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Investor Horizons and Corporate Policies

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Abstract

We study the effect of investor horizons on corporate behavior. We argue that longer investor horizons attenuate the effect of stock mispricing on corporate policies. Consistent with our argument, we find that when a firm is undervalued, greater long-term investor ownership is associated with more investment, more equity financing, and less payouts to shareholders. Our results do not appear to be explained by long-term investor self-selection, monitoring (corporate governance), or concentration (blockholdings). Our results are consistent with a version of market timing in which mispriced firms cater to the tastes of their short-term investors rather than their long-term investors.

I. Introduction

> By October of 2000, AT&T's shares were mired in a decline . . . AT&T's [CEO Michael] Armstrong decided to throw in the towel on his cosmic strategy of integrating voice, video, and wireless into one bundle of services . . . [T]he stock had been pounded and . . . the market wasn't giving credit to the company's long-run strategy . . . [T]he market's myopia was forcing him to abandon his grand transformation plan. (Reingold (2006), pp. 224–225)

Institutional ownership of U.S. firms has increased dramatically during the last 50 years, and institutional investors today own the great majority of U.S. firms. However, institutional investors are far from homogeneous (e.g., see

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Gompers and Metrick (2001)). One of the dimensions along which they differ is the horizon of their investments. Their investment horizons can differ because the maturities of their liabilities differ. For example, pension funds have long-term liabilities and thus long investment horizons whereas mutual funds are subject to large short-term redemptions and thus their investment horizons are also short-term. Investors also differ in their investment strategies: Some, like Stevie Cohen, turn their portfolios over with lightning speed while others, like Warren Buffett, hold their portfolios forever. Surprisingly, however, there is little research on the effect of investor horizons on corporate policies. This paper aims to fill this void.

In perfect capital markets, a firm's stock price always equals its fundamental value and the investment horizon of its investors does not matter for corporate policies. Managers' investment decisions maximize the firm's fundamental value. These decisions are fully reflected in the firm's stock price, and investors can meet their liquidity needs by selling their shares before the firm's investments pay off. Mispricing of the firm's stock, however, creates tension between investors with different investment horizons. This tension arises because mispricing does not matter for long-term investors who are able to wait until the mispricing is corrected, but it does matter for short-term investors who might have to sell their shares when the firm is still mispriced.

For example, consider a firm whose stock is temporarily priced below its fundamental value. Managers' investment decisions are not fully reflected in the firm's stock price. In this case, short-term investors prefer less investment than do long-term investors. If managers maximize the wealth of the firm's average investor, then when the firm is undervalued, the shorter the horizon of the firm's average investor, the less managers invest. Moreover, since managers invest less, holding other sources of financing constant, such a firm issues less equity to finance its investments and pays out more to its shareholders because its short-term investors value $1 in cash flow today more highly than a claim on the present value of $1 of future cash flows. In summary, we expect long-term investors to attenuate the effects of mispricing on corporate policies.

In our tests, we regress various corporate policy variables on the interaction between misvaluation and the fraction of the firm's shares held by long-term investors and control for other determinants of corporate policies. To measure the investment horizon of a firm's investors, we follow Gaspar, Massa, and Matos (2005) among others, and we measure the investment horizons of investors based on their portfolio turnover and the investor horizons of firms based on the ownership of their long-term investors. To measure mispricing, we follow the literature on the real effects of misvaluation. We use three residual book-to-market variables as our first three proxies for misvaluation (see Pástor and Veronesi (2003), Rhodes-Kropf, Robinson, and Viswanathan (2005), and Hoberg and Phillips (2010)), and we use the raw book-to-market ratio as our fourth proxy. As our fifth and sixth proxies, we use future excess returns (see Baker, Stein, and Wurgler (2003), Polk and Sapienza (2009)) and mutual fund flows (see Edmans, Goldstein, and Jiang (2012), Khan, Kogan, and Serafeim (2012)).

Our results support our argument that investor horizons affect corporate policies when the firm is mispriced. We find that, for undervalued firms, investment and equity financing increase with investor horizons and payouts decrease with investor horizons. Our results are economically and statistically significant. For example, a 1-standard-deviation increase in both long-term investor ownership and undervaluation increases capital expenditures and equity issuance by about 0.3% and 0.4% of total assets, respectively.

We perform several robustness tests. One alternative interpretation of our results is self-selection. To examine this interpretation, we exploit the insight that investors who index cannot be active investors but they can be activist investors. We split long-term investors into nonindexers and indexers,[1] and we find that our results are similar for both possibly endogenous nonindexers and plausibly exogenous indexers. This is inconsistent with self-selection. Another alternative interpretation is monitoring. This may be the case if investor horizons are simply a proxy for corporate governance. However, when we control for governance, our results are largely similar notwithstanding the decrease in the sample size by ⅘. A third alternative interpretation is concentration. This may be the case if our long-term investors are simply concentrated investors (i.e., blockholders). However, when we control for blockholder ownership, our results are once again similar, which suggests that horizons are distinct from concentration.

Our paper contributes to the market timing literature by disentangling two views of why firms time the market. Papers in this literature typically assume that firms aim to please one of two groups of investors: short-term or long-term. According to the "capital structure arbitrage" view, firms exploit temporary misvaluation of their stock to transfer value to *long-term* investors. By contrast, the "catering" view holds that firms pursue whatever investment, financing, and payout policies cater to the time-varying tastes of *short-term* investors.[2] For instance, the literature provides evidence that firms that are overvalued issue more equity,[3] but the interpretation of this finding differs according to the two views. According to the capital structure arbitrage view, overvalued firms transfer value to long-term investors by issuing equity and retaining rather than investing the proceeds. The catering view holds that overvalued firms issue equity and invest the proceeds in order to please short-term investors who overvalue the firm's investment opportunities.[4] In summary, both views are consistent with the evidence that firms time the market, but the capital structure arbitrage view holds that they do so to transfer value to long-term investors whereas the catering view holds that they do so to cater to short-term investors. Our paper uses investor horizons to disentangle these two views and finds support for the catering view over the capital structure arbitrage view.

[1] Investors who index are long-term investors because the composition of the index changes infrequently. Moreover, they cannot choose the firms in which they invest because they must replicate the index, but they can influence the firms in which they do invest. For details, see Carleton, Nelson, and Weisbach (1998), Del Guercio and Hawkins (1999), and Gillan and Starks (2000).

[2] See Shleifer and Vishny (2003), Baker and Wurgler (2004), Gilchrist, Himmelberg, and Huberman (2005), Polk and Sapienza (2009), and Hoberg and Phillips (2010).

[3] See Loughran and Ritter (1995) and Baker and Wurgler (2002).

[4] The opposite interpretations hold for shares repurchases by undervalued firms (see Ikenberry, Lakonishok, and Vermaelen (1995), Hong, Wang, and Yu (2008)). The capital structure arbitrage view holds that undervalued firms repurchase shares to transfer value to their long-term investors whereas the catering view holds that these firms decrease investment and increase payouts to cater to their short-term investors.

We also contribute to the emerging literature on investor horizons. This literature revolves around the idea that short-term investors influence managers to pursue corporate policies that destroy firm value (Stein (1996)). For example, firms with shorter investor horizons reduce research and development expenditures to increase short-term earnings (Bushee (1998)). Similarly, investors of firms with shorter investor horizons fare worse in takeovers whether they are investors of targets or acquirers (Gaspar et al. (2005), Chen, Harford, and Li (2007)). Consistent with pressure from short-term investors to meet short-run earnings targets, public firms invest less than private firms (Asker, Farre-Mensa, and Ljungqvist (2010)). Investor horizons also affect the trade-off between dividends and share repurchases (Gaspar, Massa, Matos, Patgiri, and Rehman (2012)). Moreover, most managers admit that they are willing to sacrifice projects that are profitable in the long run in order to meet short-run earnings targets (Graham, Harvey, and Rajgopal (2005)). Other research finds that the trading of short-term investors is more responsive to corporate news (Hotchkiss and Strickland (2003), Yan and Zhang (2009)) and aggregate liquidity shocks (Cella, Ellul, and Giannetti (2011)). We focus on the effect of investor horizons on corporate policies conditional upon mispricing and thereby avoid the endogeneity concerns that arise from studying the unconditional effect of investor horizons on corporate policies. Our paper exploits the fact that investor horizons matter mostly when the firm is mispriced. Therefore, our corporate policy effects are not identified by investor horizons on their own but by the interaction between investor horizons and mispricing.

The rest of the paper is organized as follows: Section II presents the theoretical framework and empirical predictions. Section III presents the sample and data. Section IV presents the main results. Section V presents robustness tests of the main results. Section VI concludes the paper.

II. Theoretical Framework and Empirical Predictions

Our theoretical framework is similar to that of Stein (1996) and Polk and Sapienza (2009). Consider a firm with two types of shareholders: long-term and short-term. We assume that long-term shareholders do not trade their shares, for example, because they have long-term liabilities (like pension funds), whereas short-term shareholders trade frequently, for example, because of redemptions or liquidity shocks. Hence, long-term shareholders care about all future cash flows (i.e., the fundamental value of the stock) while short-term shareholders only care about short-term cash flows and the resale price of the stock.

If the stock market is informationally efficient, the ownership structure of the firm does not affect its investment policy. The resale price of the stock equals its fundamental value, so both short-term and long-term shareholders care about the same thing: the present value of all future cash flows. If there are no agency problems between managers and shareholders, managers choose the investment policy that maximizes firm value irrespective of the ownership structure of the firm.

If, on the other hand, the stock price deviates from its fundamental value, ownership structure matters even if there are no agency problems between managers and shareholders. Assume that the firm is undervalued. Future cash flows are now worth less to short-term shareholders whereas they are still worth the same to long-term shareholders (and more than they are worth to short-term shareholders). If, at the one extreme, the firm were entirely owned by long-term shareholders, the manager would choose the same investment policy as if the firm were not undervalued. At the other extreme, if the firm were entirely owned by short-term shareholders, the manager would choose to minimize investment because future cash flows are worth less than before to short-term shareholders.

