

The Corporate Finance Benefits of Short-horizon Investors*

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June 2016

We show that firms with more short-term institutional investors have better long-term performance in dynamic economic environments. Following exogenous increases in competitive pressure due to large cuts of import tariff rates, firms with more short-term institutional investors gain market shares and achieve higher growth rates of employees and assets in comparison to other firms in the industries affected by the tariff cuts. To do so, these firms invest more in fixed assets, R&D, and advertising, and differentiate their products from those of the competitors. Firms with more short-term investors also conduct more diversifying acquisitions and have higher executive turnover in the aftermath of large tariff cuts, suggesting that they put stronger effort in adapting their business to the new competitive environment. These results are not specific to tariff cuts but also robust to increases in competitive pressure due to deregulation shocks. Our findings suggest that firms with more short-horizon investors adapt more promptly to changing economic environments and highlight a potential benefit of short-horizon investors.

Keywords: Short-termism, investor horizons, restructuring, tariff cuts, deregulation

JEL Codes: G3, G23, F1

*We thank Mike Burkart, Sudipto Dasgupta, Paolo Fulghieri, Jungsuk Han, Leonard Kostovetsky, Ron Masulis, Luigi Zingales, Jing (Zizi) Zeng and conference participants at the Rising Star Conference at Fordham University and the First CEPR Summer Symposium in Financial Economics at Imperial College for valuable comments. Giannetti acknowledges financial support from the Jan Wallander and Tom Hedelius Foundation.

Technological shocks, changes in the competitive environment, and shifts in regulatory policies often lead to major industry shakeouts, which generate winners and losers among the affected firms. Therefore, it is crucial to understand the factors that help spur prompt and successful restructuring of firms affected by negative shocks and, at the macroeconomic level, of stagnating economies. Unfortunately, we know little about how firms with different characteristics adjust to shocks.

This paper aims to make a first step in understanding how a firm's ownership structure affects a firm's response to negative shocks. Existing literature implies that the management of firms with more short-horizon investors to a larger extent fears the consequences of short-term underperformance because investors with short investment horizons are more likely to pressure boards for managerial changes. Short-term investors are also more likely to sell after observing negative short-term results (Bernardo and Welch 2004).¹ By threatening to exit, short horizon investors are able to exercise pressure without intervening (Stein, 1989).

While the behavior of short-horizon investors is believed to create a handicap for firms when business is as usual (Stein, 2015), we conjecture that the pressure created by the presence of short-horizon investors may allow firms to rapidly adjust in the aftermath of shocks that radically change the environment in which these firms operate. This may be the case, not only because short-horizon investors exercise pressure boards (through exit or voice) following shocks, but also because firms that are forced to focus on short-term performance learnt to be faster in changing their corporate policies. It is ultimately an empirical question whether firms with short-horizon investors are more effective and faster in adapting to new economic environments than other firms.

¹ Cella, Ellul and Giannetti (2013) provide empirical evidence supporting this theoretical argument.

To explore how ownership structure affects firms' adjustment to a changing economic environment, we study how firms react to large changes in their competitive environment. We base most of the empirical investigation on the effects of large drops in industry-level import tariffs. Since softening trade barriers substantially increases the competitive pressure that foreign rivals exert on domestic manufacturing firms, large reductions in import tariffs are considered to be large, plausibly exogenous, shocks (see, for instance, Fresard, 2010 and Valta, 2012), to which firms may have to react strongly, even by reinventing their business model. We test whether firms with more short-horizon investors are more successful in adjusting to these shocks and, as a consequence, perform better than other similarly affected firms.

We find that, following the above mentioned shocks, firms with more short-term investors have a smaller drop in employment and sales in comparison to other (domestic) firms in their industry, which have been similarly affected by the shocks. These effects appear to be associated with more investment and diversifying acquisitions. In particular, firms appear to invest more in R&D and advertising in order to differentiate their products from those of competitors and thus limit the effects of this intensified competition. Firms with more short-term institutional investors also have higher executive turnover following the shocks. Importantly, these changes translate into long-term improvements in productivity, profitability, and firm value. Thus, firms with more short-term investors appear better at reinventing their business model.

Finally, we extend the analysis to major changes in regulation. Industry deregulation provides a source of exogenous variation in the extent of product market competition (Asker and Ljungqvist, 2010). Also in this context, we find that, as an industry deregulates and competition increases, firms with a higher proportion of short-horizon investors adjust faster

to the new environment, gain market shares over the competitors, and, consequently, perform better.

Our results suggest that investors' short horizons are beneficial in fostering firm performance when economic environments change radically. Under these circumstances, firms and economies with short-term investors may appear more dynamic and avoid stagnation.

This paper belongs to a growing literature exploring the effects of institutional ownership on firm performance and corporate policies (Aghion, Van Reenen and Zingales, 2003). A strand of this literature shows that investor horizon affects corporate policies. For instance, Bushee and Noe (2000) and Bushee (2001) show that short-term investment may be valued more in firms whose shareholders have short horizons. Possibly as a consequence, firms with shorter investor horizons reduce research and development expenditures (Bushee, 1998; Cremers, Pareek and Sautner, 2015). Firms with more short-horizon investors also fare worse in takeovers (Gaspar, Massa and Matos, 2005; Chen, Harford and Li, 2007) and have worse overall performance (Harford, Kecskes and Mansi, 2015). Consistent with the above evidence, many 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).

All these papers provide evidence that short-term investors influence managers to pursue corporate policies that destroy firm value during normal times, that is, when the economic environment is static. Theoretically, however, the short-termism of activist investors could ameliorate managerial incentives that have undesirable effects, such as extraction of private benefits or preference for a quiet life (e.g., Fos and Kahn, 2015; Strobl and Zeng, 2015; Thakor, 2015). Short-term investors could also trade on long-term

information and provide stronger governance through their threat of exit (Admati and Pfleiderer, 2009 and Edmans, 2009).

To the best of our knowledge, ours is the first empirical paper to highlight a benefit of short-term investors. We are agnostic on the effect of short-term ownership during normal times (which our empirical strategy is not suitable in identifying). However, we note that our results are fully consistent with existing literature highlighting the negative effects of short-term ownership because the benefits we highlight exist conditionally on negative shocks that require restructuring.

Our results are also consistent with the finding of Massa, Wu, Zhang and Zhang (2015) that short-selling spurs long-term investment in R&D. We show that short-term investors are beneficial to firm performance when they spur faster reaction to shocks that dramatically change the economic environment in which a firm operates. These are presumably the occasions that may also spur more short-selling interest.

The rest of the paper is organized as follows. Section 1 presents a stylized model providing a conceptual framework for the empirical tests. Section 2 describes the empirical approach for the main experiment based on import tariff cuts. Section 3 describes the data. Section 4 reports the results for the tests based on import tariff cuts. Section 5 extends the analysis to increases in competitive pressure due to deregulation shocks. Section 6 concludes. Variable definitions are in the Appendix.

1. Conceptual Framework

Empirical evidence shows that firms with short-term investors are subject to financial market runs (Cella, Ellul and Giannetti, 2013). As a consequence, firms that cater to short-horizon investors may have organizational structures and decision making processes that

make them more prone to weather negative shocks. One may view this paper as a test of this simple organizational behavior story.

