	RKRV Misval. (1)	abs(RKRV Misval.) (2)	RKRV Misval. (3)	abs(RKRV Misval.) (4)
% Owned by Dedicated Inst. Investors$_{i,t-2}$	-0.4764 ***	0.0127	-0.6414 ***	0.0339
	(0.0912)	(0.0501)	(0.1058)	(0.0606)
Δ % Owned by Dedicated Inst. Investors$_{i,t-1}$	-0.2798 ***	-0.0664	-0.3522 ***	-0.0470
	(0.0840)	(0.0705)	(0.0926)	(0.0833)
% Owned by Transient Inst. Investors$_{i,t-2}$	0.1416 **	0.1328 ***	-0.0219	0.1867 ***
	(0.0599)	(0.0316)	(0.0651)	(0.0357)
Δ % Owned by Transient Inst. Investors$_{i,t-1}$	0.2642 ***	0.0833 ***	0.2399 ***	0.1093 ***
	(0.0452)	(0.0277)	(0.0467)	(0.0310)
Log Total Assets$_{I,t-1}$	-0.0739 ***	0.0654 ***	-0.0994 ***	0.0846 ***
	(0.0114)	(0.0090)	(0.0124)	(0.0093)
% Owned by Institutional Investors$_{i,t-1}$	0.4580 ***	-0.3510 ***	0.4607 ***	-0.3389 ***
	(0.0527)	(0.0341)	(0.0551)	(0.0362)
HHI-Index of Institutional Investors$_{i,t-1}$	-0.3569 ***	0.2032 ***	-0.2033 ***	0.1459 ***
	(0.0385)	(0.0294)	(0.0441)	(0.0342)
Altman Z-score$_{i,t-1}$	-0.0013	-0.0043 ***	-0.0033 **	-0.0043 ***
	(0.0013)	(0.0007)	(0.0014)	(0.0007)
LT Debt / TA$_{i,t-1}$	-0.2080 ***	-0.1077 ***	-0.1951 ***	-0.1476 ***
	(0.0460)	(0.0271)	(0.0492)	(0.0284)
Have LT Credit Rating$_{i,t-1}$	0.0847 ***	-0.0044	-0.0134 ***	-0.0285
	(0.0202)	(0.0168)	(0.0025)	(0.0186)
Cash Flow Dispersion$_{i,t-1}$	-0.0168 ***	0.0062 ***	-0.0134 ***	0.0047 ***
	(0.0024)	(0.0017)	(0.0025)	(0.0017)
No. of Analyst Estimates$_{i,t-1}$	0.2811 ***	-0.0105	0.2735 ***	-0.0087
	(0.0130)	(0.0088)	(0.0137)	(0.0094)
Firm Opacity$_{i,t-1}$			-0.2868 ***	0.1117 ***
			(0.0181)	(0.0113)
Constant	0.7023 **	0.2663	0.9063 ***	0.2615
	(0.2985)	(0.2059)	(0.2857)	(0.2170)
Quarter Fixed Effects?	Y	Y	Y	Y
Year Fixed Effects?	Y	Y	Y	Y
Industry Fixed Effects?	Y	Y	Y	Y
No. Obs.	187227	187227	157885	157885
Adjusted R^2	0.2343	0.0944	0.2599	0.1005

Table VIII: Estimation of misvaluation on types of institutional investors with control variables. Misvaluation is defined based on the Hirshleifer and Jiang (2010) UMO factor. Returns for each firm are regressed on a Carhart (1997) 4-factor along with the Hirshleifer and Jiang (2010) UMO factor. A positive (negative) beta on the UMO factor indicates an under- (over-) valued firm. The HJ firm-specific misvaluation takes the negative of the UMO beta such that a positive (negative) measure indicates an over- (under-) valued firm. Dedicated institutional investors, as defined in Bushee (1998, 2001), are characterized as having large average investment in firms in their portfolios and extremely low turnover. In contrast, transient institutional investors are institutional investors characterized as having high portfolio turnover and highly diversified portfolio holdings. Percentage of dedicated or transient institutional investors is relative to the total number of institutional investors within a firm. All controls are defined in Appendix A. Standard errors are reported in the parentheses and clustered by both firm and year-quarter as in Petersen (2009). Significance at the 10% level is indicated by *, 5% level by **, and 1% level by ***.

	HJ Misval. (1)	abs(HJ Misval.) (2)	HJ Misval. (3)	abs(HJ Misval.) (4)	HJ Misval. (5)	abs(HJ Misval.) (6)	HJ Misval. (7)	abs(HJ Misval.) (8)
% Owned by Dedicated Inst. Investors$_{i,t-1}$	0.0644	0.1093						
	(0.1524)	(0.0938)						
% Owned by Dedicated Inst. Investors$_{i,t-2}$			0.0735	0.1079	0.1838	-0.3379 ***	-0.0333	-0.3853 ***
			(0.1722)	(0.1056)	(0.1882)	(0.1089)	(0.2106)	(0.1241)
Δ % Owned by Dedicated Inst. Investors$_{i,t-1}$			0.0997	0.1286	0.0906	-0.1448	0.0553	-0.1809 *
			(0.1262)	(0.1157)	(0.1260)	(0.0933)	(0.1523)	(0.1048)
% Owned by Transient Inst. Investors$_{i,t-1}$	0.2278 ***	0.4595 ***						
	(0.0826)	(0.0552)						
% Owned by Transient Inst. Investors$_{i,t-2}$			0.3079 ***	0.5387 ***	0.2718 **	0.6634 ***	0.1912 *	0.7781 ***
			(0.0957)	(0.0653)	(0.1056)	(0.0598)	(0.1089)	(0.0669)
Δ % Owned by Transient Inst. Investors$_{i,t-1}$			0.0993	0.2742 ***	0.0763	0.3313 ***	0.0427	0.3925 ***
			(0.0757)	(0.0527)	(0.0832)	(0.0469)	(0.0862)	(0.0496)
Log Total Assets$_{I,t-1}$					0.0040	-0.0876 ***	0.0073	-0.0635 ***
					(0.0101)	(0.0064)	(0.0107)	(0.0070)
% Owned by Institutional Investors$_{i,t-1}$					-0.0681	-0.2092 ***	-0.1067 *	-0.1500 ***
					(0.0601)	(0.0325)	(0.0631)	(0.0342)
HHI-Index of Institutional Investors$_{i,t-1}$					-0.1731 **	0.0847 *	-0.1220	-0.0519
					(0.0768)	(0.0503)	(0.0828)	(0.0549)
Altman Z-score$_{i,t-1}$					-0.0075 ***	-0.0165 ***	-0.0093 ***	-0.0155 ***
					(0.0026)	(0.0017)	(0.0026)	(0.0017)
LT Debt / TA$_{i,t-1}$					-0.2088 **	0.2357 ***	-0.2446 ***	0.1788 ***
					(0.0818)	(0.0471)	(0.0844)	(0.0496)
Have LT Credit Rating$_{i,t-1}$					0.0024	-0.0044	0.0001	-0.0316
					(0.0307)	(0.0187)	(0.0324)	(0.0201)
Cash Flow Dispersion$_{i,t-1}$					-0.0116 *	0.0173 ***	-0.0049	0.0120 ***
					(0.0067)	(0.0039)	(0.0065)	(0.0037)
No. of Analyst Estimates$_{i,t-1}$					0.0476 ***	0.0262 ***	0.0361 **	0.0291 ***
					(0.0168)	(0.0102)	(0.0172)	(0.0104)
Firm Opacity$_{i,t-1}$							-0.1117 **	0.2322 ***
							(0.0445)	(0.0242)
Constant	0.2300	0.7606 ***	0.1894	0.7330 ***	0.3474	1.2211 ***	0.1812	1.2626 ***
	(0.1938)	(0.1000)	(0.2133)	(0.1091)	(0.2307)	(0.1028)	(0.2778)	(0.1597)
Quarter Fixed Effects?	Y	Y	Y	Y	Y	Y	Y	Y
Year Fixed Effects?	Y	Y	Y	Y	Y	Y	Y	Y
Industry Fixed Effects?	Y	Y	Y	Y	Y	Y	Y	Y
No. Obs.	167326	167326	162199	162199	136070	136070	117543	117543
Adjusted R^2	0.0476	0.1045	0.0484	0.1056	0.0573	0.1731	0.0639	0.1808