Assume that the manager maximizes the mean of shareholders' valuations of the firm, that is, he chooses the investment policy that is optimal from the perspective of the average shareholder.[5] In this case, the greater the ownership of short-term shareholders compared to long-term shareholders, the less the manager invests. We summarize this intuition in the following hypothesis:

Hypothesis 1. For undervalued firms, investment increases with investor horizons.[6]

When a firm is undervalued, its short-term shareholders underweight future cash flows. The greater their ownership, the less the firm invests, and thus, holding other sources of financing constant, the less equity it issues to finance its investments. This intuition is summarized in our second hypothesis:

Hypothesis 2. For undervalued firms, equity financing increases with investor horizons.

The counterpart to financing is payouts. When the firm is undervalued, short-term investors want to minimize cash flowing from shareholders to the firm for investment and instead want to maximize cash flowing from the firm to shareholders (i.e., dividends and share repurchases). Thus, our third hypothesis is as follows:

Hypothesis 3. For undervalued firms, payouts to shareholders decrease with investor horizons.

In summary, longer investor horizons attenuate the effect of mispricing on corporate policies: When a firm is undervalued, the longer the horizon of its shareholders, the more it invests, the more equity it issues, and the less it pays out in dividends and share repurchases.

III. Sample and Data

A. Sample Construction and Data Sources

Since our empirical strategy is to explain corporate policies with investor horizons and mispricing, we explain corporate policies in year t with investor horizons and mispricing both in year $t-1$. Therefore, our data on both

[5]This is a standard assumption when managers face heterogeneous shareholders (e.g., Miller and Rock (1985)). The only assumption we need is that each type of shareholder has some weight in managers' decisions and that its weight increases with its ownership of the firm. We do not need to assume agency problems between managers and shareholders (e.g., Gaspar et al. (2005), Chen et al. (2007)). We note that long-term investors can influence managers by credibly threatening to sell their shares if managers do not change corporate policies (Admati and Pfleiderer (2009), Edmans (2009)).

[6]Throughout this section, we frame our hypotheses in terms of undervalued firms and long-term investors. This is purely for expositional simplicity. Our intuitions are symmetric for overvalued firms and short-term investors.

investor horizons and mispricing (1984–2009) lag our data on corporate policies (1985–2010) by 1 year.

We construct our sample as follows. We begin with all publicly traded U.S. firms in Center for Research in Security Prices (CRSP) and Compustat between 1985 and 2010. We keep U.S. operating firms defined as firms with CRSP share codes of 10 or 11. We drop firms that are financials or utilities or that have real total assets in Dec. 2010 dollars of less than $10 million. This leaves our sample of 88,986 firm-years comprising 10,579 unique firms between 1985 and 2010. We start our sample in 1985 because we require 4 years of data to compute investor horizons as we explain later.

Throughout our empirical analysis, by “firms” we mean firms in CRSP and Compustat, and by “investors” we mean institutional investors in Thomson’s 13F filings database. Stock trading data are from CRSP, accounting data are from Compustat, investor portfolio data are from Thomson’s 13F filings, mutual fund outflows data are from Alex Edmans, and entrenchment index data are from Investor Responsibility Research Center (IRRC). We winsorize all continuous variables at the 1st and 99th percentiles. Table 1 presents summary statistics for all of our variables. In this table, corporate policy variables are not industry adjusted.

TABLE 1

Summary Statistics

Table 1 presents summary statistics for the variables used in this paper. The sample comprises 88,986 firm-years consisting of 10,579 unique firms between 1985 and 2010. Investors in roughly the bottom quartile of 3-year portfolio turnover are classified as “long-term investors,” and all other investors are classified as “short-term investors.” Investors with an active share of up to 0.25 are classified as “indexers.” Investors that own at least 5% of a firm’s shares are classified as “blockholders.” PV residual B/M, RRV residual B/M, and HP residual B/M are the book-to-market residuals estimated from the valuation models of Pástor and Veronesi (2003), Rhodes-Kropf et al. (2005), and Hoberg and Phillips (2010), respectively. Future excess returns is raw returns minus market index returns. Mutual fund outflows is the amount of a stock sold by mutual funds with extreme fund outflows divided by the amount of the stock traded by all investors. All corporate policy variables are divided by total assets and are measured as a percentage of total assets.

Variables	Observations	Mean	Standard Deviation
Investor ownership variables			
Institutional ownership (%)	88,971	36.85	28.65
Long-term investor ownership (%)	88,971	13.10	12.89
Long-term indexer ownership (%)	88,971	4.53	5.02
Blockholder ownership (%)	88,971	11.87	13.12
Valuation proxies			
PV residual B/M	84,794	0.00	0.56
RRV residual B/M	76,823	0.00	0.48
HP residual B/M	76,537	0.00	0.48
Raw B/M	85,488	0.72	0.62
Future excess returns (%)	83,995	4.08	63.72
Mutual fund outflows	45,787	2.42	4.64
Corporate policy variables			
Capital expenditures (%)	88,812	6.90	8.18
Equity issuance (%)	88,812	5.40	16.96
Dividends (%)	88,812	0.77	1.59
Share repurchases (%)	88,812	1.40	3.79
Entrenchment index (0–6)	17,423	2.38	1.30

B. Measuring Investor Horizons

Since we study the effect of investor horizons on the corporate policies of mispriced firms, we need to measure investor horizons. We begin by measuring the investment horizons of investors based on their portfolio turnover. We then classify investors as short-term or long-term investors based on their investment horizons. Finally, we measure the investor horizons of firms by aggregating the ownership of their long-term investors.[7]

We measure an investor's investment horizon as the investor's portfolio turnover (e.g., Barber and Odean (2000), Hotchkiss and Strickland (2003), and Gaspar et al. (2005)). We refer to this variable as "investor turnover," and we compute it as follows. For each investor j, each quarter t, and each stock i, we compute the fraction of stock i held by investor j at date $t-12$ (i.e., 3 years ago) that is sold at date t. If investor j is a net buyer of stock i between $t-12$ and t, we set this stock turnover to 0. We only use the stocks of firms that are publicly traded at both t and $t-12$. We then weight this stock turnover by the weight of stock i in investor j's portfolio at $t-12$ and sum it over all stocks held in the investor's portfolio at $t-12$. Finally, we compute the mean of investor turnover during the 4 quarters from $t-3$ to t to reduce the influence of 1 quarter with extreme turnover. This resulting measure captures the fraction of the investor's portfolio turned over during the last 3 years; it lies between 0 and 1.

We classify investors with a portfolio turnover of 35% or less as "long-term investors" (cf. Froot, Perold, and Stein (1992)). We classify all other investors (even if we cannot compute their portfolio turnover) as "short-term investors." The 35% cutoff roughly corresponds to the bottom quartile of investor turnover, and its distribution is stable over time. By construction, short-term investors and long-term investors together comprise all institutional investors.

To better understand our long-term investors, we examine the 25 institutions with the longest horizons as of Dec. 31, 2009. Table 2 presents their name, their type, their portfolio turnover, the number of firms they hold in their portfolio, and the market value of their portfolio. Most of these long-term investors (17 out of 25) are investment management firms (consistent with Goyal and Wahal (2008)); the others comprise three banks and two insurance firms, as well as the pension fund of an industrial firm (ExxonMobil), an endowment (Lilly Endowment), and a large individual investor. The mean (median) investor holds 958 (169) firms in its portfolio and its portfolio has a market value of \$48.1 billion (\$4.6 billion). Some of these investors have fairly concentrated stock ownership, but most of them are well diversified. Moreover, it is obvious that many of these long-term investors have a long investment horizon. For example, Warren Buffett states that his "favorite holding period is forever," and Eddie Lampert is also well known to be a long-term investor. We also classify many well-known indexers as long-term investors: Vanguard Group (6th) and State Street (20th). This is consistent with our theoretical framework, which does not require that long-term investors monitor more. We also correctly classify numerous famous short-term investors:

[7] An alternative empirical strategy is to study the effect of manager horizons instead of the effect of investor horizons. Manager horizons can be measured, for example, as the proportion of executive compensation that is incentive based (i.e., stock and/or options) or as the vesting structure of incentive-based executive compensation. However, manager horizons and investor horizons do not need to be correlated in theory because, for example, it may be optimal for long-term investors to monitor managers rather than incentivizing them with long-term compensation. Using ExecuComp data to construct such measures of manager horizons, we do not find a significant relationship between corporate policies and manager horizons for undervalued firms.

Stevie Cohen (1,170th out of 1,531 investors with a turnover of 79.7%), John Paulson (951st with a turnover of 69.3%), and György Soros (1,255th with a turnover of 83.3%). Overall, our classification of investors as short-term or long-term based on their portfolio turnover appears to be reasonable.

TABLE 2

Investors with the Longest Horizons as of Dec. 31, 2009

Table 2 presents information on the 25 investors with the longest horizons as of Dec. 31, 2009. Investor horizon is measured as the investor's portfolio turnover over the past 3 years.