In what follows, we show that even in an equilibrium stylized model, whether short-term investors lead to suboptimal choices may depend on the state of the world. In particular, we propose a simple framework to illustrate why a change in competitive environment may make short-term institutional ownership optimal for firms' long-term value maximization.

We assume that short-term institutional investors can ask firms for change through either exit or voice. We show that in equilibrium this change may lead to maximization or destruction of the targeted firm's long-term value even if it always leads to a short-term increase in valuation.

Consider a firm, whose management can be of either high or low quality. Only firms with high quality management are able to implement a different strategy and answer positively to short-term investors' request for change.² Because of their compensation or fear of dismissal, the management's payoff is assumed to depend on the firm's short-term value.

Market participants observe only if a firm has been targeted by short-term investors and subsequently if it implements change. Market participants price the firm's stocks without knowing whether change is good or bad for the firm. The firm's market price at $t = 1$ is the short-term value of the firm. The firm's actual cash flows are revealed only in the long run (at $t = 2$). For this reason, as we show below, it may be optimal in equilibrium for short-term investors, who are expected to sell at $t=1$, to ask for change even if it leads to long-term value destruction.

Change is good if the economic environment has changed, which occurs with probability μ . To capture this, we assume that the value of the firm at $t = 2$ is v_H if the management implements change and the state of the world is favorable to change. However,

² For simplicity, we assume that short-term investors can request change at no cost.

with probability $1 - \mu$, the state of the world is not favorable to change: If a high quality manager were to implement change to respond to short-term investors' requests, he can achieve \underline{v}_M at $t = 2$. This is inefficient with probability $1 - \mu$ because such a high quality manager could achieve $\bar{v}_M > \underline{v}_M$ without implementing change. Thus in this respect short-term investors lead to short-termism. Change may be desirable with probability μ because $v_H > \bar{v}_M$.

The long-term value of a firm with low quality management is always v_L , because low quality management is assumed to be unable to implement change. We assume that a fraction p of firms has high quality management and that market participants do not observe the managers' types or the state of the world. Managers and short-term investors have perfect information on the managers' type and the state of the world when they implement change. Short-term investors learn the manager type after targeting a firm.

Under these assumptions, the model has two ingredients: As in Stein (1989), managers may choose the short-term strategy (that is, change), which is suboptimal for the firm, to signal their type. Differently from Stein (1989), however, we allow change (i.e., the short-term strategy) to be optimal for the firm with some probability.

To see why short-termism and optimal short-term change may coexist, consider that any firm that does not implement change and that is not targeted is valued by the market at:

$$p\bar{v}_M + (1 - p)v_L.$$

This captures that market participants believe that the firm is high quality with probability p . By implementing change, a manager, whose firm has been targeted, can signal its high quality type. In addition, the market prices the fact that change may be optimal for the firm with probability μ . Thus, the short-term market value of a firm that is targeted by short-term investors and implements change is:

$$\mu v_H + (1 - \mu)\underline{v}_M.$$

In equilibrium, market participants would believe that the manager is low quality and the same firm would be valued v_L if the firm were targeted and the manager did not implement change, making change for a targeted firm with high quality management a dominant strategy.

It is optimal for short-term investor to ask for change in firms with high quality managers independently from the state of the world if they can profit by purchasing a firm's stocks (before the market can learn that change will happen) and by selling the stocks in the short term:

$$p\bar{v}_M + (1 - p)v_L < \mu v_H + (1 - \mu)\underline{v}_M.$$

Ex ante, change is inefficient from a social point of view if the cash flows' improvements obtained in the state of the world in which change is good (μ) are smaller than the cash flows destroyed in the state of the world in which change is deleterious ($1 - \mu$):

$$(1 - \mu)(\bar{v}_M - \underline{v}_M) > \mu(v_H - \bar{v}_M).$$

Thus, if v_L and p are small, short-term investors have an incentive to ask for change even though it is inefficient (because \bar{v}_H and μ are small). Shocks to the state of the world increasing \bar{v}_H or μ make short-term institutional ownership positively related to performance.

One may wonder why change requires the presence of short-term investors. Even a good quality manager would not implement change without a short-term investor if there is a sufficiently large private cost of implementing change. This is true if $p\bar{v}_M + (1 - p)v_L > \mu v_H + (1 - \mu)\underline{v}_M - K > v_L$, where K is the manager's private cost of implementing change. The second inequality captures that because of market beliefs the short-term value of any firm that is targeted and does not implement change is v_L , because the manager is assumed to be low quality.

The above equilibrium in which good managers always respond to short-term investors with change holds under the assumptions that implementing change is the only way for a manager and short-term investors to signal firm quality to the market.

In what follows, our contribution consists in identifying empirically situations in which short-term investors may lead firms to better choices and in evaluating the empirical relevance of this new channel. In terms of our model, this implies that we attempt to capture situations in which μ and v_H are large and explore empirically whether short-term investors produce any benefits.

2. Methodology

2.1 Reduction of Import Tariffs

Import competition from foreign firms is a major source of disruption for domestic manufacturing firms. For instance, the surge in China's exports over the last two decades is considered to be responsible for as much as 25% of the aggregate decline of US manufacturing employment (Autor, Dorn and Hanson, 2013).

By changing their strategies, differentiating their products, and innovating, domestic firms may weather competition from foreign firms. Put differently, reacting to foreign competition may require strategic changes, and firms, which are more inclined or faster in changing, are expected to perform better.

We use large reductions of import tariff rates as events that are not under direct controls of domestic firms and that trigger a sudden increase in competitive pressure from foreign rivals by lowering barriers to trade. Because goods and services supplied by foreign rivals become relatively cheaper on domestic markets, large reductions in import tariff rates represent negative shocks triggering a sudden increase in the competitive pressure faced by foreign rivals. These shocks have been widely used in the literature to capture large

exogenous changes in competition (e.g. Fresard, 2010; Xu, 2012; Valta, 2012). We explore whether firms in an industry react differently to these shocks depending on their ownership structure.

As is common in the literature (Feenstra, 1996), we measure ad valorem tariff rates, computed as the duties collected at the U.S. Customs, divided by the Free-On-Board custom value of imports. We obtain U.S. import tariff data for four-digit SIC code industries from Feenstra (1996), Feenstra, Romalis, and Schott (2002), and Schott (2010) starting from 1981, the first year for which we have institutional ownership information, up to 2005. We then update the tariff data up to 2011 following the procedure indicated in the above papers.

We characterize a large tariff cut as a yearly drop in an industry's tariff rate that is larger than twice the median tariff rate reduction in that industry over the sample period.³ Figure 1 shows the distributions of the large tariff cuts in our sample. While large tariff cuts are relatively more frequent in the earlier part of the sample, overall they are evenly distributed over the sample period. Out of the 556 four-digit SIC industries in our sample, 501 are affected at least once by a large tariff drop. Out of 13,327 industry-years, 4,670 are affected by a large tariff drop.

The way in which we measure drops in import tariff cuts allows us to capture actual increases in competition, but it does not take into account that treaties may have been signed time in advance. One may wonder whether some firms may already have taken steps to adapt to the new competitive environment before the year in which we observe the large tariff cuts. In what follows, we find no evidence of differential behavior the year before the cut. The lack of anticipation effects supports our empirical approach and may depend on the fact that it is highly uncertain which (foreign) firms will actually be successful in penetrating the domestic market (Bernard, Jensen, Redding and Schott, 2012). This may lead firms to wait for the

³ Fresard (2010), Xu (2012) and Valta (2012) use similarly defined large tariff cuts to explore the effects of increases in competition on cash-holdings, capital structure and cost of capital.

actual entry of competitors. This conjecture is consistent with the findings of Bloom, Draca and Van Reenen (2016) showing that firms' innovation activities respond to actual import penetration. Therefore, our proxies based on tariffs levied on actual imports are well suited to capture the increase in competitive environment to which firms may respond differentially depending on their characteristics.