Table IX: Difference-in-difference estimation using Regulation FD enacted in 2000. This SEC regulation reduced the informational advantage enjoyed by important institutions by mandating that all firm disclosures be made public. Misvaluation uses the firm-specific error from the Rhodes-Kropf, Robinson, and Viswanathan (2005) decomposition of the market-to-book ratio. isRegFD is defined as 1 for years 1995 to 1999 and 0 for years 2001 to 2005. We remove 2000 from the analysis to account for any anticipation or delays in the application of Regulation FD. Dedicated institutional investors, as defined in Bushee (1998, 2001), are characterized as having large average investment in firms in their portfolios and extremely low turnover. In contrast, transient institutional investors are institutional investors characterized as having high portfolio turnover and highly diversified portfolio holdings. Percentage of dedicated institutional investors is relative to the total number of institutional investors within a firm. Sorting by firm based on its percentage of dedicated institutional investors, isDED is equal to 1 if the percentage of dedicated institutional investors within a firm falls into the upper tercile and 0 otherwise. Columns (1) and (2) examine the impact of RegFD on misvaluation among firms owned by large percentage of dedicated institutional investors (isDED=1). Columns (3) and (4) examine the impact of RegFD on misvaluation among firms owned by large percentage of transient institutional investors (isTRA=1). Columns (5) and (6) contrast the impact of RegFD among isTRA=1 firms against isDED=1 firms. All controls are defined in Appendix A. Standard errors are reported in the parentheses and clustered by both firm and year-quarter as in Petersen (2009). Significance at the 10% level is indicated by *, 5% level by **, and 1% level by ***.

	RKRV Misval. (1)	abs(RKRV Misval.) (2)	RKRV Misval. (3)	abs(RKRV Misval.) (4)	RKRV Misval. (5)	abs(RKRV Misval.) (6)
isRegFD	0.0990 ***	0.1544 ***	0.1295 ***	0.1454 ***	-0.1230 ***	0.0444
	(0.0252)	(0.0151)	(0.0249)	(0.0152)	(0.0303)	(0.0460)
isDED	-0.0656 ***	-0.0609 ***				
	(0.0135)	(0.0109)				
isRegFDxisDED	0.0165	-0.0189				
	(0.0190)	(0.0165)				
isTRA			0.0825 ***	0.0238 **		
			(0.0149)	(0.0109)		
isRegFDxisTRA			-0.0440 **	-0.0147		
			(0.0212)	(0.0149)		
isTvD					0.1535 ***	0.0207 ***
					(0.0210)	(0.0073)
isRegFDxisTvD					-0.0504 *	-0.0308 ***
					(0.0299)	(0.0102)
% Dedicated Inst. Inv.$_{i,t-2}$	-0.3836 ***	0.3275 ***	-0.6257 ***	0.0527	-0.3817 **	0.0328
	(0.1314)	(0.0862)	(0.1285)	(0.0828)	(0.1583)	(0.0262)
Δ % Dedicated Inst. Inv.$_{i,t-1,t}$	-0.1602	0.1676	-0.3503 **	-0.0583	-0.0236	-0.0290
	(0.1430)	(0.1260)	(0.1387)	(0.1319)	(0.1659)	(0.0418)
% Transient Inst. Inv.$_{i,t-2}$	0.2723 ***	0.1125 ***	0.1335 **	0.0752 **	0.1773 ***	-0.0318 *
	(0.0598)	(0.0378)	(0.0601)	(0.0381)	(0.0684)	(0.0191)
Δ % Transient Inst. Inv.$_{i,t-1,t}$	0.3574 ***	0.0792 *	0.2498 ***	0.0505	0.1579 ***	0.0102
	(0.0607)	(0.0426)	(0.0582)	(0.0459)	(0.0152)	(0.0215)
Constant	0.3318	0.3593	0.2909	0.3237	0.7614	0.1911 ***
	(0.3957)	(0.2803)	(0.3969)	(0.2791)	(0.4861)	(0.0632)
Other Controls?	Y	Y	Y	Y	Y	Y
Quarter Fixed Effects?	Y	Y	Y	Y	Y	Y
Year Fixed Effects?	Y	Y	Y	Y	Y	Y
Industry Fixed Effects?	Y	Y	Y	Y	Y	Y
No. Obs.	76512	76512	76512	76512	39899	39899
Adjusted R^2	0.2543	0.0968	0.2544	0.0934	0.2406	0.1974

Table X: Difference-in-difference estimation under Mahalanobis distance matching using Regulation FD enacted in 2000. Using Mahalanobis distance matching algorithm, the single nearest neighbor is identified as a control firm for each treatment firm. Controls are found for treatment firms based on isDED=1, isTRA= 1, and isTvD= 1, respectively. Standard errors are reported in the parentheses and clustered by both firm and year-quarter as in Petersen (2009). Significance at the 10% level is indicated by *, 5% level by **, and 1% level by ***.

	Panel A: RKRV Misvaluation							
	Treatment			Control			Treatment-Control	TRA-DED
	1-yr Pre-RegFD	1-yr Post-RegFD	1-yr Post-Pre	1-yr Pre-RegFD	1-yr Post-RegFD	1-yr Post-Pre	Diff-in-diff	Diff-in-diff-in-diff
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(a) Treatment: isDED=1	0.054	0.262 ***	0.208 ***	0.088 **	0.268 ***	0.180 ***	0.028	
	(0.036)	(0.033)	(0.033)	(0.037)	(0.036)	(0.034)	(0.047)	
(b) Treatment: isTRA=1	0.229 ***	0.312 ***	0.083 **	0.169 ***	0.474 ***	0.306 ***	-0.223 ***	-0.251 ***
	(0.041)	(0.034)	(0.039)	(0.037)	(0.037)	(0.031)	(0.049)	(0.075)
(c) Treatment: isTvD=1	0.308 ***	0.286 ***	-0.022	0.167 ***	0.444 ***	0.277 ***	-0.299 ***	
	(0.062)	(0.056)	(0.054)	(0.051)	(0.053)	(0.042)	(0.068)	
	Panel B: abs(RKRV Misvaluation)							
	Treatment			Control			Treatment-Control	TRA-DED
	1-yr Pre-RegFD	1-yr Post-RegFD	1-yr Post-Pre	1-yr Pre-RegFD	1-yr Post-RegFD	1-yr Post-Pre	Diff-in-diff	Diff-in-diff-in-diff
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(a) Treatment: isDED=1	0.625 ***	0.629 ***	0.004	0.616 ***	0.675 ***	0.058 **	-0.054	
	(0.022)	(0.020)	(0.026)	(0.021)	(0.024)	(0.026)	(0.037)	
(b) Treatment: isTRA=1	0.653 ***	0.599 ***	-0.055 *	0.639 ***	0.760 ***	0.121 ***	-0.175 ***	-0.121 **
	(0.026)	(0.023)	(0.029)	(0.022)	(0.024)	(0.027)	(0.040)	(0.059)
(c) Treatment: isTvD=1	0.697 ***	0.641 ***	-0.055	0.629 ***	0.738 ***	0.109 ***	-0.164 ***	
	(0.042)	(0.037)	(0.041)	(0.030)	(0.035)	(0.036)	(0.055)	

Table XI: Estimation of misvaluation on types of institutional investors with control variables. Misvaluation uses the firm-specific error from the Rhodes-Kropf, Robinson, and Viswanathan (2005) decomposition of the market-to-book ratio. Long- (short-) horizon institutional investors, as defined in Yan and Zhang (2009), are characterized by having low (high) portfolio turnover. Focused (diversified) institutional investors, as defined in Bushee (1999, 2001), are characterized by having high (low) average holdings in invested firms. Percentage of institutional investor type is relative to the total number of institutional investors within a firm. All controls are defined in Appendix A. Panel A reports the results using observations across all years. Panels B and C report the resulting using observations prior to and post 2000, respectively, to sub-sample into pre and post Regulation FD periods. Standard errors are reported in the parentheses and clustered by both firm and year-quarter as in Petersen (2009). Significance at the 10% level is indicated by *, 5% level by **, and 1% level by ***.