Investor Name	Investor Type	Portfolio Turnover (%)	No. of Stocks	Total Assets ($M)
SC X Management, LLC	Private investment management firm (Sequoia Capital)	0.00	5	241
Parametric Risk Advisors LLC	Public investment management firm (subsidiary of Eaton Vance Corp.)	0.00	120	835
Sageview Capital LP	Private investment management firm	0.00	4	231
ESL Investments Inc.	Eddie Lampert's private investment management firm	0.90	11	11,034
Moody National Bank	Private bank	1.05	128	1,387
Vanguard Group, Inc.	Private investment management firm	1.17	3,379	423,334
RhumbLine Advisers Corp.	Private investment management firm	1.23	2,638	18,303
Joseph H. Reich	Individual investor	1.37	6	280
Pacific Heights Asset Management, LLC	Private investment management firm	1.40	53	1,089
Geode Capital Management, LLC	Private investment management firm	1.76	2,965	56,039
ProShare Advisors LLC	Private investment management firm	2.15	1,467	4,559
ExxonMobil Investment Management Inc.	Public industrial firm	2.33	481	3,426
Loews Corp.	The Tisch family's public investment management firm	3.04	78	12,857
Legal & General Group PLC	Public insurance firm	3.08	620	43,451
Aperio Group, LLC	Private investment management firm	3.65	588	934
Grove Creek Asset Management LLC	Private investment management firm	4.61	169	1,456
Lilly Endowment, Inc.	Endowment (consisting entirely of Eli Lilly and Company stock)	5.17	1	4,845
Berkshire Hathaway Inc.	Warren Buffett's public investment management firm	5.19	36	57,331
American Capital Management, Inc.	Private investment management firm	5.36	81	273
State Street Corp.	Public bank	5.46	3,109	451,129
Norges Bank	Central bank of Norway	5.91	1,944	76,319
United Fire & Casualty Company	Public insurance firm	6.77	53	126
MFC Global Investment Management Ltd.	Public investment management firm (subsidiary of Manulife Financial Corp.)	6.86	2,381	12,098
Parametric Portfolio Associates LLC	Public investment management firm (subsidiary of Eaton Vance Corp.)	6.97	2,514	17,431
NISA Investment Advisors, LLC	Private investment management firm	7.42	1,109	3,880

If investor horizons are a characteristic of investors, then they should be persistent. We examine whether this is the case. To examine the persistence of the portfolio turnover of investors, each calendar quarter, we sort investors into quartiles based on their portfolio turnover. Next, for each calendar quarter and each investor portfolio turnover quartile, we compute the mean portfolio turnover of investors for each of the next 20 event quarters. Finally, for each event quarter and each investor portfolio turnover quartile, we compute the mean investor portfolio turnover over all calendar quarters. Since we require 4 years of data to compute investor turnover, we use data on investor horizons between 1984 and 2009.

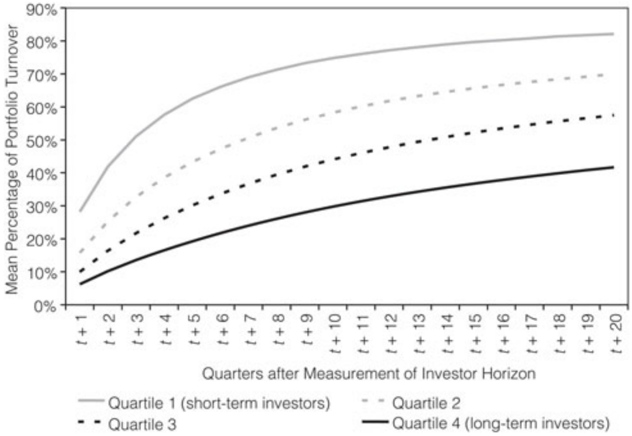
Figure 1 presents the results. Investor turnover increases in event time for all quartiles of initial turnover, but the ordering of quartiles persists for at least 20 quarters. Investors initially in the top quartile of turnover (the most short-term investors) have the highest turnover 20 quarters thereafter, and investors initially in the bottom quartile (the most long-term investors) have the lowest turnover

20 quarters thereafter. The persistence of investor turnover suggests that it is reasonable to assume that investors with longer investment horizons in the past maintain their longer investment horizons in the future. In other words, investor horizons do appear to be a characteristic of investors.

FIGURE 1

Future Investor Turnover as a Function of Past Investor Turnover

Figure 1 presents future turnover as a function of past turnover. The sample comprises 97,317 investor-quarters consisting of 3,333 unique investors between 1984 and 2009. Investor ownership lags corporate policies by 1 year. Each calendar quarter, investors are sorted into quartiles based on their portfolio turnover. Next, for each calendar quarter and each investor portfolio turnover quartile, the mean portfolio turnover of investors is computed for each of the next 20 event quarters. Finally, for each event quarter and each investor portfolio turnover quartile, the mean investor portfolio turnover is computed over all calendar quarters.



Next, we measure the investor horizons of firms. For each quarter and each firm, we compute separately the ownership of short-term investors and long-term investors. By construction, short-term investor ownership and long-term investor ownership together comprise total institutional ownership and therefore their sum lies between 0 and 1.

Figure 2 presents mean short-term investor ownership and mean long-term investor ownership each quarter during our sample period. Short-term investor ownership is steady during the first 20 years of our sample period at around 15%–25% and then it rises quickly to 35%–40% during the last 6 years of our sample period. By contrast, long-term investor ownership rises gradually during the first 20 years of our sample period from roughly 5% to a plateau of roughly 20%–25% during the last 6 years of our sample period. These results are consistent with the increase in institutional investor ownership documented by Gompers and Metrick (2001) between 1980 and 1996.

Since investor turnover (at the investor level) is persistent, short-term and long-term investor ownership (at the firm level) should also be persistent. To examine whether this is the case, each calendar quarter, we sort firms into quartiles based on their long-term investor ownership. Next, for each calendar quarter and each long-term investor ownership quartile, we compute the mean long-term investor ownership of firms for each of the next 20 event quarters. Finally, for each event quarter and each long-term investor ownership quartile, we compute the mean long-term investor ownership over all calendar quarters.

FIGURE 2

Mean Short-Term and Long-Term Investor Ownership between 1984 and 2009

Figure 2 presents mean short-term investor ownership and mean long-term investor ownership each quarter between 1984 and 2009. The sample comprises 88,986 firm-years consisting of 10,579 unique firms between 1985 and 2010. Investor ownership lags corporate policies by 1 year. Investors in roughly the bottom quartile of 3-year portfolio turnover are classified as "long-term investors," and all other investors are classified as "short-term investors."

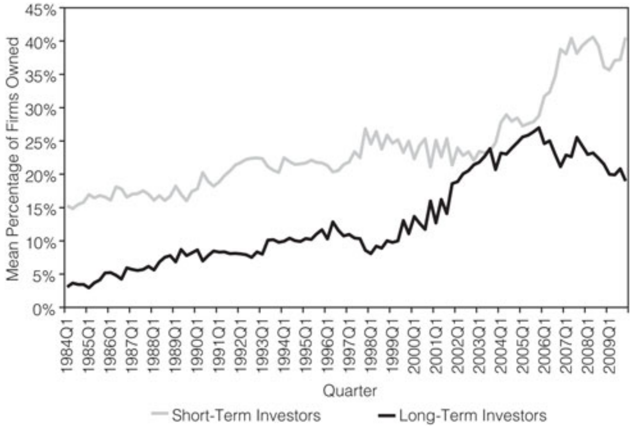
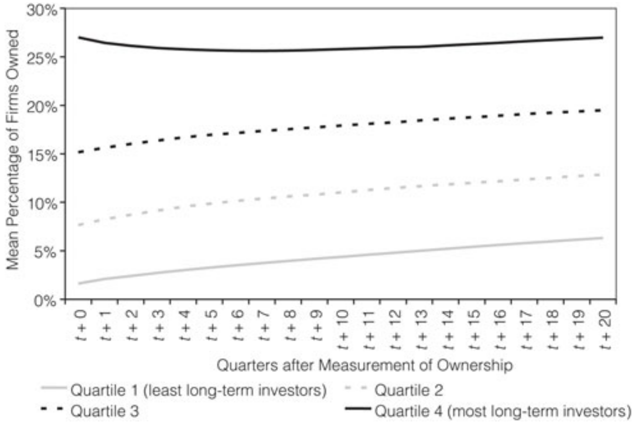


Figure 3 presents the results. Firms initially in the lowest three long-term investor ownership quartiles increase their long-term investor ownership slightly 20 quarters thereafter, which is consistent with the increase in mean long-term investor ownership during our sample period. Firms initially in the top quartile

FIGURE 3

Future Long-Term Investor Ownership as a Function of Present Long-Term Investor Ownership

Figure 3 presents future long-term investor ownership as a function of present long-term investor ownership. The sample comprises 88,986 firm-years consisting of 10,579 unique firms between 1985 and 2010. Investor ownership lags corporate policies by 1 year. Investors in roughly the bottom quartile of 3-year portfolio turnover are classified as "long-term investors," and all other investors are classified as "short-term investors." Each calendar quarter, firms are sorted into long-term investor ownership quartiles based on long-term investor ownership. Next, for each calendar quarter and each long-term investor ownership quartile, the mean long-term investor ownership of firms is computed for each of the next 20 event quarters. Finally, for each event quarter and each long-term investor ownership quartile, the mean long-term investor ownership is computed over all calendar quarters.



maintain their long-term investor ownership 20 quarters thereafter. Long-term investor ownership is clearly persistent. We repeat this analysis using short-term investor ownership instead of long-term investor ownership (not tabulated), and we find that short-term investor ownership is also persistent. It also appears that investor horizons are a characteristic of firms.

C. Measuring Misvaluation

To examine the effect of investor horizons on the corporate policies of mispriced firms, we must also measure mispricing. We use six misvaluation proxies from the literature. The first three capture the difference between the observed book-to-market ratio and the fundamental book-to-market ratio. They differ in their specification of the fundamental book-to-market ratio, which we now describe in detail for each of these proxies.

For our first proxy, we follow Pástor and Veronesi (2003): Each year, we regress book-to-market on age (defined as the negative of the reciprocal of 1 plus age where age is the number of years during which the firm is publicly traded and is measured in years), dividend payer status (defined as a dummy variable that equals 1 if the firm pays dividends, and 0 otherwise), leverage (defined as debt divided by total assets), size (defined as the natural logarithm of total assets), total return volatility (defined as the standard deviation of daily raw returns during the previous year), and return on equity. We use the residuals from these regressions as our first misvaluation proxy.