2.2 Empirical Framework

We test how *ex ante* differences in ownership by short-term institutional investors lead to differential responses of domestic producers following an exogenous increase of competition triggered by tariff reductions. Our tests share the spirit of the difference-in-difference methodology, but the treatment is a continuous measure of short-term institutional ownership.

We use the following model to test how firms with different proportions of short-term investors at year $t - 1$ react following a tariff cut at year t :

$$g_{f,i,t+1} = \alpha_0 + \alpha_1 cut_{i,t} \times short\ term\ IO_{f,i,-1} + \alpha_2 cut_{i,t} + \alpha_3 short\ term\ IO_{f,i,t-1} + \mathbf{A}_4 \mathbf{X}_{f,i,t} + \varepsilon_{f,i,t} \quad (1)$$

The dummy variable $cut_{i,t}$ takes value equal to one for firms in industry i during the year of the large tariff cut. Model (1) allows us to test whether in the year following the cut, the growth rate of firm f in industry i ($g_{f,i,t+1}$) increases in the proportion of short-term institutional investors at year $t - 1$ ($short\ term\ IO_{f,i,t-1}$).

Depending on the specifications, the matrix of controls, $\mathbf{X}_{f,i,t}$, may include firm and year fixed effects, institutional ownership and an interaction term between institutional ownership and $cut_{i,t}$. The latter interaction term allows for a differential reaction of firms with different levels of institutional ownership to the shock.

Model (1) focuses on firms' short-term reactions to negative shocks depending on the level of short-term institutional ownership. It is also important to know what are the long-

term effects of these reactions on firm performance because, as highlighted in existing literature (e.g., Graham, Harvey and Rajgopal, 2005), short-term growth could be achieved at the expenses of long-term performance. To explore this, we estimate the following model:

$$y_{f,i,t+1} = \beta_0 + \beta_1 post\ cut_{i,t} \times short\ term\ IO_{f,i,year\ before\ cut} + \beta_2 post\ cut_{i,t} + \beta_3 short\ term\ IO_{f,i,year\ before\ cut} + \mathbf{B}_4 \mathbf{X}_{f,i,t} + \varepsilon_{f,i,t} \quad (2)$$

The main difference between Model (1) and Model (2) is that aiming at capturing a permanent effect, the dummy $post\ cut_{i,t}$ takes value equal to one for five years following the first tariff rate cut in industry i . By contrast, the dummy $cut_{i,t}$ takes value one only during the year of the tariff rate cut.

We use Model (1) to explore firms' reactions to shocks and changes in short-term performance measures, such as growth of sales and growth in assets, whereas we use Model (2) to explore firm long-term performance, as captured by (the level of) the market to book ratio, profitability, and labor productivity.

A potential concern with our empirical framework is that tariff cuts affect industries with different dynamics. In our context, however, endogeneity problems arising from potential industry-level omitted factors are mitigated by the fact that we consider heterogeneity in performance of firms within the same industry. The control sample also includes firms with different investor horizons that are not subject to shocks. Our empirical approach thus allows us to identify the causal impact of short-term institutional investors on firm performance in the aftermath of large negative shocks, as long as short-term institutional investors are not particularly good at selecting firms that they expect to perform better in comparison to other firms following negative shocks.

This identification assumption is unlikely to be too restrictive for several reasons. First, we use differences in institutional ownership that are predetermined before the announcement of the tariff cut. Second, for the identification assumption to be violated, it

should be that short-term investors are better at selecting firms subject to negative shocks than firms under normal conditions, because otherwise the direct effect of the percentage of short-term ownership would capture (and control for) the investors' ability to select better companies. Finally, we provide more direct evidence on the validity of our identification assumption in a number of robustness tests in Subsection 3.4.

3. Sample and Data

3.1 Sample Construction and Data Sources

We construct our sample as follows. We begin with all publicly traded U.S. firms in CRSP and COMPUSTAT. We then merge this dataset with information on firm level institutional ownership, available from Thomson Reuters 13F files. The latter are available from 1981. Finally, we use four-digit SIC codes to merge information on tariff cuts. Since we collect information on tariff rate cuts up to 2011, our final sample period is 1981-2011. Other data sources are described as we introduce them in the analysis.

Panel A of Table 1 summarizes the main variables. To capture firms' initial reactions to the increase in competitive pressure, we focus on changes in firm performance. In particular, we consider firms' changes in market share, growth of employees and growth of assets in the year following a large tariff rate cut.⁴

Besides considering the short-term effect of competitive shocks, we also investigate the joint effect of competitive pressure and ownership structure on the firm's long-term performance, which we capture using a firm's Tobin's Q, ROA, and labor productivity. Tobin's Q is computed as the sum of the market value of equity and total liabilities, scaled by total assets. We follow the literature (e.g., Tate and Yang, 2015) and compute labor productivity by dividing sales by number of employees.

⁴ All the growth rates are winsorized so that the maximum is no more than +1 and the minimum no less than -1.

Finally, we explore a number of mechanisms through which some firms may achieve better long-term and short-term performance than their competitors. To capture investment decisions, we use the growth rate of the gross property, plant, and equipment (PPE) and mergers and acquisitions activities (M&A), which we obtain from SDC Platinum. Upgrading product quality, differentiating from low-wage countries exports, and increasing the brand value of the product are often indicated as the best ways to ease the competitive pressure of imports (Leamer, 2007). To capture firms' efforts in these directions, we consider firms' changes in R&D and advertising expenses.

We also attempt to directly capture the extent to which different firms are successful at differentiating their products from their competitors. Ideally, we would like to compare a firm's product with that of the foreign competitors benefiting from the tariff rate cut. This is difficult, however, because firms in different countries disclose different product information in their reports. Instead, we compare how a firm's product differs from that of other U.S. listed companies using data from Hoberg and Phillips (2015).

Hoberg and Phillips (2015) use textual analysis of the product description sections of form 10-K (Item 1 or Item 1A), which firms file annually with the Securities and Exchange Commission (SEC). For each year and each pair of firm, they compute a measure of product similarity by parsing the product descriptions of the firms' 10-Ks. This measure is based on the relative number of words that two firms share in their product description, and ranges between 0% and 100%. The classification covers the period 1996-2011.

Following Hoberg and Phillips (2015, 2010), two firms are characterized to have less differentiated products and hence to be closer competitors if they have greater overlap in the number of words used to describe their product.

For our purposes, we compute the average product overlap of a firm with that of all other listed companies in our sample. Using Model (1), we explore how the average product

overlap changes in the year following the tariff rate cut and how this effect depends on the firm's ownership structure.

Finally, using EXECUCOMP we also explore whether firms with more short-term investors are more likely to adapt to changing market conditions by turning over their executive team.

3.2 Measuring Investor Horizon

For our tests, it is crucial to measure firm differences in ownership structure and investor horizon. An investor's horizon is generally considered an exogenous characteristics of the investor's trading style, which does not change (or changes slowly) over time. Investors' trading horizons are revealed through time by their trading behavior because institutional investors with short trading horizons buy and sell more frequently than long-horizon investors.