	Panel A: All Years					
	RKRV Misval. (1)	abs(RKRV Misval.) (2)	RKRV Misval. (3)	abs(RKRV Misval.) (4)	RKRV Misval. (5)	abs(RKRV Misval.) (6)
% Long-term Inst. $Inv._{i,t-2}$	0.3403 ***	-0.0199				
	(0.0635)	(0.0415)				
Δ % Long-term Inst. $Inv._{i,t-1}$	0.0910 *	-0.0244				
	(0.0544)	(0.0319)				
% Short-term Inst. $Inv._{i,t-2}$	0.0273	0.0871 **				
	(0.0682)	(0.0339)				
Δ % Short-term Inst. $Inv._{i,t-1}$	0.1423 ***	0.0623 **				
	(0.0504)	(0.0262)				
% Focused Inst. $Inv._{i,t-2}$			-0.1013 *	0.0458		
			(0.0536)	(0.0363)		
Δ % Focused Inst. $Inv._{i,t-1}$			-0.2325 ***	0.0383		
			(0.0462)	(0.0279)		
% Diversified Inst. $Inv._{i,t-2}$			1.9342 ***	-0.1865 **		
			(0.0972)	(0.0791)		
Δ % Diversified Inst. $Inv._{i,t-1}$			1.5232 ***	-0.1007 *		
			(0.0813)	(0.0519)		
% Long and Foc. Inst. $Inv._{i,t-2}$					-0.0022	0.0157
					(0.0583)	(0.0425)
Δ % Long and Foc. Inst. $Inv._{i,t-1}$					-0.2364 ***	0.0076
					(0.0580)	(0.0356)
% Long and Div. Inst. $Inv._{i,t-2}$					3.4606 ***	-0.2753 *
					(0.2091)	(0.1459)
Δ % Long and Div. Inst. $Inv._{i,t-1}$					2.1724 ***	-0.1407
					(0.1643)	(0.0917)
% Short and Foc. Inst. $Inv._{i,t-2}$					-0.1479 **	0.1186 ***
					(0.0685)	(0.0442)
Δ % Short and Foc. Inst. $Inv._{i,t-2}$					-0.1067 *	0.0768 **
					(0.0548)	(0.0369)
% Short and Div. Inst. $Inv._{i,t-2}$					1.2900 ***	-0.2857 ***
					(0.1467)	(0.0969)
Δ % Short and Div. Inst. $Inv._{i,t-1}$					1.2652 ***	-0.1277 *
					(0.1132)	(0.0684)
Constant	0.7178 **	0.2673	0.9773 ***	0.2606	0.9333 ***	0.2538
	(0.2864)	(0.2172)	(0.2715)	(0.2188)	(0.2678)	(0.2192)
Other Controls?	Y	Y	Y	Y	Y	Y
Quarter Fixed Effects?	Y	Y	Y	Y	Y	Y
Year Fixed Effects?	Y	Y	Y	Y	Y	Y
Industry Fixed Effects?	Y	Y	Y	Y	Y	Y
No. Obs.	156723	156723	156723	156723	156723	156723
Adjusted R^2	0.2603	0.0992	0.2831	0.0994	0.2807	0.0999

Table XI continued.

	Panel B: Prior to 2000					
	RKRV Misval. (1)	abs(RKRV Misval.) (2)	RKRV Misval. (3)	abs(RKRV Misval.) (4)	RKRV Misval. (5)	abs(RKRV Misval.) (6)
% Long-term Inst. Inv.$_{i,t-2}$	0.1103 *	0.0736 *				
	(0.0602)	(0.0382)				
Δ % Long-term Inst. Inv.$_{i,t-1}$	-0.0557	0.0322				
	(0.0542)	(0.0270)				
% Short-term Inst. Inv.$_{i,t-2}$	0.2030 ***	0.0416				
	(0.0547)	(0.0334)				
Δ % Short-term Inst. Inv.$_{i,t-1}$	0.2561 ***	0.0258				
	(0.0511)	(0.0241)				
% Focused Inst. Inv.$_{i,t-2}$			-0.3774 ***	-0.0393		
			(0.0546)	(0.0324)		
Δ % Focused Inst. Inv.$_{i,t-1}$			-0.3776 ***	-0.0322		
			(0.0410)	(0.0271)		
% Diversified Inst. Inv.$_{i,t-2}$			1.3256 ***	0.1626 **		
			(0.1080)	(0.0725)		
Δ % Diversified Inst. Inv.$_{i,t-1}$			1.1059 ***	0.1307 **		
			(0.0856)	(0.0510)		
% Long and Foc. Inst. Inv.$_{i,t-2}$					-0.2531 ***	-0.0002
					(0.0609)	(0.0412)
Δ % Long and Foc. Inst. Inv.$_{i,t-1}$					-0.3639 ***	0.0005
					(0.0541)	(0.0323)
% Long and Div. Inst. Inv.$_{i,t-2}$					2.4602 ***	0.5233 ***
					(0.2173)	(0.1379)
Δ % Long and Div. Inst. Inv.$_{i,t-1}$					1.5762 ***	0.3054 ***
					(0.1545)	(0.0876)
% Short and Foc. Inst. Inv.$_{i,t-2}$					-0.0768	-0.0634 *
					(0.0689)	(0.0345)
Δ % Short and Foc. Inst. Inv.$_{i,t-2}$					-0.0263	-0.0677 **
					(0.0525)	(0.0307)
% Short and Div. Inst. Inv.$_{i,t-2}$					1.3002 ***	0.0848
					(0.1563)	(0.0989)
Δ % Short and Div. Inst. Inv.$_{i,t-1}$					1.1361 ***	0.1000
					(0.1216)	(0.0778)
Constant	0.6985 ***	0.5650 ***	1.2141 ***	0.6447 ***	0.9957 ***	0.6442 ***
	(0.1723)	(0.1443)	(0.1645)	(0.1446)	(0.1661)	(0.1424)
Other Controls?	Y	Y	Y	Y	Y	Y
Quarter Fixed Effects?	Y	Y	Y	Y	Y	Y
Year Fixed Effects?	Y	Y	Y	Y	Y	Y
Industry Fixed Effects?	Y	Y	Y	Y	Y	Y
No. Obs.	58929	58929	58929	58929	58929	58929
Adjusted R^2	0.2522	0.0743	0.2731	0.0748	0.2690	0.0756

Table XI continued.