For our second proxy, we follow Rhodes-Kropf et al. (2005): Each year and for each industry, we regress book-to-market on size (defined as the natural logarithm of book value of equity), return on equity if positive (defined as the absolute value of return on equity times a dummy variable that equals 1 if return on equity is positive, and 0 otherwise), return on equity if negative (defined analogously to return on equity if positive), and leverage (defined as debt divided by total assets). We use the residuals from these regressions as our second misvaluation proxy.

For our third proxy, we follow Hoberg and Phillips (2010): We use the same specification as Pástor and Veronesi (2003), but we run regressions by year and industry like Rhodes-Kropf et al. (2005). We use the residuals from these regressions as our third misvaluation proxy.

These three residual market-to-book misvaluation proxies capture firm-specific misvaluation. However, by construction, they do not capture industry-wide or market-wide misvaluation, especially the Hoberg and Phillips (2010) residual book-to-market proxy, which specifically removes industry and time effects. As an alternative book-to-market proxy that captures not only relative but also absolute misvaluation, we use the raw book-to-market ratio. This, our fourth misvaluation proxy, provides a useful benchmark for the importance of absolute versus relative misvaluation. Of course, it also captures economic fundamentals, so the results should be interpreted with caution.

For our fifth proxy, we follow Baker et al. (2003) and Polk and Sapienza (2009) and use future excess returns. The intuition for this proxy is that firms that underperform today (i.e., earn negative abnormal returns) are undervalued, and when this undervaluation is corrected tomorrow, these firms outperform (i.e., earn positive abnormal returns). Therefore, higher future excess returns capture greater past undervaluation. We compute this proxy as raw returns minus the returns of the CRSP value-weighted index.[8]

Finally, for our sixth proxy, we use mutual fund flows. For this proxy, the intuition is that mutual funds that experience extreme fund inflows and outflows tend to increase and decrease, respectively, their existing holdings. Consequently, they exert price pressure that pushes prices away from fundamentals. Coval and Stafford (2007) show that such price pressure has a sudden and dramatic impact on stock prices when it occurs and that stock prices take, on average, 2 years to recover. Edmans et al. (2012) use this proxy to study acquisitions, and Khan et al. (2012) use it to study equity issuance. For our application, this proxy is advantageous because misvaluation caused by mutual fund flows is plausibly exogenous to both investor horizons and corporate policies. We use the same mutual fund outflows data as Edmans et al. (2012). Please see their paper for details.[9] Simply put, our proxy is the amount of a stock sold by mutual funds with extreme fund outflows divided by the amount of the stock traded by all investors. We compute yearly outflows as the sum of the corresponding four quarterly outflows. Since mutual fund outflows are highly skewed, we use the natural logarithm of mutual fund outflows. Data for mutual fund outflows are only available for half of our sample.

IV. Investor Horizons and Corporate Policies

A. Empirical Strategy

We now examine the effect of investor horizons on the corporate policies of mispriced firms. We hypothesize that for undervalued firms, longer investor horizons are positively related to investment and equity financing and negatively related to payouts. To test these predictions, we estimate the following regression specification:

$$\text{(1)} \quad \text{CPV}_{i,t} = \alpha_i + \beta_1 \text{VP}_{i,t-1} + \beta_2 \text{LTIO}_{i,t-1} + \beta_3 \left(\text{LTIO}_{i,t-1} \times \text{VP}_{i,t-1}\right) + \beta_4 \text{X}_{i,t-1} + \beta_5 \left(\text{X}_{i,t-1} \times \text{VP}_{i,t-1}\right) + \varepsilon_{i,t},$$

where $\text{CPV}_{i,t}$ is a corporate policy variable, $\text{VP}_{i,t-1}$ is a valuation proxy, $\text{LTIO}_{i,t-1}$ is long-term investor ownership, and $\text{X}_{i,t-1}$ are control variables discussed below. The α_i are firm fixed effects. All right-hand-side variables are lagged by 1 year in order to address the concern that corporate policies, mispricing, and investor horizons may be simultaneously determined in equilibrium. The exception is

[8] The results of the paper are similar if the benchmark that we use is not based on the market but rather on the industry, size and industry, or size, book-to-market, and momentum (not tabulated).

[9] By way of summary, they begin with mutual funds that experience outflows of 5% or more of total assets in a given quarter. They estimate the dollar amount of each stock sold by the fund based on the fund's position in the stock at the end of the previous quarter relative to the fund's total assets (thus, they do not use possibly endogenous actual sales but instead use plausibly exogenous predicted sales). Finally, they divide the estimated dollar amount of the stock sold by the fund by the dollar amount of trading volume in the stock during the current quarter.

future excess returns, which we measure during year $t + 1$. For all of our valuation proxies, higher values mean more undervaluation.

We define our corporate policy variables as follows. For investment, we use capital expenditures (Compustat variable CAPX); for equity financing, we use equity issuance (SSTK); and for payouts, we use dividends (DV) and share repurchases (PRSTKC). We divide all of our corporate policy variables by total assets (AT) and measure them as a percentage of total assets. We industry adjust our corporate policy variables using the mean corporate policies of other firms in the same industry (i.e., excluding the firm), where industry is defined using 2-digit Standard Industrial Classification codes.

Most of the existing literature on investor horizons (e.g., Bushee (1998), Gaspar et al. (2005)) typically regresses $CPV_{i,t}$ on $LTIO_{i,t-1}$, controlling for as many determinants of $CPV_{i,t}$ as possible. One possible concern with this approach is that $LTIO_{i,t-1}$ may be correlated with unobserved heterogeneity that affects $CPV_{i,t}$. In our specification, the effect of $LTIO_{i,t-1}$ on corporate policies is not of interest to us. Instead, we focus on the interaction term, $LTIO_{i,t-1} \times VP_{i,t-1}$, which captures the incremental effect of long-term investor ownership on corporate policies conditional upon mispricing. This is the only coefficient for which we have predictions.

Focusing on the interaction term, however, does not solve all endogeneity concerns, so we include control variables, $X_{i,t-1}$, and their interactions with our valuation proxies, $X_{i,t-1} \times VP_{i,t-1}$, as well as firm fixed effects. We control for the standard determinants of corporate policies in the literature, including institutional ownership,[10] size, financial constraints, and risk. Moreover, the effect of these factors may be different when the firm is mispriced, so we also control for the interaction between the aforementioned determinants of corporate policies and our valuation proxies. For size, we use quantiles of total assets. For financial constraints, we use the Kaplan-Zingales index excluding the market-to-book ratio (see Baker et al. (2003)). For risk, we use the standard deviation of daily returns measured during year $t - 1$. Finally, to control for unobserved firm heterogeneity, we control for firm fixed effects.[11] To facilitate interpretation of our results, we standardize all independent variables. Accordingly, the coefficient estimate on any independent variable is the effect of a 1-standard-deviation increase in that independent variable on the dependent variable.

B. Investment

First, we test Hypothesis 1 that for undervalued firms, capital expenditures increase with long-term investor ownership. Table 3 presents the results. The

[10]By construction, long-term investor ownership is correlated with (total) institutional ownership, and institutional ownership is known to affect corporate policies, so by controlling for institutional ownership, we capture the effect of investor horizons on corporate policies that is incremental to the effect of institutional ownership.

[11]Both short-term and long-term investor ownership trend upward during our sample period. For this to affect our results, there must be a common trend to our measure of investor horizons, our valuation proxies, and our corporate policy variables. This is not the case. However, we redo our results in Tables 3–5 using long-term investor ownership and institutional ownership standardized each year to remove their trends, and we find that our results are similar (not tabulated).

TABLE 3

Investor Horizons and Investment

Table 3 presents the results of firm fixed effects regressions of capital expenditures on lagged valuation proxies, lagged long-term institutional ownership, and lagged control variables. The sample comprises 88,986 firm-years consisting of 10,579 unique firms between 1985 and 2010. The dependent variable is industry-adjusted capital expenditures divided by total assets and is measured as a percentage of total assets. Each column uses a different valuation proxy. PV residual B/M, RRV residual B/M, and HP residual B/M are the book-to-market residuals estimated from the valuation models of Pástor and Veronesi (2003), Rhodes-Kropf et al. (2005), and Hoberg and Phillips (2010), respectively. Future excess returns is raw returns minus market index returns. Mutual fund outflows is the amount of a stock sold by mutual funds with extreme fund outflows divided by the amount of the stock traded by all investors. Investors in roughly the bottom quartile of 3-year portfolio turnover are classified as "long-term investors," and all other investors are classified as "short-term investors." Size is quantiles of total assets. Financial constraints is the Kaplan-Zingales index excluding the market-to-book ratio. Risk is the standard deviation of daily returns. All independent variables are standardized. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. Below each coefficient estimate is its corresponding *t*-statistic in parentheses. Standard errors are clustered by firm.