To measure short-term institutional ownership in firm i , we use two proxies for investor horizon commonly used in the literature. Our main proxy for institutional investor horizon—*% Short-term Investors*—exploits Bushee's classification of 13F investors (see Bushee, 1998 and 2001, and Bushee and Noe, 2000). Bushee distinguishes between transient investors, dedicated investors, and quasi-indexers. Transient investors have high portfolio turnover and highly diversified portfolios. To the contrary, dedicated investors and quasi-indexers guarantee long-term stable ownership to firms. The extent of short-term institutional ownership of a firm, *% Short-term Investors*, is then defined as the proportion of institutional investors' stocks held by transient investors during the year preceding the tariff rate cut.

We also compute an alternative proxy for institutional investors' horizon, similarly to Gaspar, Massa and Matos (2005) and Cella, Ellul and Giannetti (2013), as follows. First, we measure an investor's quarterly portfolio turnover as the minimum of the absolute values of buys and sells made by institutional investor j during quarter t , divided by the total holdings

at the end of quarter $t - 1$, with buys and sells being measured using end-of-quarter $t - 1$ prices. This measure of portfolio turnover relying on the minimum of sales and purchases is not expected to depend on changes in asset under management and to reveal an investor's trading horizon (Wermers, 2000). Next, to obtain a firm's yearly measure of short-term institutional ownership, we average each investor portfolio turnover over the year and then take a weighted average of the portfolio turnover of institutional investors in a firm, using as weight the proportion of institutional investors' shares in the firm held by investor j at the end of year t .

Importantly, the particular short-term investors holding stocks in a firm are likely to change quickly. However, the extent to which a firm attracts short-term investors is relatively stable over time not least because short-term investors trade with each other. Thus, the proportion of short-term investors holding stocks in a firm over the current year has a correlation with the proportion of short-term investors holding stocks in the firm during the previous year in excess to 80%. This correlation remains in excess of 50% if we consider the proportion of short-term investors holding stocks in the firm four years earlier.

Panel B of Table 1 shows some salient characteristics of the firms with different level of institutional ownership. Almost by construction, firms with more short-term investors also have greater institutional ownership. The two groups of firms share similar characteristics such as size captured by number of employees or total assets. Other firm characteristics, such as leverage and Tobin's Q, even though statistically different, are not necessarily economically different between the two subsamples.

4. Main Results

4.1 Short-Term Effects of Negative Shocks

Table 2 explores the response of firms with different ownership structure to tariff cuts. In Panel A, we explore the change in sales. We show that the sales of firms with an ex ante larger proportion of short-term investors drop to a lower extent than those of other domestic listed companies in the industry in the year following the tariff cut.

This result holds for both measures of investor horizon. It is also robust when we control for the differential impact of the tariff cuts for firms with different ex ante levels of institutional ownership. The effect cannot depend on the fact that short-term investors select firms whose market share is growing (independently from the tariff cut) as we control for the direct effect of short-term institutional ownership throughout the analysis. Furthermore, this result continues to hold when we include firm fixed effects.

This finding is not only statistically, but also economically significant. The coefficient estimate in column 3 of Table 2 implies that following a large tariff cut, a firm with one standard deviation larger proportion of institutional ownership has a drop in sales that is nearly 5% smaller than that of an otherwise similar firm. The effect is even larger in column 6 where we recognize that short-horizon investors are heterogeneous and we use the average portfolio turnover of the institutional investors in a firm (*Churn*) to proxy for the short-term orientation of the firm's shareholders: a firm with one-standard-deviation larger short-term institutional ownership has a drop in sales 10% smaller than that of an otherwise similar firm following a large tariff cut.

The smaller drop in sales of firms with more short-term institutional ownership with respect to other domestic firms in the same industry appears to be achieved through higher firm growth. Panels B and C of Table 2 reveal that, following import tariff cuts, these firms have higher growth rates of assets and employment than other firms affected by the same negative shock. For instance, in column 3 of Panel B, a one-standard-deviation change in the

percentage of short-term institutional ownership corresponds to 5% faster growth of assets following a large tariff cut.

4.2 Long-Term Effects

Existing literature highlights that managers subject to pressure from short-term investors take actions that improve firm performance in the short run at the cost of long term-performance (e.g., Graham, Harvey, and Rajgopal, 2005). One may wonder whether firms do so also in response to negative shocks that increase competition. In this section, we address this question by exploring the long-term effects of short-term institutional ownership for firms in industries affected by large tariff cuts using Model (2).

Panel A of Table 3 shows that firms with more short-term institutional ownership still have higher valuations five years after the tariff cut. Five years after the tariff cut, these firms also continue to have higher profitability (Panel B) and productivity (Panel C), although in the latter case the effect is no longer significant at conventional level once we include interactions of industry and year fixed effects. The effects are also economically sizable. For instance, a one-standard-deviation increase in short-term institutional ownership translates into almost 30 percentage points higher Tobin's Q and 5.6 percentage points higher ROA five years after a large tariff cut.

These results indicate that the increase in market share and higher growth have long-term benefits for shareholders.

4.3 Mechanisms

In this subsection, we explore how firms with more short-term institutional owners manage to achieve higher growth and better long-term performance following large tariff cuts. We explore differences in a host of corporate policies in the year following the tariff cut.

Table 4, Panel A shows that firms with more short-term institutional ownership have higher growth rate of the gross PPE, indicating that they invest more in organic growth. Panel B reveals that they do not necessarily make more M&A, but they engage in diversifying acquisitions to a greater extent than other firms. We measure diversifying acquisitions as acquisitions of firms in a different three-digit SIC code from the one of the firm. The fact that firms with more short-term investors are more likely to make diversifying acquisitions following a tariff cut suggests that these firms attempt to ease import competition by accessing new markets and reinventing their business model.

Also consistent with the attempt of easing competition, we find that firms with more short-term institutional investors increase their R&D (Panel C) and advertising expenses (Panel D) more than other firms following tariff cuts. Arguably as a consequence of these investments, the overlap between their product description and that of other U.S. listed companies drops, indicating that firms with short-horizon investors are successful at differentiating their product (Panel E).⁵

Firms with more short-horizon investors attempt to adjust to market conditions also turning over the executive team. Consistent with these firms' greater efforts of adapting to changes in the competitive environment, in the aftermath of tariff cuts, executive turnover increases to a larger extent in firms with more short-horizon investors (Panel F).

4.4 Robustness

This section presents a number of robustness checks in order to evaluate the merit of alternative interpretations of the empirical evidence.

4.4.1 Preexisting Differences in Firm Performance

First, our difference-in-difference framework allows for a causal interpretation of the empirical evidence as long as firms with greater presence of short-term investors did not

⁵ Since we are able to compute changes in differentiated products only from 1997, our sample here is 1997-2011. For lack of power, also due to the fact that large tariff cuts are more frequent in the earlier part of the sample (Figure 1), we are unable to include the interaction between institutional ownership and the cut dummy.

behave differently from those with smaller fraction of short-term investors before the negative shock. To test this identification assumption, we perform a placebo test. We lag the tariff cut dummy by one year and test whether firms with more short-horizon investors in industries that will eventually be affected by the tariff cut are already growing faster than other industries. In Panel A of Table 5, we find no evidence that this is the case, indicating that the timing of the change fully supports the causal interpretation of the empirical evidence.