	Panel C: Post 2000					
	RKRV Misval. (1)	abs(RKRV Misval.) (2)	RKRV Misval. (3)	abs(RKRV Misval.) (4)	RKRV Misval. (5)	abs(RKRV Misval.) (6)
% Long-term Inst. Inv.$_{i,t-2}$	0.3911 ***	0.0126				
	(0.1029)	(0.0730)				
Δ % Long-term Inst. Inv.$_{i,t-1}$	0.1166	-0.0183				
	(0.0926)	(0.0606)				
% Short-term Inst. Inv.$_{i,t-2}$	-0.1507	0.1200 **				
	(0.1037)	(0.0569)				
Δ % Short-term Inst. Inv.$_{i,t-1}$	0.0264	0.0900 **				
	(0.0744)	(0.0458)				
% Focused Inst. Inv.$_{i,t-2}$			-0.0439	0.0808		
			(0.0799)	(0.0583)		
Δ % Focused Inst. Inv.$_{i,t-1}$			-0.2296 ***	0.0921 *		
			(0.0735)	(0.0478)		
% Diversified Inst. Inv.$_{i,t-2}$			2.0162 ***	-0.2928 ***		
			(0.1358)	(0.1098)		
Δ % Diversified Inst. Inv.$_{i,t-1}$			1.6246 ***	-0.2200 ***		
			(0.1207)	(0.0710)		
% Long and Foc. Inst. Inv.$_{i,t-2}$					-0.0181	0.0376
					(0.1054)	(0.0766)
Δ % Long and Foc. Inst. Inv.$_{i,t-1}$					-0.2869 **	0.0109
					(0.1154)	(0.0714)
% Long and Div. Inst. Inv.$_{i,t-2}$					3.9262 ***	-0.4268 **
					(0.2798)	(0.2058)
Δ % Long and Div. Inst. Inv.$_{i,t-1}$					2.4976 ***	-0.2585 *
					(0.2520)	(0.1390)
% Short and Foc. Inst. Inv.$_{i,t-2}$					-0.3483 ***	0.2963 ***
					(0.1237)	(0.0890)
Δ % Short and Foc. Inst. Inv.$_{i,t-2}$					-0.2853 ***	0.2451 ***
					(0.0980)	(0.0673)
% Short and Div. Inst. Inv.$_{i,t-2}$					0.8518 ***	-0.4357 ***
					(0.2126)	(0.1431)
Δ % Short and Div. Inst. Inv.$_{i,t-1}$					1.1159 ***	-0.2689 ***
					(0.1765)	(0.1018)
Constant	0.1674	0.3036	0.3249	0.3064	0.3806	0.2918
	(0.3863)	(0.2891)	(0.3693)	(0.2887)	(0.3550)	(0.2902)
Other Controls?	Y	Y	Y	Y	Y	Y
Quarter Fixed Effects?	Y	Y	Y	Y	Y	Y
Year Fixed Effects?	Y	Y	Y	Y	Y	Y
Industry Fixed Effects?	Y	Y	Y	Y	Y	Y
No. Obs.	91213	91213	91213	91213	91213	91213
Adjusted R^2	0.3026	0.1361	0.3218	0.1373	0.3219	0.1386

Table XII: Estimation of firm characteristics on types of institutional investors with control variables. Column (1) uses $IVspread_{mon}$ as the dependant variable. This measure proxies for tail risk and crash events. Column (2) uses realized volatility over the past year as the dependent variable. This measure captures the overall historical risk of the firm. Columns (3) through (5) use the natural log of the average, maximum, and median managerial compensation as the dependent variable, respectively. Column (6) uses the accruals quality as the dependant variable. This measure is decreasing in accruals quality. Column (7) uses the payout ratio, which includes both dividends and share repurchases, as the dependent variable. Column (8) uses net leverage increases to total assets as the dependent variable. This measure captures capital structure dynamics in the direction of increasing leverage. Dedicated institutional investors, as defined in Bushee (1998, 2001), are characterized as having large average investment in firms in their portfolios and extremely low turnover. In contrast, transient institutional investors are institutional investors characterized as having high portfolio turnover and highly diversified portfolio holdings. Percentage of dedicated or transient institutional investors is relative to the total number of institutional investors within a firm. Panel A reports the results using observations from all years. Panels B and C report the resuls using observations prior to post 2000, respectively, to sub-sample into pre- and post- Regulation FD periods. All controls are defined in Appendix A. Standard errors are reported in the parentheses and clustered by both firm and year-quarter as in Petersen (2009). Significance at the 10% level is indicated by *, 5% level by **, and 1% level by ***.

	Panel A: All Years							
	$IVspread_{mon}$ (1)	Realized Volatility (2)	Average Executive Compensation (3)	Maximum Executive Compensation (4)	Median Executive Compensation (5)	Accruals Quality (6)	Payout Ratio (7)	Net Leverage Increase (8)
% Dedicated Inst. $Inv._{i,t-2}$	0.0609	-0.2810 ***	-1.1831	-1.3259	-1.7321 **	-0.0195	-0.1026 ***	-0.0024
	(0.0594)	(0.0819)	(0.7710)	(0.8576)	(0.7535)	(0.0212)	(0.0222)	(0.0028)
Δ % Dedicated Inst. $Inv._{i,t-1}$	-0.0074	-0.2047 **	-1.2481 **	-1.1633 *	-2.0463 ***	-0.0150	-0.0637 ***	0.0018
	(0.0634)	(0.0876)	(0.6210)	(0.6649)	(0.6638)	(0.0206)	(0.0200)	(0.0048)
% Transient Inst. $Inv._{i,t-2}$	0.0529 ***	0.3732 ***	2.0044 ***	2.2166 ***	1.6686 ***	0.0257 *	-0.2219 ***	-0.0114 ***
	(0.0135)	(0.0229)	(0.2289)	(0.2526)	(0.2187)	(0.0149)	(0.0150)	(0.0016)
Δ % Transient Inst. $Inv._{i,t-1}$	0.1152 ***	0.1534 ***	1.5938 ***	1.6925 ***	1.4399 ***	0.0161	-0.1430 ***	-0.0211 ***
	(0.0162)	(0.0252)	(0.1960)	(0.2121)	(0.1786)	(0.0124)	(0.0106)	(0.0022)
Constant	-0.0793 ***	0.7968 ***	-1.5838	-0.0834	-2.8198 ***	0.0067	-0.0084	-0.0159 ***
	(0.0155)	(0.0278)	(0.5200)	(0.4942)	(0.3531)	(0.0146)	(0.0273)	(0.0046)
Other Controls?	Y	Y	Y	Y	Y	Y	Y	Y
Quarter Fixed Effects?	Y	Y	Y	Y	Y	Y	Y	Y
Year Fixed Effects?	Y	Y	Y	Y	Y	Y	Y	Y
No. Obs.	45686	62463	57897	57897	57490	152638	143355	153340
Adjusted R^2	0.0873	0.7703	0.4511	0.4223	0.4564	0.0241	0.1295	0.0322

Table XII continued.

	Panel B: Prior to 2000							
	$IVspread_{mon}$ (1)	Realized Volatility (2)	Average Executive Compensation (3)	Maximum Executive Compensation (4)	Median Executive Compensation (5)	Accruals Quality (6)	Payout Ratio (7)	Net Leverage Increase (8)
% Dedicated Inst. Inv.$_{i,t-2}$	0.0100	-0.2377 **	-1.3551	-1.4742	-1.6765 *	0.0056	-0.0601 ***	-0.0022
	(0.0821)	(0.1029)	(0.9766)	(1.0898)	(0.9332)	(0.0202)	(0.0228)	(0.0037)
Δ % Dedicated Inst. Inv.$_{i,t-1}$	-0.0364	-0.1953 **	-1.0160	-0.8695	-1.9109 **	-0.0217	-0.0353 *	-0.0043
	(0.0944)	(0.0904)	(0.7749)	(0.8047)	(0.8286)	(0.0187)	(0.0208)	(0.0058)
% Transient Inst. Inv.$_{i,t-2}$	0.0273	0.3684 ***	2.6580 ***	2.9080 ***	2.1082 ***	0.0497 ***	-0.1627 ***	-0.0128 ***
	(0.0229)	(0.0360)	(0.3527)	(0.3968)	(0.3347)	(0.0123)	(0.0152)	(0.0024)
Δ % Transient Inst. Inv.$_{i,t-1}$	0.1295 ***	0.1091 **	2.1562 ***	2.2814 ***	1.7970 ***	0.0314 **	-0.1028 ***	-0.0257 ***
	(0.0325)	(0.0491)	(0.2522)	(0.2834)	(0.2617)	(0.0142)	(0.0114)	(0.0033)
Constant	-0.3353 ***	0.6746 ***	-1.4612 **	-0.5505	-1.4020 ***	0.0400 **	0.0004	-0.0095
	(0.0185)	(0.0321)	(0.7384)	(0.7460)	(0.0736)	(0.0198)	(0.0183)	(0.0084)
Other Controls?	Y	Y	Y	Y	Y	Y	Y	Y
Quarter Fixed Effects?	Y	Y	Y	Y	Y	Y	Y	Y
Year Fixed Effects?	Y	Y	Y	Y	Y	Y	Y	Y
No. Obs.	7171	11734	17268	17268	17052	57857	53170	57694
Adjusted R^2	0.0500	0.7546	0.4345	0.4162	0.4420	0.0499	0.1322	0.0217

Table XII continued.