	Valuation Proxy					
	Residual B/M					
Variables	PV	RRV	HP	Raw B/M	Future Excess Returns	Mutual Fund Outflows
Valuation proxy (VP)	−1.271***	−0.932***	−1.069***	−1.384***	−0.543***	−0.142***
	(−24.54)	(−20.02)	(−22.02)	(−25.49)	(−19.12)	(−3.08)
Long-term investor ownership (LTIO)	−0.438***	−0.473***	−0.454***	−0.446***	−0.651***	−0.640***
	(−7.49)	(−7.70)	(−7.43)	(−7.71)	(−10.63)	(−8.55)
LTIO × VP	0.292***	0.292***	0.309***	0.390***	0.246***	0.266***
	(5.44)	(5.47)	(5.72)	(7.17)	(5.25)	(4.48)
Institutional ownership (IO)	0.551***	0.700***	0.643***	0.464***	0.893***	0.996***
	(6.51)	(7.82)	(7.21)	(5.50)	(10.05)	(8.27)
IO × VP	−0.420***	−0.286***	−0.352***	−0.462***	−0.071	−0.310***
	(−6.60)	(−4.49)	(−5.40)	(−7.03)	(−1.41)	(−3.96)
Size	−3.013***	−3.025***	−3.002***	−2.876***	−3.405***	−3.788***
	(−21.04)	(−20.15)	(−20.05)	(−20.23)	(−23.10)	(−17.40)
Size × VP	0.136***	0.053	0.102*	0.099*	−0.025	0.149**
	(2.60)	(1.08)	(1.95)	(1.88)	(−0.67)	(2.49)
Financial constraints (FC)	−1.049***	−1.115***	−1.037***	−0.994***	−0.877***	−1.081***
	(−16.96)	(−18.35)	(−16.72)	(−16.53)	(−16.02)	(−13.52)
FC × VP	0.113**	0.081**	0.069	0.073	0.042	0.012
	(2.47)	(1.97)	(1.57)	(1.58)	(1.57)	(0.25)
Risk	−0.817***	−0.691***	−0.816***	−0.554***	−0.738***	−0.750***
	(−17.35)	(−13.86)	(−16.68)	(−11.30)	(−15.01)	(−10.42)
Risk × VP	0.232***	0.158***	0.211***	0.246***	0.154***	−0.024
	(8.35)	(5.45)	(6.98)	(8.75)	(5.69)	(−0.48)
Observations	84,309	76,196	76,196	84,312	82,920	45,343
Adjusted R^2	0.417	0.418	0.421	0.419	0.409	0.470

coefficient estimate on the valuation proxy is negative and statistically significant in all six regressions. Consistent with Polk and Sapienza (2009), the typical firm invests less when it is undervalued. Turning to our control variables, we find that capital expenditures are generally increasing for firms with less institutional ownership, bigger firms, and more risky firms when they are undervalued.

The coefficient on $\text{LTIO}_{i,t-1} \times \text{VP}_{i,t-1}$ is the focus of our analysis. For all six valuation proxies, its estimate is statistically significant and supports Hypothesis 1: Firms with longer investor horizons increase investment when they are undervalued. The economic magnitudes of our estimates are also significant. A 1-standard-deviation increase in both long-term investor ownership and our valuation proxies is associated with an increase in capital expenditures of roughly 0.3% of total assets (averaged across the six coefficient estimates). Since total assets are $1.7 billion for the average firm in our sample, this increase in investment is roughly $5 million.

C. Equity Financing

Second, we test Hypothesis 2 that for undervalued firms, equity issuance increases with long-term investor ownership. Table 4 presents the results. Consistent with the market timing literature (e.g., Loughran and Ritter (1995)), the coefficient estimate on $VP_{i,t-1}$ is negative and statistically significant in all six regressions. The typical firm issues less equity when it is undervalued: A 1-standard-deviation increase in our valuation proxies is associated with a decrease in equity issuance of 0.6%–2.7% of total assets (1.8% on average).

TABLE 4

Investor Horizons and Equity Financing

Table 4 presents the results of firm fixed effects regressions of equity issuance on lagged valuation proxies, lagged long-term institutional ownership, and lagged control variables. The sample comprises 88,986 firm-years consisting of 10,579 unique firms between 1985 and 2010. The dependent variable is industry-adjusted equity issuance divided by total assets and is measured as a percentage of total assets. Each column uses a different valuation proxy. PV residual B/M, RRV residual B/M, and HP residual B/M are the book-to-market residuals estimated from the valuation models of Pástor and Veronesi (2003), Rhodes-Kropf et al. (2005), and Hoberg and Phillips (2010), respectively. Future excess returns is raw returns minus market index returns. Mutual fund outflows is the amount of a stock sold by mutual funds with extreme fund outflows divided by the amount of the stock traded by all investors. Investors in roughly the bottom quartile of 3-year portfolio turnover are classified as "long-term investors," and all other investors are classified as "short-term investors." Size is quantiles of total assets. Financial constraints is the Kaplan-Zingales index excluding the market-to-book ratio. Risk is the standard deviation of daily returns. All independent variables are standardized. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. Below each coefficient estimate is its corresponding *t*-statistic in parentheses. Standard errors are clustered by firm.

	Valuation Proxy					
	Residual B/M					
Variables	PV	RRV	HP	Raw B/M	Future Excess Returns	Mutual Fund Outflows
Valuation proxy (VP)	−2.423***	−1.846***	−2.112***	−2.653***	−1.493***	−0.546***
	(−26.21)	(−21.63)	(−24.52)	(−27.51)	(−21.51)	(−4.51)
Long-term investor ownership (LTIO)	−0.408***	−0.609***	−0.561***	−0.408***	−0.787***	−0.741***
	(−3.96)	(−5.35)	(−4.89)	(−4.19)	(−7.24)	(−5.78)
LTIO × VP	0.494***	0.355***	0.344***	0.509***	0.480***	0.320**
	(5.10)	(3.44)	(3.29)	(5.41)	(3.97)	(2.40)
Institutional ownership (IO)	−0.396**	−0.188	−0.304	−0.495***	−0.015	0.450*
	(−2.33)	(−0.97)	(−1.59)	(−2.96)	(−0.08)	(1.92)
IO × VP	−1.113***	−0.929***	−0.961***	−1.083***	−0.373***	−0.489***
	(−8.14)	(−6.58)	(−6.73)	(−8.13)	(−2.64)	(−2.63)
Size	−10.622***	−11.004***	−10.970***	−10.435***	−11.952***	−12.854***
	(−28.75)	(−27.42)	(−27.35)	(−28.57)	(−29.82)	(−20.99)
Size × VP	1.792***	1.192***	1.407***	1.806***	0.837***	0.974***
	(15.70)	(10.76)	(12.40)	(16.05)	(8.05)	(6.05)
Financial constraints (FC)	1.481***	1.208***	1.590***	1.605***	1.316***	1.282***
	(10.40)	(7.59)	(10.25)	(11.13)	(8.95)	(6.80)
FC × VP	0.910***	0.689***	1.004***	0.941***	0.241***	−0.109
	(7.58)	(6.29)	(8.56)	(7.36)	(2.64)	(−0.86)
Risk	−0.677***	−0.192	−0.635***	0.125	−0.236**	−0.286
	(−6.28)	(−1.52)	(−5.43)	(1.03)	(−2.08)	(−1.55)
Risk × VP	0.208***	−0.017	0.057	0.114*	0.126	0.052
	(3.43)	(−0.27)	(0.88)	(1.87)	(1.56)	(0.32)
Observations	84,309	76,196	76,196	84,312	82,920	45,343
Adjusted R^2	0.286	0.282	0.285	0.288	0.295	0.308

For all six valuation proxies, $LTIO_{i,t-1} \times VP_{i,t-1}$, which is the focus of our analysis, is positive and statistically significant. This supports Hypothesis 2: Firms with longer investor horizons increase equity financing when they are undervalued. Once again, the economic magnitudes of our estimates are also significant. A 1-standard-deviation increase in both long-term investor ownership and our valuation proxies is associated with an increase in equity issuance of roughly 0.4% of total assets (averaged across the six coefficient estimates). Since total assets are $1.7 billion for the average firm in our sample, this increase in equity issuance is $7 million.

This last result, together with our results on investment, is consistent with the catering view of market timing according to which overvalued firms issue equity and invest the proceeds in order to please short-term investors who overvalue the firm's investment opportunities. This is similar to Shleifer and Vishny's (2003) argument that firms exploit their overvalued stock to acquire undervalued targets. Under the alternative capital structure arbitrage view, overvalued firms also issue equity but they retain rather than invest the proceeds because their objective is to transfer value to long-term investors. We find that if we use the change in cash holdings as the dependent variable in our regressions, the coefficient on $\text{LTIO}_{i,t-1} \times \text{VP}_{i,t-1}$ is not statistically significant (not tabulated). This is consistent with McLean's (2011) finding that firms that issue equity do not retain more of the proceeds in cash if they are overvalued at the time of the issuance.

D. Payouts to Shareholders

Finally, we test Hypothesis 3 that for undervalued firms, payouts to shareholders decrease with long-term investor ownership. Table 5 presents the results with dividends in Panel A and share repurchases in Panel B. Both panels support Hypothesis 3.

Panel A of Table 5 shows that, for dividends as the corporate policy variable, the coefficient estimate on $\text{LTIO}_{i,t-1} \times \text{VP}_{i,t-1}$ is negative and statistically significant for four valuation proxies (those based on the book-to-market ratio). The economic magnitudes of our estimates are significant: The coefficient estimate on $\text{LTIO}_{i,t-1} \times \text{VP}_{i,t-1}$ (roughly −0.05% of total assets averaged across the four coefficient estimates that are statistically significant) is very roughly half of the magnitude of the coefficient estimate on $\text{LTIO}_{i,t-1}$ (roughly +0.12%).

Baker and Wurgler (2004) argue that firms pay fewer dividends when firms that pay dividends are undervalued by investors. Our results, like theirs, are consistent with the catering view of market timing: When a firm is undervalued and owned predominantly by short-term investors, its managers cater to these investors by paying more dividends because these investors value a dollar in their pocket more than the same dollar invested in the firm.

Turning to share repurchases, Panel B of Table 5 shows that the coefficient estimate on $\text{LTIO}_{i,t-1} \times \text{VP}_{i,t-1}$ is negative and statistically significant for five of our six valuation proxies. The economic magnitudes of our estimates are significant: The coefficient estimate on $\text{LTIO}_{i,t-1} \times \text{VP}_{i,t-1}$ is roughly −0.1% of total assets (averaged across the five coefficient estimates that are statistically significant). This magnitude for share repurchases is roughly double the corresponding magnitude for dividends.