4.4.2 Do Short-term Investors Select Better Firms?

While the direct effect of short-term institutional ownership controls for these investors' ability to select better companies, a possible concern is that short-term institutional investors select firms that they anticipate to be better at coping with competitive pressure and negative shocks. In this case, reverse causality would undermine our interpretation of the empirical evidence.

To address this concern, in Panel B of Table 5, we lag the ownership variables by four years. While firms with high short-term institutional ownership always tend to attract short-term investors, it is unlikely that tariff cuts, and the firms' ability to cope with competitive pressure, could be anticipated so far in advance. Thus, our estimates should not be biased by selection problems when we use four year lags. It is therefore reassuring that we continue to find that firms that had more short-term institutional investors five years before the tariff cuts grow faster and invest more in the year following the shock.

In unreported tests, we find no evidence that short-term ownership in firms that have more short-term investors at the time of tariff cuts increased in the years preceding the shock. This also confirms that our findings are not due to reverse causality.

4.4.3 Other Selection Problems

Selection problems could also arise for another, more subtle, reason if firms with more short-horizon investors were more likely to exit the dataset because of acquisitions, bankruptcy or delistings after the large tariff cuts. In this case, the sample of firms with short-horizon investors would be biased towards better firms especially after negative shocks.

To evaluate this alternative explanation, we compare the rate of exit either due to bankruptcy and delisting (death) or including also acquisitions (exit) between firms with high and low level of short-term investors.⁶ The death (exit) rate of firms with a proportion of short-horizon investors above the median is 0.4 (0.1) percent; the corresponding death and exit rates for firms with share of short-horizon investors below the median are 3 percent and 1 percent, respectively. Thus, the exit and death rates are lower, not higher for firms with short-horizon investors, suggesting that any selections problems are likely to make more difficult to find a result.

This conclusion is also apparent from the multivariate analysis, in which we test whether the probability of exit of a firm depends on the proportion of short-horizon investors after negative shocks. Table 6 reports the results. There is certainly no evidence that following negative shocks a higher proportion of short-horizon investors increases the probability of exit, whether we consider or not exits due to acquisitions. This implies that changes in sample composition cannot drive our findings. In some specifications, short-term investors even appear to decrease firms' probability of exiting following large tariff cuts.

4.4.4 Does Ownership Change Following the Tariff Cuts?

Firms with ex ante more short-term investors could suffer from tariff cuts less than others not because short-term investors spur beneficial changes, but because short-term institutional ownership decreases in the aftermath of the tariff cut. These firms could then revert to long-term strategies.

⁶ Specifically, following Bhattacharya et al. (2015), we define the death of a firm based on its CRSP delisting code: liquidations (400-490), dropped (500-591), or expirations (600-610). The exit of a firm also includes mergers (200-290) and exchanges (300-390).

Table 7 regresses *short term* $IO_{f,i,t+1}$ on the *post cut* $_{i,t}$ dummy and a number of controls. There is no evidence that short-term institutional ownership decreases following the tariff cut. If anything, short-term institutional ownership increases, confirming that the pressure exercised by short-term investors produces the benefits and facilitates restructuring after large tariff rate cuts.

4.4.5 Omitted Factors

Endogeneity problems may also arise because firms with higher short-term institutional ownership have unobserved (or uncontrolled) characteristics that drive their differential response to increased competitive pressure. While it is impossible to provide a statistical demonstration that this is not the case, it is comforting that our estimates appear robust across a variety of specifications, which consider different sets of controls. If selection on observables is informative about selection on unobservables, which is more likely to be the case when the R^2 varies as in our case (Oster, 2015), these tests indicate that unobservable firm characteristics affecting firms' response to shocks are unlikely to bias our findings.

Nevertheless, in what follows we evaluate possible alternative mechanisms that may drive our findings. Firms' ability to gain market share following an increase in competition may depend on cash availability (Fresard, 2010). This may increase the firms' ability to invest and to differentiate their products and may bias our findings if firms with more short-horizon investors also have more cash. To consider this possibility, we control for a firm's cash and include an interaction between the firm's cash and the dummy *cut*. Table 8 reveals that our estimates remain invariant, indicating that this alternative channel does not drive our findings.

5. An Out-of-Sample Test using Deregulations

Our maintained hypothesis implies that firms with more short-horizon investors are faster and more successful in adjusting to any shocks that dramatically affect the economic environment in which a firm operates. So far, we have considered how firms with different proportions of short-term investors react to large import tariff rate cuts. To assess the generality of our conclusions, we explore how firms with different proportions of short-term investors react to significant deregulatory shocks.

Industry deregulations significantly increased competition in the affected industries. Asker and Ljungqvist (2010) use such a shock in their investigation of relationships between investment banks and their clients and provide a detailed description of the events. Examples include the partial deregulation of the bus and trucking industries in the 1982 Bus Regulatory Reform Act, the 1984 Cable Television Deregulation Act, and the 1992 Energy Policy Act, which introduced wholesale competition in electrical power. All the deregulation events occurred between 1977 and 1996. Since our sample starts in 1981, we lose events that occurred prior to that year.

Importantly for our identification, differently from the tariff rate cuts, which concern manufacturing industries, these shocks affected 24 four-digit-SIC codes industries providing services. We use as control other firms in the same three-digit SIC industries as the deregulated firms, but with different four-digit SIC codes. Deregulation shocks therefore allow us to perform an out-of-sample test of the role of short-term ownership in favoring industry restructuring following changes in the economic environment.

We estimate a variation of model (1) in which the dummy *cut* is replaced by the dummy *Deregulation*, which takes value one in the year of deregulation. Table 9 provides clear evidence that also following dramatic changes in economic environment due to deregulations, firms that happened to have more short-horizon investors before deregulation have higher sales and asset growth. For instance, a one-standard-deviation increase in the

proportion of short-term ownerships leads to 11 percentage point smaller drop in sales in the year following a tariff cut. Arguably as a consequence, their valuations are larger with respect to the ones of other firms affected by the deregulations for at least five years after the deregulation events (columns 5 and 6).

6. Conclusions

Firms with disproportionately more short-horizon investors are known to focus on short-term performance. In normal times and static economic environments, this behavior has been shown to lead to long-term underperformance as these firms sacrifice long-term investment such as R&D to achieve higher earnings. We show that these results are reversed in the aftermath of negative shocks that alter a firm's economic environment and require changes in firm strategy.

Firms with more short-horizon investors appear to make more significant efforts to adapt the new business environment. By changing the executive team, performing diversifying acquisitions, and investing more especially in R&D and advertising, these firms appear to succeed in differentiating their product from that of the competitors and in entering new markets in a way that enhances their long-term performance.

These results suggest that investors' short horizons may be particularly beneficial in fostering firm performance in dynamic economic environments. Under these conditions, firms and economies with short-horizon investors may appear more dynamic and avoid stagnation.