	Panel C: Prior to 2000							
	$IVspread_{mon}$ (1)	Realized Volatility (2)	Average Executive Compensation (3)	Maximum Executive Compensation (4)	Median Executive Compensation (5)	Accruals Quality (6)	Payout Ratio (7)	Net Leverage Increase (8)
% Dedicated Inst. Inv.$_{i,t-2}$	0.1257	-0.0373	-1.7653	-2.0486	-2.7581 **	-0.0933 *	-0.2036 ***	-0.0050
	(0.0830)	(0.0962)	(1.1250)	(1.2658)	(1.2495)	(0.0510)	(0.0427)	(0.0046)
Δ % Dedicated Inst. Inv.$_{i,t-1}$	0.0483	0.0537	-2.0688 *	-2.1188 *	-2.9619 **	-0.0307	-0.1234 ***	0.0077
	(0.0889)	(0.1067)	(1.0695)	(1.1623)	(1.2356)	(0.0526)	(0.0397)	(0.0081)
% Transient Inst. Inv.$_{i,t-2}$	0.0676 ***	0.2848 ***	1.3162 ***	1.4988 ***	1.0474 ***	0.0040	-0.2557 ***	-0.0103 ***
	(0.0159)	(0.0214)	(0.2662)	(0.2992)	(0.2465)	(0.0244)	(0.0195)	(0.0022)
Δ % Transient Inst. Inv.$_{i,t-1}$	0.1088 ***	0.1162 ***	1.0168 ***	1.0778 ***	0.9730 ***	-0.0007	-0.1707 ***	-0.0173 ***
	(0.0191)	(0.0242)	(0.2402)	(0.2670)	(0.2061)	(0.0188)	(0.0153)	(0.0032)
Constant	0.0185	1.0417 ***	-1.6801 **	-0.2657	-2.8484 ***	-0.0687 ***	-0.0032	-0.0171 ***
	(0.0181)	(0.0208)	(0.7027)	(0.6986)	(0.4578)	(0.0204)	(0.0468)	(0.0041)
Other Controls?								
Quarter Fixed Effects?								
Year Fixed Effects?								
No. Obs.	36453	48147	38163	38163	37979	88271	84230	89189
Adjusted R^2	0.0456	0.8420	0.4901	0.4567	0.4868	0.0273	0.1426	0.0429

Table XIII: Estimation of firm characteristics on types of institutional investors with control variables. Column (1) uses $IVspread_{mon}$ as the dependant variable. This measure proxies for tail risk and crash events. Column (2) uses realized volatility over the past year as the dependent variable. This measure captures the overall historical risk of the firm. Columns (3) through (5) use the natural log of the average, maximum, and median managerial compensation as the dependent variable, respectively. Column (6) uses the accruals quality as the dependant variable. This measure is decreasing in accruals quality. Column (7) uses the payout ratio, which includes both dividends and share repurchases, as the dependent variable. Column (8) uses net leverage increases to total assets as the dependent variable. This measure captures capital structure dynamics in the direction of increasing leverage. Long- (short-) horizon institutional investors, as defined in Yan and Zhang (2009), are characterized by having low (high) portfolio turnover. Focused (diversified) institutional investors, as defined in Bushee (1999, 2001), are characterized by having high (low) average holdings in invested firms. Percentage of institutional investor type is relative to the total number of institutional investors within a firm. All controls are defined in Appendix A. Standard errors are reported in the parentheses and clustered by both firm and year-quarter as in Petersen (2009). Significance at the 10% level is indicated by *, 5% level by **, and 1% level by ***.

	$IVspread_{mon}$ (1)	Realized Volatility (2)	Average Executive Compensation (3)	Maximum Executive Compensation (4)	Median Executive Compensation (5)	Accruals Quality (6)	Payout Ratio (7)	Net Leverage Increase (8)
% Long-term and Focused Inst. Inv.$_{i,t-2}$	0.0558	-0.5958 ***	-0.1072	-0.8524	1.2042 **	-0.0081	0.0897 ***	0.0051 ***
	(0.0411)	(0.0751)	(0.4888)	(0.5401)	(0.4761)	(0.0143)	(0.0178)	(0.0019)
Δ % Long-term and Focused Inst. Inv.$_{i,t-1}$	-0.0139	-0.3726 ***	-0.7231 *	-1.2107 ***	0.0336	-0.0079	0.0621 ***	0.0109 ***
	(0.0408)	(0.0711)	(0.3904)	(0.4228)	(0.3725)	(0.0114)	(0.0141)	(0.0024)
% Long-term and Diversified Inst. Inv.$_{i,t-2}$	0.0455	-0.3328 ***	-0.3179	-0.1712	-0.7641	-0.0570	0.7273 ***	0.0174 ***
	(0.0382)	(0.0683)	(0.6152)	(0.6966)	(0.5607)	(0.0492)	(0.0662)	(0.0049)
Δ % Long-term and Diversified Inst. Inv.$_{i,t-1}$	-0.0147	-0.0212	-0.0304	0.0007	-0.1640	-0.0274	0.3312 ***	0.0006
	(0.0470)	(0.0728)	(0.4130)	(0.4509)	(0.4168)	(0.0332)	(0.0482)	(0.0060)
% Short-term and Focused Inst. Inv.$_{i,t-2}$	0.1521 ***	0.0299	1.8769 ***	1.9433 ***	2.0014 ***	0.0178	-0.0776 ***	-0.0032
	(0.0282)	(0.0404)	(0.3543)	(0.3956)	(0.3308)	(0.0149)	(0.0135)	(0.0022)
Δ % Short-term and Focused Inst. Inv.$_{i,t-2}$	0.0704 ***	0.0063	1.0461 ***	1.0960 ***	1.1074 ***	0.0167	-0.0467 ***	-0.0053
	(0.0256)	(0.0380)	(0.2675)	(0.2892)	(0.2453)	(0.0125)	(0.0117)	(0.0040)
% Short-term and Diversified Inst. Inv.$_{i,t-2}$	0.0816 **	0.0109	3.1375 ***	3.3952 ***	2.3757 ***	0.0272	-0.0940 ***	0.0022
	(0.0332)	(0.0479)	(0.4243)	(0.4577)	(0.3999)	(0.0328)	(0.0361)	(0.0040)
Δ % Short-term and Diversified Inst. Inv.$_{i,t-1}$	0.1311 ***	-0.1329 **	2.3837 ***	2.4449 ***	2.2075 ***	0.0558 **	-0.0612 **	-0.0161 ***
	(0.0260)	(0.0535)	(0.2796)	(0.2961)	(0.2621)	(0.0247)	(0.0299)	(0.0048)
Constant	-0.0965 ***	0.9708 ***	-1.6165 ***	0.0385 ***	-3.2513 ***	0.0037	-0.0496	-0.0183 ***
	(0.0188)	(0.0273)	(0.3233)	(0.0077)	(0.3462)	(0.0176)	(0.0316)	(0.0049)
Other Controls?	Y	Y	Y	Y	Y	Y	Y	Y
Quarter Fixed Effects?	Y	Y	Y	Y	Y	Y	Y	Y
Year Fixed Effects?	Y	Y	Y	Y	Y	Y	Y	Y
No. Obs.	45686	62463	57897	57897	57490	152638	143355	153340
Adjusted R^2	0.0874	0.7642	0.4478	0.4191	0.4544	0.0241	0.1307	0.0316