The coefficient estimate on $\text{VP}_{i,t-1}$ is negative for share repurchases for all valuation proxies except for future excess returns. This result seemingly contrasts with the existing evidence that share repurchase announcements are followed by positive long-run abnormal returns (e.g., Peyer and Vermaelen (2009)). However, unlike the literature on share repurchases, we use the actual amount of share repurchases, not the amount announced, and we control for various firm characteristics and include firm fixed effects. Moreover, valuation proxies based on the book-to-market ratio and mutual fund flows are imperfectly correlated with long-run abnormal returns. Nevertheless, for future excess returns, the coefficient estimate on the valuation proxy is positive, which is in fact consistent with the existing evidence.

These results for share repurchases, like our results for dividends, are consistent with the catering view of market timing. The literature provides evidence that firms that are undervalued repurchase more of their shares. According to the catering view, firms do so if they are owned predominantly by short-term investors

TABLE 5

Investor Horizons and Payouts to Shareholders

Table 5 presents the results of firm fixed effects regressions of payouts on lagged valuation proxies, lagged long-term institutional ownership, and lagged control variables. The sample comprises 88,986 firm-years consisting of 10,579 unique firms between 1985 and 2010. The difference between the two panels is that the dependent variable is industry-adjusted dividends divided by total assets and measured as a percentage of total assets in Panel A and industry-adjusted share repurchases divided by total assets and measured as a percentage of total assets in Panel B. Each column uses a different valuation proxy. PV residual B/M, RRV residual B/M, and HP residual B/M are the book-to-market residuals estimated from the valuation models of Pástor and Veronesi (2003), Rhodes-Kropf et al. (2005), and Hoberg and Phillips (2010), respectively. Future excess returns is raw returns minus market index returns. Mutual fund outflows is the amount of a stock sold by mutual funds with extreme fund outflows divided by the amount of the stock traded by all investors. Investors in roughly the bottom quartile of 3-year portfolio turnover are classified as "long-term investors," and all other investors are classified as "short-term investors." Size is quantiles of total assets. Financial constraints is the Kaplan-Zingales index excluding the market-to-book ratio. Risk is the standard deviation of daily returns. All independent variables are standardized. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. Below each coefficient estimate is its corresponding *t*-statistic in parentheses. Standard errors are clustered by firm.

	Valuation Proxy					
	Residual B/M				Future	Mutual
				Raw	Excess	Fund
Variables	PV	RRV	HP	B/M	Returns	Outflows
Panel A. Investor Horizons and Dividends						
Valuation proxy (VP)	−0.094***	−0.105***	−0.088***	−0.095***	−0.001	−0.027***
	(−8.31)	(−11.22)	(−8.80)	(−8.44)	(−0.16)	(−3.24)
Long-term investor ownership (LTIO)	0.126***	0.133***	0.132***	0.114***	0.099***	0.110***
	(9.43)	(9.60)	(9.48)	(8.78)	(7.13)	(6.57)
LTIO × VP	−0.053***	−0.032***	−0.054***	−0.054***	−0.011	0.006
	(−4.95)	(−2.97)	(−4.74)	(−5.09)	(−1.30)	(0.46)
Institutional ownership (IO)	−0.080***	−0.092***	−0.090***	−0.077***	−0.034*	−0.065***
	(−4.53)	(−5.05)	(−4.92)	(−4.40)	(−1.95)	(−2.75)
IO × VP	0.023*	0.001	0.028**	0.042***	0.004	−0.027*
	(1.85)	(0.10)	(2.13)	(3.45)	(0.47)	(−1.81)
Size	0.130***	0.152***	0.149***	0.128***	0.087***	0.130***
	(4.33)	(4.87)	(4.78)	(4.25)	(2.88)	(2.68)
Size × VP	−0.002	−0.013	−0.012	−0.037***	−0.001	0.017
	(−0.19)	(−1.41)	(−1.17)	(−3.50)	(−0.21)	(1.25)
Financial constraints (FC)	−0.574***	−0.563***	−0.560***	−0.547***	−0.459***	−0.546***
	(−24.38)	(−22.63)	(−22.48)	(−24.30)	(−22.01)	(−18.20)
FC × VP	−0.000	0.058***	0.017	0.058***	0.009	−0.072***
	(−0.02)	(4.98)	(1.34)	(4.09)	(1.44)	(−5.71)
Risk	0.051***	0.068***	0.057***	0.059***	0.046***	0.068***
	(6.13)	(7.65)	(6.64)	(6.66)	(5.16)	(4.36)
Risk × VP	0.016***	0.004	0.007	0.015***	0.012***	0.004
	(3.10)	(0.75)	(1.23)	(3.05)	(2.75)	(0.40)
Observations	84,309	76,196	76,196	84,312	82,920	45,343
Adjusted R^2	0.638	0.645	0.645	0.638	0.633	0.668

(continued on next page)

TABLE 5 (continued)

Investor Horizons and Payouts to Shareholders

	Valuation Proxy					
	Residual B/M					
Variables	PV	RRV	HP	Raw B/M	Future Excess Returns	Mutual Fund Outflows
Panel B. Investor Horizons and Share Repurchases						
Valuation proxy (VP)	−0.206***	−0.132***	−0.178***	−0.110***	0.026	−0.036
	(−8.08)	(−5.59)	(−7.22)	(−4.24)	(1.56)	(−1.44)
Long-term investor ownership (LTIO)	0.043	0.049	0.064	0.006	0.006	0.080
	(1.03)	(1.10)	(1.43)	(0.15)	(0.13)	(1.41)
LTIO × VP	−0.106***	−0.107***	−0.134***	−0.100***	0.021	−0.074*
	(−3.33)	(−3.56)	(−4.09)	(−3.05)	(0.73)	(−1.80)
Institutional ownership (IO)	−0.254***	−0.249***	−0.271***	−0.239***	−0.208***	−0.279***
	(−5.14)	(−4.62)	(−5.05)	(−4.91)	(−4.08)	(−3.56)
IO × VP	−0.040	0.035	0.004	0.020	−0.010	−0.030
	(−1.16)	(1.02)	(0.12)	(0.59)	(−0.33)	(−0.61)
Size	0.743***	0.752***	0.753***	0.734***	0.690***	1.010***
	(10.36)	(9.81)	(9.85)	(10.23)	(9.55)	(7.83)
Size × VP	0.021	−0.022	−0.026	−0.146***	−0.022	0.164***
	(0.83)	(−0.87)	(−0.98)	(−5.83)	(−1.08)	(4.49)
Financial constraints (FC)	−0.591***	−0.590***	−0.588***	−0.566***	−0.495***	−0.665***
	(−15.73)	(−15.43)	(−15.27)	(−15.76)	(−14.13)	(−11.71)
FC × VP	−0.047*	−0.024	−0.027	−0.001	0.013	−0.096***
	(−1.76)	(−1.02)	(−1.04)	(−0.04)	(0.86)	(−3.23)
Risk	0.152***	0.174***	0.164***	0.159***	0.156***	0.161***
	(6.65)	(6.97)	(6.81)	(6.41)	(6.65)	(3.44)
Risk × VP	0.033**	0.024*	0.017	0.009	0.020	0.040
	(2.52)	(1.93)	(1.23)	(0.68)	(1.50)	(1.36)
Observations	84,309	76,196	76,196	84,312	82,920	45,343
Adjusted R^2	0.232	0.227	0.228	0.232	0.229	0.274

because these investors prefer a dollar in hand to one invested in the firm. By contrast, the alternative capital structure arbitrage view holds that undervalued firms owned predominantly by long-term investors repurchase more of their shares in order to transfer value to these investors. Our result that undervalued firms with longer investor horizons decrease share repurchases supports the catering view over the capital structure arbitrage view.

V. Robustness Tests

Taken together, our results in Tables 3–5 show that long-term investors attenuate the effect of mispricing on corporate policies. In this section, we perform several robustness tests of our main results.

A. Self-Selection

One alternative interpretation of our empirical results is that long-term investors select firms the corporate policies of which are less affected by undervaluation. This interpretation is consistent with our results for investment and equity financing but not with our results for payouts to shareholders. If firms selected by long-term investors were less affected by undervaluation, they would not decrease payouts to shareholders, but they would increase investment and equity financing.

Such self-selection can happen if long-term investors are more risk averse. For instance, the trust departments of banks and pension funds are constrained by “prudent man” rules to invest in less risky firms (Del Guercio (1996)).

To test this self-selection interpretation, we use long-term indexers as long-term investors that are exogenous to corporate policies. As we have already mentioned, investors who index are long-term investors because the composition of the index changes infrequently. Moreover, since they must replicate the index, they cannot choose the firms in which they invest. If our results hold for both long-term nonindexers and indexers, then it cannot be that long-term investors choose firms with particular corporate policies when they are undervalued.

We classify investors as indexers based on Cremers and Petajisto’s (2009) active share measure.[12] Active share is the distance between the weights on each firm in the investor’s portfolio and the weights in the index. For the index, we use the CRSP value-weighted index.[13] We classify investors with an active share of up to 0.25 as “indexers” (cf. Harford, Jenter, and Li (2011), who use a cutoff of 0.30), and we classify all other investors as “nonindexers.” Approximately ¼ of investors have an active share of 0.25 or less, and this proportion is stable over time. We aggregate the ownership of long-term nonindexers and indexers as usual. We examine the evolution of the ownership of our indexers over time, and we find that it increases over time consistent with Cremers and Petajisto (2009) (not tabulated). We split long-term investor ownership into long-term nonindexer ownership and long-term indexer ownership, and we redo Tables 3–5 using these two new variables instead of the old one.