Appendix

Variables	Definition
% Institutional Investors	The fraction of shares held by institutional investors at year $t - 1$. Source: 13F.
% Short-term Investors	The fraction of institutional investors' shares held by transient investors at year $t - 1$. Transient investors are identified following Bushee's (1998 and 2001) classification of 13F investors. Source: 13F and Bushee's Website.
Advertising Growth	The difference between the natural logarithm of a firm's advertising expenditure in year t and year $t - 1$. Winsorized so that the maximum is no more than 1 and minimum no less than -1. Source: COMPUSTAT.
Asset Growth	The difference between the natural logarithm of a firm's total assets in year t and year $t - 1$. Winsorized so that the maximum is no more than 1 and minimum no less than -1. Source: COMPUSTAT.
Cash	Cash and short-term investments divided by total assets. Source: COMPUSTAT.
Changes in Market Share	The difference between the natural logarithm of a firm's market share in year t and year $t - 1$. A firm's market share is computed as the firm's revenues divided by the sum of the revenues of all the firms operating within the same four-digit SIC industry. Source: COMPUSTAT.
Churn	The weighted average of the portfolio turnover of institutional investors in a firm during the year preceding the tariff rate cut, where the weight is the fraction of shares held by investor j at the end of year $t - 1$. Each institutional investor's quarterly portfolio turnover is calculated as the minimum of the absolute values of buys and sells made by institutional investor j during quarter t , divided by the total holdings at the end of quarter $t - 1$, with buys and sells being measured using end-of-quarter $t - 1$ prices. We then average each investor portfolio turnover over the year. Source: 13F.
Cut	A dummy variable equal to one if a firm belongs to an industry that experiences a large tariff cut during the previous year, and zero otherwise. Sources: Feenstra (1996), Feenstra, Romalis, and Schott (2002), and Schott (2010).
Death	A dummy variable equal to one if in a given year a firm is liquidated (CRSP delisting codes 400-490), is dropped (500-591), or expires (600-610), and zero otherwise. Source: CRSP.
Diversifying M&A	A dummy variable equal to one if a firm acquires a target whose primary 3-digit SIC code differs from its own, and zero otherwise. Source: SDC.
Employee Growth	The difference between the natural logarithm of a firm's number of employees in year t and year $t - 1$. Winsorized so that the maximum is no more than 1 and minimum no less than -1. Source: COMPUSTAT.
Executive Turnover	The number of executive leaving or joining a firm in a given year, divided by the number of executives at the end of the previous year. Source: EXECUCOMP.
Exit	A dummy variable equal to one if in a given year a firm experiences a merger (CRSP delisting codes 200-290), an exchange (300-390), a liquidation (CRSP delisting codes 400-490), is dropped (500-591), or expires (600-610), and zero otherwise. Source: CRSP.
Labor Productivity	Total revenue divided by number of employees. Winsorized at 5%. Source: COMPUSTAT.
Leverage	Total liabilities divided by total assets. Winsorized at 1%. Source: COMPUSTAT.
M&A	A dummy variable equal to one if a firm makes a merger and acquisition

	deal in a given year and zero otherwise. Source: SDC.
PPE Growth	The difference between the natural logarithm of a firm's gross property, plant, and equipment in year t and year $t - 1$. Winsorized so that the maximum is no more than 1 and minimum no less than -1. Source: COMPUSTAT.
Product Differentiation	The difference between the natural logarithm of product overlap score in year t and year $t - 1$. A firm's product overlap score is computed by averaging the Hoberg and Phillips' product overlap score of a given firm with all the other firms in COMPUSTAT. Source: Hoberg and Phillips (2015).
Post Cut	A dummy variable equal to one for five years following the first tariff rate cut in a given industry, and zero otherwise. Sources: Feenstra (1996), Feenstra, Romalis, and Schott (2002), and Schott (2010).
R&D Growth	The difference between the natural logarithm of a firm's R&D expenditure in year t and year $t - 1$. Winsorized so that the maximum is no more than 1 and minimum no less than -1. Source: COMPUSTAT.
ROA	Return on assets. Calculated as net earnings divided by total assets. Winsorized at 1%. Source: COMPUSTAT.
Tobin's Q	The sum of market value of equity and total liabilities divided by total assets. Winsorized at 5%. Source: COMPUSTAT.

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Figure 1: Distribution of Large Import Tariff Cuts

Figure 1 shows the number of four-digit SIC industries affected by a tariff cut in a given year.

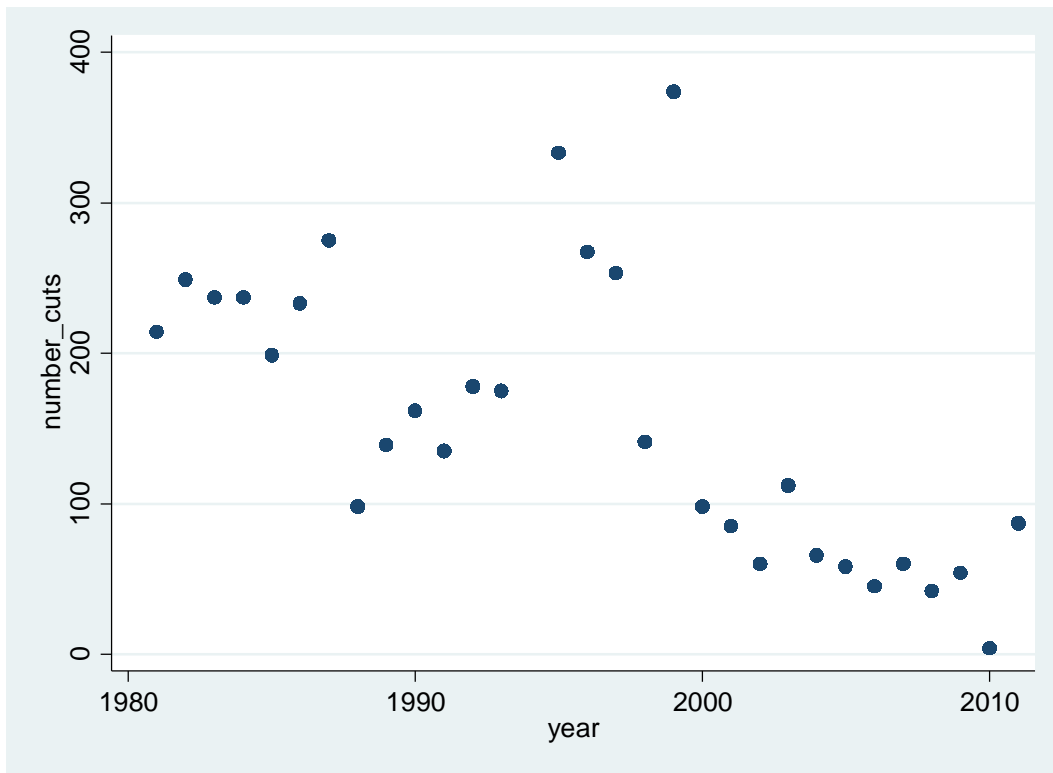


Table 1: Summary Statistics

Panel A reports summary statistics for our sample. In Panel B, we compare firm characteristics associated with high and low ownership of short-term investors based on the sample median. The p -value of the T-test for the difference in sample mean is reported in column (5).