Table XIV: Estimation of future firm performance on types of institutional investors with control variables. Columns (1) through (4) use the buy-and-hold realized returns for 1-qtr, 2-qtr, 3-qtr, and 4-qtr post, respectively. Realized returns are calculated by compounding monthly returns over the relevant quarter. Columns (5) through (8) use the buy-and-hold abnormal returns for 1-qtr, 2-qtr, 3-qtr, and 4-qtr post, respectively. Abnormal returns are calculated relative to the Pastor and Stambaugh 5-factor model. Dedicated institutional investors, as defined in Bushee (1998, 2001), are characterized as having large average investment in firms in their portfolios and extremely low turnover. In contrast, transient institutional investors are institutional investors characterized as having high portfolio turnover and highly diversified portfolio holdings. Percentage of dedicated or transient institutional investors is relative to the total number of institutional investors within a firm. All controls are defined in Appendix A. Standard errors are reported in the parentheses and clustered by both firm and year-quarter as in Petersen (2009). Significance at the 10% level is indicated by *, 5% level by **, and 1% level by ***.

	Forward 1-Qtr Returns (1)	Forward 2-Qtr Returns (2)	Forward 3-Qtr Returns (3)	Forward 4-Qtr Returns (4)	Forward 1-Qtr Ab. Returns (5)	Forward 2-Qtr Ab. Returns (6)	Forward 3-Qtr Ab. Returns (7)	Forward 4-Qtr Ab. Returns (8)
% Dedicated Inst. Inv.$_{i,t-2}$	0.0210 *	0.0220 *	0.0202	0.0268 *	0.0195	0.0383 ***	0.0211	0.0137
	(0.0114)	(0.0129)	(0.0156)	(0.0143)	(0.0119)	(0.0139)	(0.0146)	(0.0139)
Δ % Dedicated Inst. Inv.$_{i,t-1}$	-0.0296	0.1214 ***	0.0109	0.0362	0.0006	0.0413 *	0.0575 **	0.0143
	(0.0300)	(0.0368)	(0.0365)	(0.0494)	(0.0181)	(0.0232)	(0.0234)	(0.0231)
% Transient Inst. Inv.$_{i,t-2}$	-0.0133	-0.0194 *	-0.0301 **	-0.0103	0.0008	-0.0121	-0.0077	-0.0167
	(0.0092)	(0.0109)	(0.0119)	(0.0135)	(0.0071)	(0.0092)	(0.0101)	(0.0102)
Δ % Transient Inst. Inv.$_{i,t-1}$	0.0010	0.0042	-0.0532 **	-0.0164	0.0257 ***	-0.0104	0.0049	-0.0143
	(0.0151)	(0.0194)	(0.0212)	(0.0235)	(0.0076)	(0.0095)	(0.0113)	(0.0133)
Constant	0.0152	-0.0020	0.0041	-0.0317	-0.0281 ***	-0.0244 **	-0.0398 ***	-0.0116
	(0.0293)	(0.0349)	(0.0511)	(0.0400)	(0.0074)	(0.0095)	(0.0121)	(0.0123)
Other Controls?	Y	Y	Y	Y	Y	Y	Y	Y
Quarter Fixed Effects?	Y	Y	Y	Y	Y	Y	Y	Y
Year Fixed Effects?	Y	Y	Y	Y	Y	Y	Y	Y
No. Obs.	142866	150053	150684	153421	108424	113454	113855	112824
Adjusted R^2	0.0529	0.0274	0.0364	0.0034	0.0053	0.0056	0.0057	0.0069

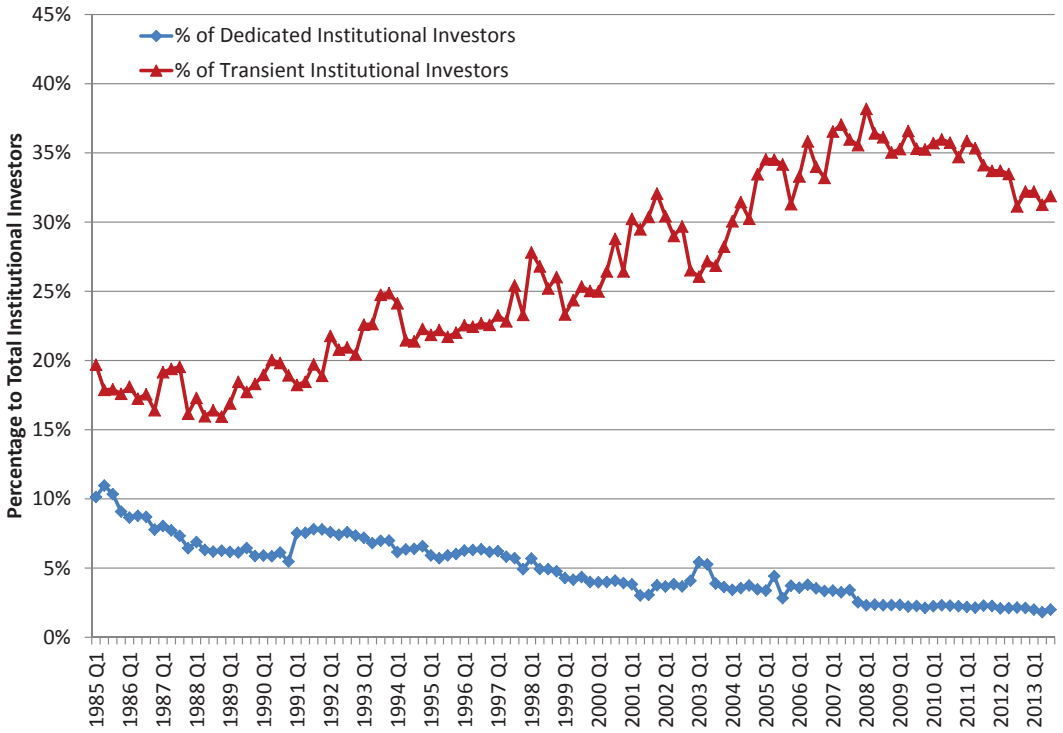

Figure 1: Percentage of transient or dedicated institutional ownership to total institutional ownership over time. Dedicated institutional investors, as defined in Bushee (1998, 2001), are characterized as having large average investment in firms in their portfolios and extremely low turnover. In contrast, transient institutional investors are institutional investors characterized as having high portfolio turnover and highly diversified portfolio holdings.