Table 6 presents the results. For expositional simplicity, we only tabulate the regression results for the two interactions between our valuation proxies and long-term investor ownership split into the ownership of nonindexers and indexers. For capital expenditures and equity issuance, the effects are economically and statistically more significant for nonindexers than indexers (strongly so); for dividends and share repurchases, the reverse is true (but only weakly so). However, for all corporate policies, the effects of nonindexers and indexers are generally similar to each other, and the coefficient estimates have the correct sign except for share repurchases for nonindexers, which are generally not economically or statistically significant. Overall, long-term investor ownership, whether that of possibly endogenous nonindexers or plausibly exogenous indexers, is associated with more investment, more equity financing, and less payouts to shareholders when firms are undervalued. This is inconsistent with the self-selection interpretation of our results.

[12]We classify investors as indexers using cross-sectional data. Another approach is to classify investors as indexers using time-series data (i.e., based on how well the returns of our investors are explained by the returns of an index). Since we do not have returns data for our investors, we cannot use this approach.

[13]Unlike Cremers and Petajisto (2009), who study mutual funds, we do not choose the best of 19 indexes but simply use the most general equity market index possible (i.e., the CRSP value-weighted index). We do so because unlike the holdings of mutual funds, the holdings of institutional investors (which for a single institutional investor like Lehman Brothers can include the combined holdings of mutual funds, hedge funds, holdings in trust for clients, and proprietary trading positions) are best benchmarked against a diversified portfolio of stocks.

TABLE 6

Corporate Policy Results for Long-Term Investors Split into Nonindexers and Indexers

Table 6 presents the results of firm fixed effects regressions of corporate policy variables on lagged valuation proxies, lagged long-term institutional ownership, and lagged control variables. The regression specifications are the same as in Tables 3–5 except that long-term investor ownership is split into long-term nonindexer ownership and long-term indexer ownership. The sample comprises 88,986 firm-years consisting of 10,579 unique firms between 1985 and 2010. The dependent variable is a different industry-adjusted corporate policy variable in each panel and is measured as a percentage of total assets. Each column uses a different valuation proxy. PV residual B/M, RRV residual B/M, and HP residual B/M are the book-to-market residuals estimated from the valuation models of Pástor and Veronesi (2003), Rhodes-Kropf et al. (2005), and Hoberg and Phillips (2010), respectively. Future excess returns is raw returns minus market index returns. Mutual fund outflows is the amount of a stock sold by mutual funds with extreme fund outflows divided by the amount of the stock traded by all investors. Investors in roughly the bottom quartile of 3-year portfolio turnover are classified as “long-term investors,” and all other investors are classified as “short-term investors.” Investors with an active share of up to 0.25 are classified as “indexers.” Size is quantiles of total assets. Financial constraints is the Kaplan-Zingales index excluding the market-to-book ratio. Risk is the standard deviation of daily returns. Only selected results are tabulated. All independent variables are standardized. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. Below each coefficient estimate is its corresponding *t*-statistic in parentheses. Standard errors are clustered by firm.

	Valuation Proxy					
	Residual B/M					
Variables	PV	RRV	HP	Raw B/M	Future Excess Returns	Mutual Fund Outflows
Panel A. Dependent Variable: Capital Expenditures						
Long-term nonindexer ownership	0.196***	0.177***	0.206***	0.263***	0.167***	0.164***
× Valuation proxy	(4.73)	(4.28)	(4.83)	(6.33)	(4.35)	(3.60)
Long-term indexer ownership	0.069	0.165***	0.113**	0.117**	0.114**	0.192***
× Valuation proxy	(1.28)	(3.04)	(2.08)	(2.19)	(2.53)	(3.08)
All other variables?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	84,309	76,196	76,196	84,312	82,920	45,343
Adjusted R^2	0.418	0.419	0.421	0.419	0.410	0.470
Panel B. Dependent Variable: Equity Issuance						
Long-term nonindexer ownership	0.301***	0.180**	0.212***	0.335***	0.346***	0.165
× Valuation proxy	(4.00)	(2.28)	(2.61)	(4.57)	(3.65)	(1.60)
Long-term indexer ownership	0.230**	0.246**	0.137	0.148*	0.174	0.298*
× Valuation proxy	(2.41)	(2.38)	(1.34)	(1.68)	(1.49)	(1.93)
All other variables?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	84,309	76,196	76,196	84,312	82,920	45,343
Adjusted R^2	0.287	0.282	0.285	0.288	0.295	0.309
Panel C. Dependent Variable: Dividends						
Long-term nonindexer ownership	−0.020**	−0.011	−0.026***	−0.021***	−0.001	0.014
× Valuation proxy	(−2.44)	(−1.29)	(−3.02)	(−2.65)	(−0.11)	(1.44)
Long-term indexer ownership	−0.072***	−0.042***	−0.054***	−0.068***	−0.018**	−0.022
× Valuation proxy	(−5.97)	(−3.84)	(−4.58)	(−5.71)	(−2.16)	(−1.60)
All other variables?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	84,309	76,196	76,196	84,312	82,920	45,343
Adjusted R^2	0.638	0.646	0.645	0.638	0.633	0.668
Panel D. Dependent Variable: Share Repurchases						
Long-term nonindexer ownership	0.003	−0.028	−0.024	0.023	0.039	−0.053*
× Valuation proxy	(0.12)	(−1.23)	(−1.00)	(0.96)	(1.63)	(−1.68)
Long-term indexer ownership	−0.213***	−0.137***	−0.199***	−0.241***	−0.044	−0.022
× Valuation proxy	(−6.59)	(−4.34)	(−5.77)	(−7.04)	(−1.41)	(−0.44)
All other variables?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	84,309	76,196	76,196	84,312	82,920	45,343
Adjusted R^2	0.234	0.229	0.230	0.234	0.230	0.275

B. Corporate Governance

Another alternative interpretation of our empirical results is that longer investor horizons are a proxy for better corporate governance. For example, Gaspar et al. (2005) and Chen et al. (2007) argue that investors with longer horizons monitor managers more. Therefore, our results may be driven not by the horizons of investors but by their monitoring. We examine this alternative interpretation by controlling for corporate governance. We do not control for corporate governance in Tables 3–5 because data on corporate governance proxies are only available for roughly ⅕ of our sample.

To control for corporate governance, we use the entrenchment index from Bebchuk, Cohen, and Ferrell (2009). This proxy for managerial entrenchment is a count of the number of six antitakeover provisions that a firm has in place (thus, a higher value of the entrenchment index means worse corporate governance). It is well-known that greater managerial entrenchment is associated with lower firm valuation and higher abnormal returns.[14] We redo Tables 3–5, but we also control for the entrenchment index as well as the interaction between the entrenchment index and our valuation proxies.

Table 7 presents the results. As before, for expositional simplicity, we only tabulate the regression results for the interaction between our valuation proxies and long-term ownership as well as the interaction between our valuation proxies and the entrenchment index. Since data on the entrenchment index are not available for all firms,[15] the sample size in Table 7 is roughly ⅕ of the sample size

TABLE 7

Corporate Policy Results Accounting for Corporate Governance

Table 7 presents the results of firm fixed effects regressions of corporate policy variables on valuation lagged proxies, lagged long-term institutional ownership, and lagged control variables. The regression specifications are the same as in Tables 3–5 except that the entrenchment index and the interaction between the entrenchment index and valuation proxies are added. The sample comprises 17,423 firm-years consisting of 2,235 unique firms between 1985 and 2010. The dependent variable is a different industry-adjusted corporate policy variable in each panel and is measured as a percentage of total assets. Each column uses a different valuation proxy. PV residual B/M, RRV residual B/M, and HP residual B/M are the book-to-market residuals estimated from the valuation models of Pástor and Veronesi (2003), Rhodes-Kropf et al. (2005), and Hoberg and Phillips (2010), respectively. Future excess returns is raw returns minus market index returns. Mutual fund outflows is the amount of a stock sold by mutual funds with extreme fund outflows divided by the amount of the stock traded by all investors. Investors in roughly the bottom quartile of 3-year portfolio turnover are classified as "long-term investors," and all other investors are classified as "short-term investors." The entrenchment index is from Bebchuk et al. (2009). Size is quantiles of total assets. Financial constraints is the Kaplan-Zingales index excluding the market-to-book ratio. Risk is the standard deviation of daily returns. All independent variables are standardized. Only selected results are tabulated. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. Below each coefficient estimate is its corresponding *t*-statistic in parentheses. Standard errors are clustered by firm.

	Valuation Proxy					
	Residual B/M				Future	Mutual
				Raw	Excess	Fund
Variables	PV	RRV	HP	B/M	Returns	Outflows
Panel A. Dependent Variable: Capital Expenditures						
Long-term investor ownership	0.352***	0.278***	0.366***	0.404***	0.162**	0.282***
× Valuation proxy	(3.38)	(2.59)	(3.51)	(3.83)	(2.05)	(3.05)
Entrenchment index	0.044	0.077	0.140	0.040	0.043	0.043
× Valuation proxy	(0.47)	(0.97)	(1.49)	(0.45)	(0.76)	(0.57)
All other variables?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	16,781	14,864	14,864	16,782	17,117	13,976
Adjusted R^2	0.510	0.522	0.528	0.508	0.497	0.513

(continued on next page)

[14]We also use the governance index from Gompers, Ishii, and Metrick (2003), and we find that our results are similar (not tabulated).

[15]Data for the entrenchment index are available roughly for Standard & Poor's (S&P) 1500 firms from 1990 to 2007. However, they are no longer being collected following the acquisition of IRRC first by Institutional Shareholder Services and then by RiskMetrics.