Panel A: Firm Characteristics

	# obs.	Mean	STD	25th	Median	75th
Sales Growth	28,380	0.214	0.439	-0.014	0.119	0.376
Changes in Market Share	24,568	0.102	0.513	-0.040	0.083	0.226
Asset Growth	28,380	0.182	0.415	-0.033	0.084	0.297
Employee Growth	28,380	0.184	0.420	-0.035	0.056	0.262
PPE Growth	28,380	0.214	0.376	0.025	0.097	0.272
ROA	28,096	-0.106	0.476	-0.088	0.032	0.083
Tobin's Q	27,657	2.158	1.539	1.118	1.578	2.569
Labor Productivity	27,064	0.253	0.225	0.107	0.180	0.306
% Short-term Investors	25,531	0.100	0.099	0.020	0.071	0.152
Churn	28,380	0.029	0.027	0.006	0.022	0.047
% Institutional Investors	28,301	0.352	0.278	0.090	0.303	0.601
Total Assets (\$MM)	28,138	3,388	17,293	34	142	882
Cash	28,129	0.239	0.251	0.038	0.144	0.364
Employees	27,212	8,549	33,391	133	582	3,463
Leverage	28,079	0.481	0.433	0.235	0.419	0.594

Panel B: Univariate Comparison

	Low Level of Short-term Investors		High Level of Short-term Investors		p -value
	# obs.	Mean	# obs.	Mean	
	(1)	(2)	(3)	(4)	
% Short-term Investors	12,766	0.025	12,765	0.175	0.000
Churn	12,766	0.013	12,765	0.051	0.000
% Institutional Investors	12,766	0.197	12,765	0.573	0.000
Total Assets (\$MM)	12,652	3,851.80	12,701	3,614.05	0.297
Cash	12,647	0.221	12,699	0.264	0.000
Employees (thousands)	12,167	9.111	12,443	9.574	0.299
Leverage	12,637	0.470	12,660	0.448	0.000

Table 2: Response to Shocks

This table explores firms' responses to large tariff cuts. The dependent variable is sales growth in Panel A, asset growth in Panel B, and employment growth in Panel C. All models include a constant and fixed effects as described in the table whose coefficients are not reported. Standard errors clustered at the firm level are in parenthesis. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Sales Growth

	(1)	(2)	(3)	(4)	(5)	(6)
Cut × % Short-term Investors	0.194*** (0.063)	0.509*** (0.087)	0.494*** (0.087)			
Cut	-0.033*** (0.009)	0.028** (0.012)	0.024** (0.012)	-0.033*** (0.010)	0.032*** (0.011)	0.028*** (0.011)
% Short-term Investors	0.845*** (0.044)	0.325*** (0.057)	0.294*** (0.056)			
Cut × Churn				0.811*** (0.242)	4.204*** (0.651)	4.162*** (0.646)
Churn				4.960*** (0.291)	0.804** (0.409)	0.694* (0.411)
% Institutional Investors	-0.411*** (0.015)	-0.303*** (0.028)	-0.307*** (0.028)	-0.654*** (0.027)	-0.260*** (0.043)	-0.264*** (0.043)
Cut × % Institutional Investors		-0.202*** (0.031)	-0.189*** (0.031)		-0.424*** (0.057)	-0.410*** (0.057)
ROA			0.193*** (0.019)			0.159*** (0.016)
Constant	0.279*** (0.008)			0.303*** (0.008)		
Observations	25,531	25,220	25,011	28,301	27,986	27,717
R-squared	0.106	0.302	0.303	0.101	0.303	0.301
Firm FE	NO	YES	YES	NO	YES	YES
Year FE	YES	YES	YES	YES	YES	YES

Table 2 continued.

Panel B: Asset Growth

	(1)	(2)	(3)	(4)	(5)	(6)
Cut × % Short-term Investors	0.196*** (0.057)	0.568*** (0.081)	0.542*** (0.081)			
Cut	-0.029*** (0.009)	0.021* (0.012)	0.012 (0.011)	-0.026*** (0.009)	0.025** (0.011)	0.015 (0.011)
% Short-term Investors	0.738*** (0.038)	0.425*** (0.052)	0.334*** (0.049)			
Cut × Churn				0.678*** (0.225)	4.539*** (0.603)	4.472*** (0.591)
Churn				4.038*** (0.249)	0.984*** (0.353)	0.498 (0.356)
% Institutional Investors	-0.304*** (0.013)	-0.357*** (0.028)	-0.361*** (0.027)	-0.482*** (0.023)	-0.295*** (0.039)	-0.285*** (0.039)
Cut × % Institutional Investors		-0.198*** (0.031)	-0.172*** (0.030)		-0.427*** (0.055)	-0.402*** (0.054)
ROA			0.453*** (0.021)			0.407*** (0.018)
Constant	0.220*** (0.006)			0.237*** (0.006)		
Observations	25,531	25,220	25,011	28,301	27,986	27,717
R-squared	0.104	0.271	0.337	0.096	0.265	0.323
Firm FE	NO	YES	YES	NO	YES	YES
Year FE	YES	YES	YES	YES	YES	YES

Table 2 continued.

Panel C: Employment Growth

	(1)	(2)	(3)	(4)	(5)	(6)
Cut × % Short-term Investors	0.181*** (0.062)	0.538*** (0.081)	0.529*** (0.082)			
Cut	-0.033*** (0.009)	0.034*** (0.012)	0.032*** (0.012)	-0.034*** (0.010)	0.032*** (0.011)	0.029*** (0.011)
% Short-term Investors	0.808*** (0.043)	0.304*** (0.052)	0.282*** (0.051)			
Cut × Churn				0.753*** (0.244)	4.436*** (0.577)	4.394*** (0.576)
Churn				4.478*** (0.288)	0.544 (0.362)	0.470 (0.363)
% Institutional Investors	-0.411*** (0.016)	-0.244*** (0.030)	-0.247*** (0.030)	-0.624*** (0.027)	-0.202*** (0.041)	-0.206*** (0.040)
Cut × % Institutional Investors		-0.218*** (0.032)	-0.210*** (0.032)		-0.437*** (0.054)	-0.427*** (0.053)
ROA			0.146*** (0.016)			0.124*** (0.014)
Constant	0.252*** (0.008)			0.277*** (0.008)		
Observations	25,531	25,220	25,011	28,301	27,986	27,717
R-squared	0.104	0.338	0.332	0.098	0.333	0.324
Firm FE	NO	YES	YES	NO	YES	YES
Year FE	YES	YES	YES	YES	YES	YES

Table 3: Long-term Effects

The dependent variable is Tobin's Q in Panel A, ROA (t+1) in Panel B, and Labor Productivity in Panel C. All models include a constant and fixed effects as described in the table whose coefficients are not reported. Industry is a firm's four-digit SIC code. Standard errors are clustered at the firm level and are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Tobin's Q

	(1)	(2)	(3)	(4)	(5)	(6)
Post Cut × % Short-term Investors	0.632*** (0.212)	0.637*** (0.216)	0.644** (0.276)			
Post Cut	-0.184*** (0.029)	-0.182*** (0.043)	-0.291*** (0.056)	-0.192*** (0.028)	-0.213*** (0.036)	-0.313*** (0.048)
% Short-term Investors	0.773*** (0.172)	0.776*** (0.177)	0.724*** (0.191)			
Post Cut × Churn				2.693*** (0.808)	2.226** (0.903)	3.183** (1.289)
Churn				1.546* (0.870)	1.092 (0.951)	1.581 (1.054)
% Institutional Investors	-0.960*** (0.096)	-0.961*** (0.097)	-0.910*** (0.113)	-0.864*** (0.101)	-0.828*** (0.108)	-0.867*** (0.128)
Post Cut × % Institutional Investors		-0.005 (0.083)	0.068 (0.096)		0.084 (0.083)	0.060 (0.100)
Leverage	0.381*** (0.070)	0.381*** (0.070)	0.452*** (0.074)	0.443*** (0.059)	0.440*** (0.059)	0.493*** (0.062)
ROA	-0.105* (0.060)	-0.105* (0.060)	-0.144** (0.062)	-0.155*** (0.051)	-0.155*** (0.051)	-0.188*** (0.052)
Observations	23,623	23,623	23,023	27,280	27,247	26,704
R-squared	0.614	0.614	0.669	0.630	0.630	0.678
Firm FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	NO	YES	YES	NO
Industry × Year FE	NO	NO	YES	NO	NO	YES