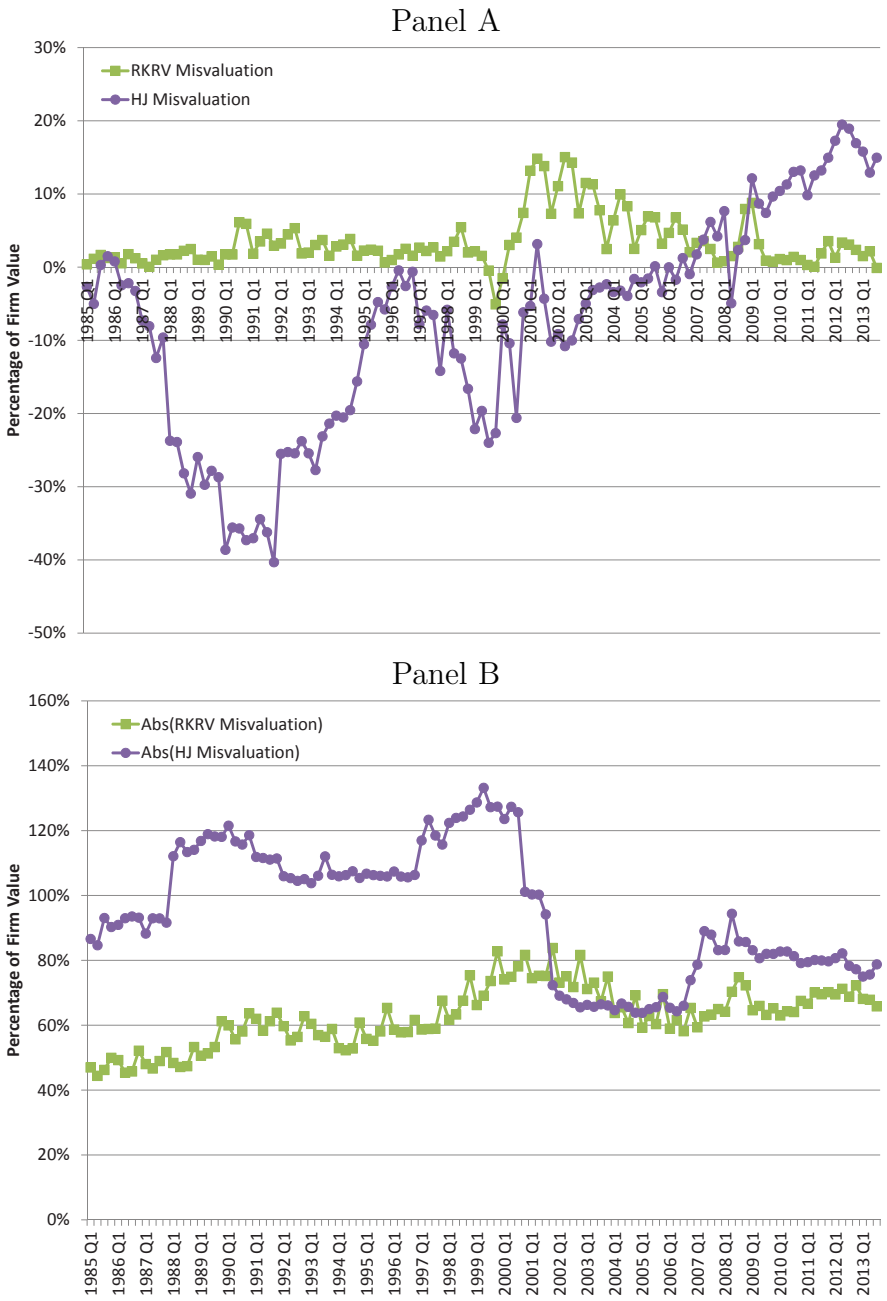

Figure 2: Firm misvaluation over time. We use two definitions of firm misvaluation. Rhodes-Kropf, Robinson, and Viswanathan (2005) decomposes the market-to-book ratio into three types of components: firm-specific error, time-series sector error, and long-run market-to-book. RKRV Misvaluation refers to the firm-specific error from the RKRV decomposition. The HJ Misvaluation is based on the Hirshleifer and Jiang (2010) UMO factor. Returns for each firm are regressed on a Carhart (1997) 4-factor along with the Hirshleifer and Jiang (2010) UMO factor. A positive (negative) beta on the UMO factor indicates an under- (over-) valued firm. The HJ firm-specific misvaluation takes the negative of the UMO beta such that a positive (negative) measure indicates an over- (under-) valued firm. Panel A tracks the RKRV and HJ firm misvaluation over time. Panel B tracks the absolute value of the misvaluation measures over time. This captures the magnitude of the misvaluation.

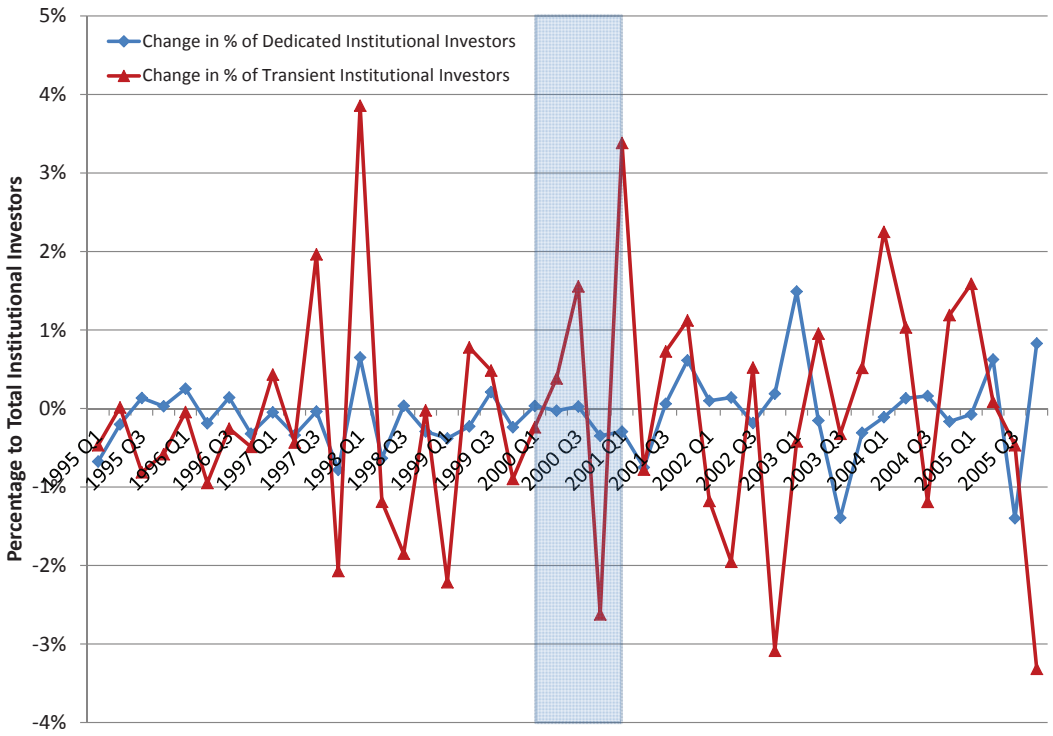

Figure 3: Change in percentage of transient or dedicated institutional ownership to total institutional ownership between 1995 to 2005. 2000 is shaded to highlight the year during which Regulation FD is enacted. This SEC regulation reduced the informational advantage enjoyed by important institutions by mandating that all firm disclosures be made public. Dedicated institutional investors, as defined in Bushee (1998, 2001), are characterized as having large average investment in firms in their portfolios and extremely low turnover. In contrast, transient institutional investors are institutional investors characterized as having high portfolio turnover and highly diversified portfolio holdings.