TABLE 7 (continued)

Corporate Policy Results Accounting for Corporate Governance

	Valuation Proxy					
	Residual B/M					
Variables	PV	RRV	HP	Raw B/M	Future Excess Returns	Mutual Fund Outflows
Panel B. Dependent Variable: Equity Issuance						
Long-term investor ownership × Valuation proxy	0.256** (2.00)	0.287** (2.24)	0.250** (2.06)	0.167 (1.38)	0.142 (1.00)	−0.116 (−0.93)
Entrenchment index × Valuation proxy	0.110 (0.96)	0.203* (1.79)	0.087 (0.73)	0.160 (1.46)	0.006 (0.06)	−0.072 (−0.80)
All other variables?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	16,781	14,864	14,864	16,782	17,117	13,976
Adjusted R^2	0.320	0.328	0.330	0.316	0.332	0.293
Panel C. Dependent Variable: Dividends						
Long-term investor ownership × Valuation proxy	−0.075*** (−3.42)	−0.040* (−1.93)	−0.082*** (−3.72)	−0.071*** (−3.17)	0.004 (0.22)	−0.006 (−0.28)
Entrenchment index × Valuation proxy	−0.007 (−0.33)	−0.007 (−0.35)	−0.010 (−0.51)	−0.006 (−0.27)	0.010 (0.80)	−0.005 (−0.27)
All other variables?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	16,781	14,864	14,864	16,782	17,117	13,976
Adjusted R^2	0.726	0.738	0.739	0.726	0.716	0.725
Panel D. Dependent Variable: Share Repurchases						
Long-term investor ownership × Valuation proxy	−0.105 (−1.39)	−0.043 (−0.61)	−0.127 (−1.63)	−0.082 (−1.05)	−0.017 (−0.22)	−0.218** (−2.44)
Entrenchment index × Valuation proxy	0.011 (0.20)	0.007 (0.12)	−0.026 (−0.38)	−0.008 (−0.15)	−0.018 (−0.37)	−0.001 (−0.01)
All other variables?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	16,781	14,864	14,864	16,782	17,117	13,976
Adjusted R^2	0.338	0.331	0.332	0.339	0.337	0.358

in Tables 3–5. Our results for long-term investor ownership are similar with and without controlling for the entrenchment index except that they are estimated less precisely because of the smaller sample size. The effect of the interaction between misvaluation and long-term investor ownership remains statistically significant in all six capital expenditures regressions, three equity issuance regressions, four dividends regressions, but only one share repurchases regression. The coefficient estimates for the interaction between our valuation proxies and the entrenchment index are not statistically significant (with a single exception). In summary, our results suggest that investor horizons matter for the corporate policies of undervalued firms even after accounting for corporate governance.

C. Blockholdings

A third alternative interpretation of our empirical results is that our long-term investors are typically blockholders. Since their large ownership stakes are costly to trade, blockholders tend to be long-term investors by necessity. Therefore, our results may be driven not by the horizons of investors but by their concentration. This distinction matters because the literature on corporate control finds that concentrated investors (not diffuse investors) influence managers (e.g., Holderness (2003)). Moreover, recent research suggests that different blockholders prefer different corporate policies and their preferences affect corporate behavior (e.g., Cronqvist and Fahlenbrach (2009), Becker, Cronqvist, and Fahlenbrach

(2011)). Since Holderness (2009) finds that virtually all firms have at least one blockholder, what we measure as firms with greater long-term investor ownership may actually be firms with greater blockholder ownership.

We examine how investor horizons as opposed to investor concentration affect our results by accounting for blockholder ownership in our main results. We classify investors that own at least 5% of a firm's shares as "blockholders" (e.g., Holderness (2003)).[16,17] We redo Tables 3–5, but we also control for blockholder ownership as well as the interaction between blockholder ownership and our valuation proxies.

Table 8 presents the results. Again, for expositional simplicity, we only tabulate the regression results for the interaction between our valuation proxies

TABLE 8

Corporate Policy Results Accounting for Blockholders

Table 8 presents the results of firm fixed effects regressions of corporate policy variables on lagged valuation proxies, lagged long-term institutional ownership, and lagged control variables. The regression specifications are the same as in Tables 3–5 except that blockholder ownership and the interaction between blockholder ownership and valuation proxies are added. The sample comprises 88,986 firm-years consisting of 10,579 unique firms between 1985 and 2010. The dependent variable is a different industry-adjusted corporate policy variable in each panel and is measured as a percentage of total assets. Each column uses a different valuation proxy. PV residual B/M, RRV residual B/M, and HP residual B/M are the book-to-market residuals estimated from the valuation models of Pástor and Veronesi (2003), Rhodes-Kropf et al. (2005), and Hoberg and Phillips (2010), respectively. Future excess returns is raw returns minus market index returns. Mutual fund outflows is the amount of a stock sold by mutual funds with extreme fund outflows divided by the amount of the stock traded by all investors. Investors in roughly the bottom quartile of 3-year portfolio turnover are classified as "long-term investors," and all other investors are classified as "short-term investors." Investors that own at least 5% of a firm's shares are classified as "blockholders." Size is quantiles of total assets. Financial constraints is the Kaplan-Zingales index excluding the market-to-book ratio. Risk is the standard deviation of daily returns. Only selected results are tabulated. All independent variables are standardized. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. Below each coefficient estimate is its corresponding *t*-statistic in parentheses. Standard errors are clustered by firm.

	Valuation Proxy					
	Residual B/M					
Variables	PV	RRV	HP	Raw B/M	Future Excess Returns	Mutual Fund Outflows
Panel A. Dependent Variable: Capital Expenditures						
Long-term investor ownership	0.266***	0.280***	0.291***	0.364***	0.233***	0.250***
× Valuation proxy	(5.00)	(5.26)	(5.41)	(6.70)	(5.01)	(4.15)
Blockholder ownership	0.320***	0.140***	0.244***	0.358***	0.066	0.116**
× Valuation proxy	(6.08)	(2.73)	(4.68)	(6.86)	(1.57)	(2.08)
All other variables?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	84,309	76,196	76,196	84,312	82,920	45,343
Adjusted R^2	0.418	0.420	0.422	0.420	0.411	0.473
Panel B. Dependent Variable: Equity Issuance						
Long-term investor ownership	0.442***	0.324***	0.307***	0.456***	0.458***	0.247*
× Valuation proxy	(4.55)	(3.16)	(2.95)	(4.86)	(3.78)	(1.85)
Blockholder ownership	0.673***	0.425***	0.551***	0.759***	0.216**	0.603***
× Valuation proxy	(7.16)	(4.28)	(5.63)	(8.36)	(2.02)	(4.53)
All other variables?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	84,309	76,196	76,196	84,312	82,920	45,343
Adjusted R^2	0.287	0.283	0.286	0.289	0.296	0.310

(continued on next page)

[16]Since we only have data on institutional investors, we miss blockholders such as firm founders or controlling families. However, this does not appear to pose a problem because we are interested in whether (institutional) investor horizons matter for corporate policies compared to (institutional) investor concentration and not whether investor concentration matters per se.

[17]While comprehensive data on blockholders are available from Dlugosz, Fahlenbrach, Gompers, and Metrick (2006) and are used by others, they are only available for S&P 1500 firms from 1996 to 2001.

TABLE 8 (continued)

Corporate Policy Results Accounting for Blockholders

	Valuation Proxy					
	Residual B/M					
Variables	PV	RRV	HP	Raw B/M	Future Excess Returns	Mutual Fund Outflows
Panel C. Dependent Variable: Dividends						
Long-term investor ownership × Valuation proxy	−0.057***	−0.033***	−0.057***	−0.056***	−0.011	0.002
	(−5.33)	(−3.10)	(−4.95)	(−5.30)	(−1.36)	(0.18)
Blockholder ownership × Valuation proxy	0.056***	0.026***	0.042***	0.040***	0.004	0.030***
	(5.57)	(2.80)	(4.18)	(4.00)	(0.54)	(2.73)
All other variables?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	84,309	76,196	76,196	84,312	82,920	45,343
Adjusted R^2	0.638	0.646	0.645	0.638	0.633	0.668
Panel D. Dependent Variable: Share Repurchases						
Long-term investor ownership × Valuation proxy	−0.118***	−0.110***	−0.142***	−0.112***	0.018	−0.085**
	(−3.70)	(−3.68)	(−4.34)	(−3.40)	(0.61)	(−2.04)
Blockholder ownership × Valuation proxy	0.153***	0.053*	0.126***	0.175***	0.027	0.092**
	(5.64)	(1.84)	(4.29)	(6.21)	(1.03)	(2.44)
All other variables?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	84,309	76,196	76,196	84,312	82,920	45,343
Adjusted R^2	0.233	0.228	0.228	0.233	0.230	0.275

and long-term investor ownership as well as the interaction between our valuation proxies and blockholder ownership. Our results for long-term investor ownership are similar with and without controlling for blockholder ownership. (The coefficient estimates are statistically significant in all six regressions for both capital expenditures and equity issuance, four regressions for dividends, and five regressions for share repurchases.) This suggests that long-term investor ownership and blockholder ownership have separate effects on corporate policies. Blockholder ownership also matters but does not always have the same effect as long-term investor ownership: Firms with greater blockholder ownership spend more on capital expenditures and issue more equity when they are undervalued (like firms with longer investor horizons), but they also pay more dividends and repurchase more shares when they are undervalued (like firms with shorter investor horizons). In summary, our results suggest that investor horizons matter for the corporate policies of undervalued firms above and beyond investor concentration.

VI. Conclusion

We study the effect of investor horizons on corporate behavior. In perfect capital markets, investor horizons are irrelevant for corporate policies. However, when a firm is mispriced by the market, the horizons of its investors matter: Longer investor horizons attenuate the effect of mispricing on corporate policies. This is the case even if there are no agency problems between managers and shareholders. We test three hypotheses: The more undervalued a firm, the more i) investment is increasing, ii) equity financing is increasing, and iii) payouts to shareholders are decreasing with investor horizons. The empirical evidence is consistent with these hypotheses. Our results do not appear to be explained by long-term investors' self-selecting into firms the corporate policies of which are less affected by undervaluation. Nor do our results appear to be explained by the monitoring or concentration of long-term investors: Our results are similar when we account for corporate governance and blockholdings. These findings are consistent with a version of market timing in which mispriced firms cater to the tastes of their short-term investors rather than their long-term investors.

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