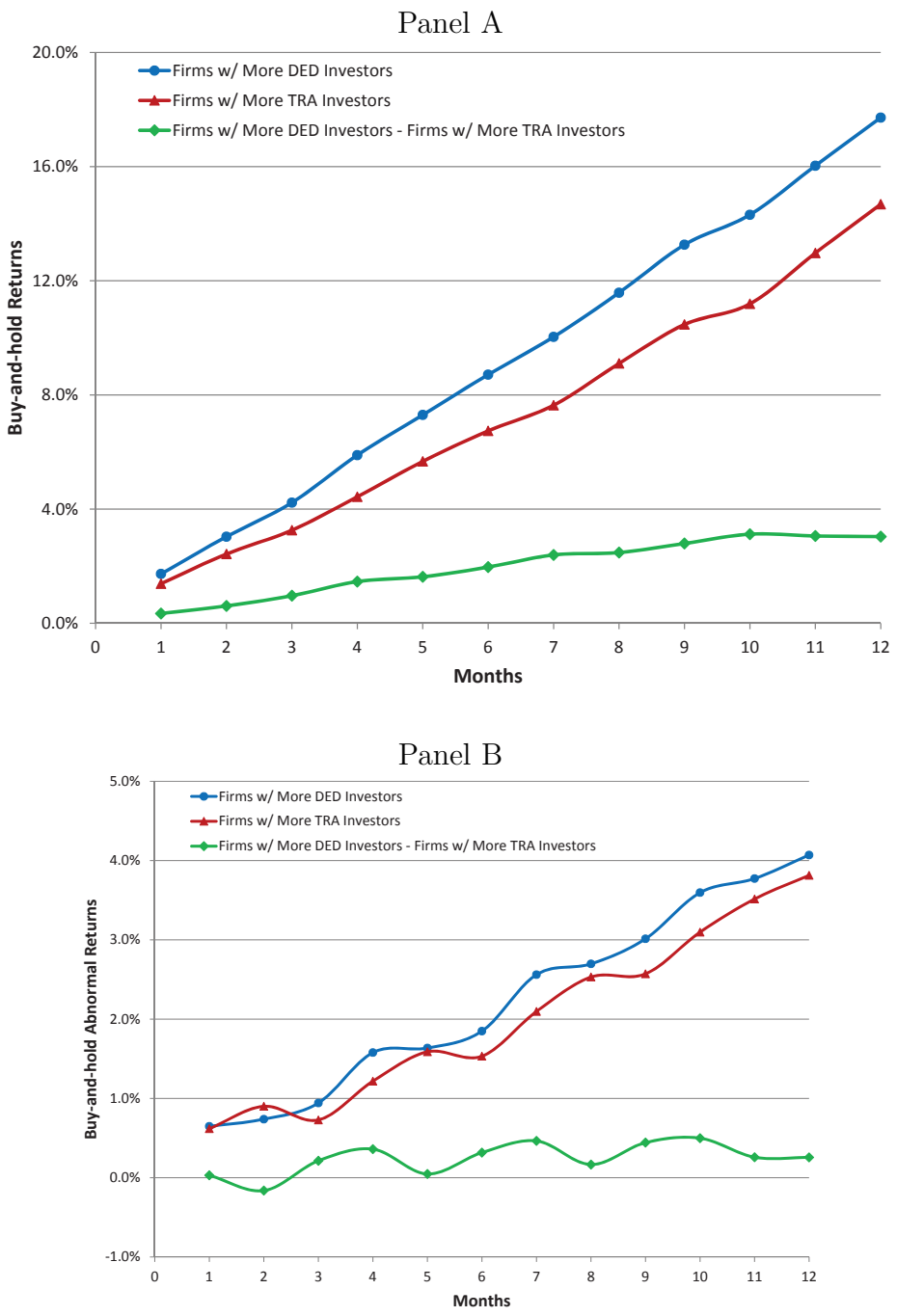

Figure 4: Monthly returns of firms with more transient or dedicated institutional investors. Panel A shows the buy-and-hold monthly returns for firms with more transient institutional investors than the median firm and firms with more dedicated institutional investors than the median firm. Panel B shows the buy-and-hold abnormal returns based on the Pastor and Stambaugh (2005) 5-factor model. Dedicated institutional investors, as defined in Bushee (1998, 2001), are characterized as having large average investment in firms in their portfolios and extremely low turnover. In contrast, transient institutional investors are institutional investors characterized as having high portfolio turnover and highly diversified portfolio holdings.

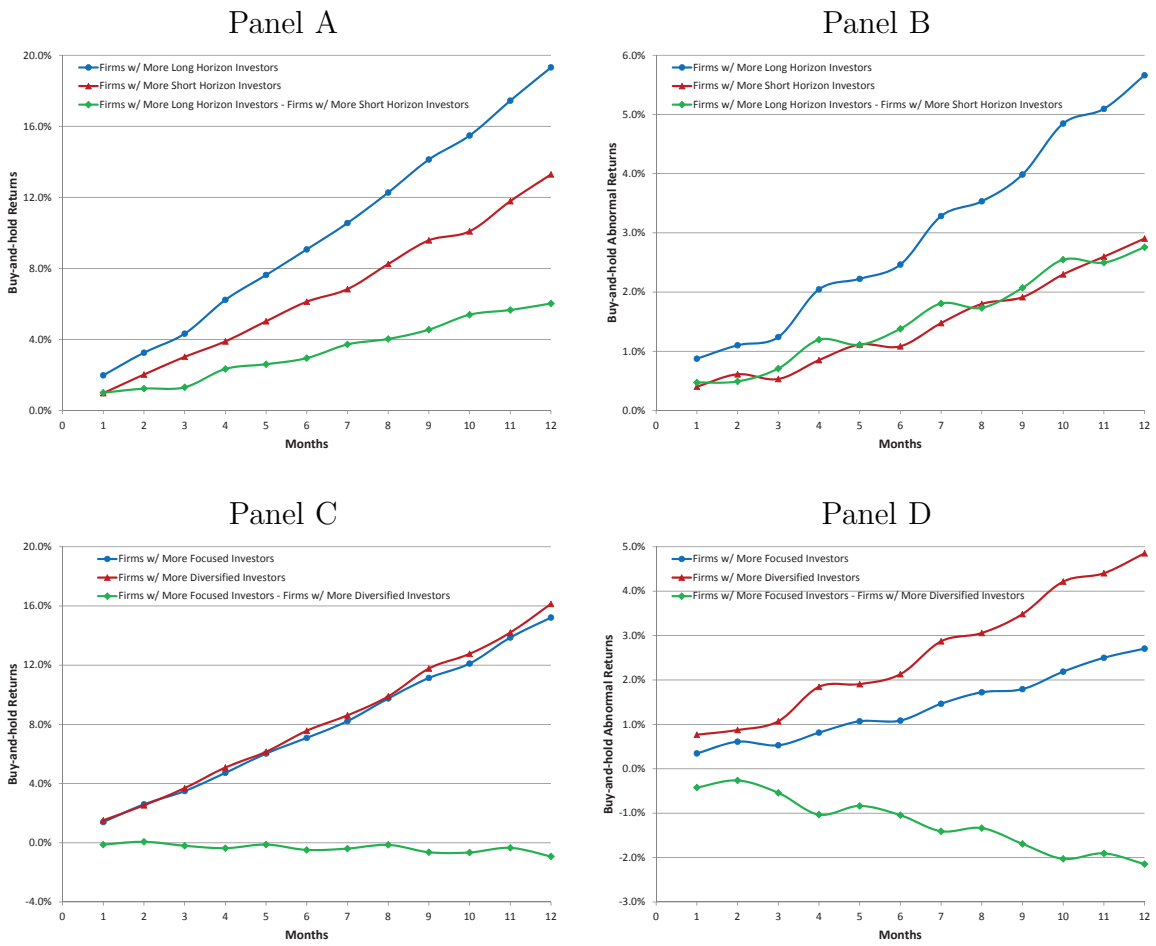

Figure 5: Monthly returns of firms across different institutional investor characteristics. Panels A and B show the buy-and-hold monthly returns and abnormal returns, respectively, for firms with more long-horizon institutional investors than the median firm and firms with more short-horizon institutional investors than the median firm. Panels C and D show the buy-and-hold monthly returns and abnormal returns, respectively, for firms with more focused institutional investors than the median firm and firms with more diversified institutional investors than the median firm. Abnormal returns are calculated relative to the Pastor and Stambaugh (2005) 5-factor model.