Table 3 continued.**Panel B: ROA (t+1)**

	(1)	(2)	(3)	(4)	(5)	(6)
Post Cut × % Short-term Investors	0.092** (0.040)	0.100** (0.039)	0.128** (0.056)			
Post Cut	0.003 (0.006)	0.007 (0.010)	0.007 (0.014)	-0.002 (0.007)	0.004 (0.010)	0.002 (0.013)
% Short-term Investors	0.018 (0.031)	0.024 (0.033)	0.026 (0.041)			
Post Cut × Churn				0.408** (0.170)	0.551*** (0.183)	0.582* (0.303)
Churn				0.310* (0.161)	0.439** (0.182)	0.438** (0.205)
% Institutional Investors	0.003 (0.021)	0.002 (0.021)	0.005 (0.028)	-0.006 (0.021)	-0.018 (0.022)	-0.014 (0.029)
Post Cut × % Institutional Investors		-0.010 (0.018)	-0.011 (0.022)		-0.025 (0.021)	-0.023 (0.024)
Leverage	-0.065* (0.035)	-0.065* (0.035)	-0.065* (0.036)	-0.072** (0.031)	-0.073** (0.031)	-0.078** (0.031)
Observations	21,476	21,476	20,873	24,745	24,719	24,191
R-squared	0.640	0.640	0.669	0.660	0.658	0.682
Firm FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	NO	YES	YES	NO
Industry × Year FE	NO	NO	YES	NO	NO	YES

Table 3 continued.

Panel C: Labor Productivity

	(1)	(2)	(3)	(4)	(5)	(6)
Post Cut × % Short-term Investors	0.097*** (0.024)	0.094*** (0.024)	0.037 (0.029)			
Post Cut	0.008*** (0.003)	0.007 (0.004)	-0.012** (0.005)	0.008*** (0.003)	0.012*** (0.004)	-0.004 (0.005)
% Short-term Investors	0.113*** (0.017)	0.111*** (0.019)	0.083*** (0.020)			
Post Cut × Churn				0.349*** (0.100)	0.454*** (0.111)	0.238 (0.153)
Churn				0.608*** (0.093)	0.707*** (0.118)	0.587*** (0.125)
% Institutional Investors	-0.007 (0.012)	-0.006 (0.012)	0.019 (0.012)	-0.014 (0.012)	-0.022* (0.013)	0.004 (0.015)
Post Cut × % Institutional Investors		0.004 (0.009)	0.002 (0.009)		-0.019* (0.010)	-0.014 (0.011)
Leverage	0.048*** (0.010)	0.048*** (0.010)	0.035*** (0.010)	0.039*** (0.008)	0.038*** (0.008)	0.027*** (0.008)
ROA	0.105*** (0.008)	0.105*** (0.008)	0.096*** (0.008)	0.090*** (0.007)	0.090*** (0.007)	0.081*** (0.007)
Observations	23,120	23,120	22,514	26,619	26,585	26,034
R-squared	0.843	0.843	0.871	0.835	0.835	0.864
Firm FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	NO	YES	YES	NO
Industry × Year FE	NO	NO	YES	NO	NO	YES

Table 4: Mechanisms

In Panel A, the dependent variable is PPE growth. In column (1) of Panel B, the dependent variable is a dummy variable equal to one if a firm has engaged in mergers and acquisitions (M&A) activities in a given year, and zero otherwise. In columns (2) to (7) of Panel B, the dependent variable is a dummy variable equal to one if a firm has engaged in diversifying M&A deals. An M&A deal is classified as diversifying if the target and acquirer operate in different industries, based on their two-digit SIC codes. In Panel C, the dependent variable is R&D growth. In Panel D, the dependent variable is advertising growth. In Panel E, the dependent variable is change in product differentiation, measured using the textual measure of product overlap of Hoberg and Phillips (2015). In Panel F, the dependent variable is a dummy for executive turnover. All models include a constant, and fixed effects as described in the table whose coefficients are not reported. Industry is a firm's four-digit SIC codes. Standard errors are clustered at the firm level and are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: PPE Growth

	(1)	(2)	(3)	(4)	(5)	(6)
Cut × % Short-term Investors	0.158*** (0.053)	0.568*** (0.071)	0.561*** (0.072)			
Cut	-0.020** (0.008)	0.035*** (0.011)	0.034*** (0.011)	-0.020** (0.009)	0.034*** (0.010)	0.032*** (0.010)
% Short-term Investors	0.911*** (0.039)	0.439*** (0.049)	0.423*** (0.048)			
Cut × Churn				0.649*** (0.214)	4.702*** (0.522)	4.685*** (0.520)
Churn				5.185*** (0.263)	1.409*** (0.316)	1.360*** (0.313)
% Institutional Investors	-0.377*** (0.013)	-0.238*** (0.026)	-0.242*** (0.025)	-0.621*** (0.024)	-0.230*** (0.035)	-0.233*** (0.035)
Cut × % Institutional Investors		-0.215*** (0.028)	-0.210*** (0.028)		-0.449*** (0.048)	-0.443*** (0.048)
ROA			0.118*** (0.014)			0.096*** (0.013)
Constant	0.259*** (0.006)			0.283*** (0.007)		
Observations	25,531	25,220	25,011	28,301	27,986	27,717
R-squared	0.128	0.338	0.329	0.116	0.333	0.322
Firm FE	NO	YES	YES	NO	YES	YES
Year FE	YES	YES	YES	YES	YES	YES

Table 4 continued.

Panel B: Mergers and Acquisitions

	M&A	Diversifying M&A					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Cut × % Short-term Investors	-0.020 (0.079)	0.181** (0.073)	0.168*** (0.050)	0.180** (0.073)			
Cut	-0.018* (0.010)	-0.019** (0.009)	-0.010 (0.007)	-0.009 (0.008)	-0.013 (0.008)	-0.005 (0.006)	-0.004 (0.007)
% Short-term Investors	-0.094 (0.064)	-0.212*** (0.057)	-0.142*** (0.042)	-0.145*** (0.044)			
Cut × Churn					0.489* (0.266)	0.408** (0.190)	0.585 (0.508)
Churn					-1.826*** (0.354)	-1.094*** (0.258)	-1.129*** (0.266)
% Institutional Investors	0.228*** (0.031)	0.177*** (0.028)	0.111*** (0.021)	0.113*** (0.021)	0.286*** (0.040)	0.174*** (0.030)	0.178*** (0.031)
Cut × % Institutional Investors				-0.006 (0.028)			-0.018 (0.047)
# of M&As			0.229*** (0.025)	0.229*** (0.025)		0.231*** (0.025)	0.231*** (0.025)
Size	0.040*** (0.004)	0.034*** (0.004)	0.004 (0.002)	0.004 (0.002)	0.032*** (0.003)	0.004 (0.002)	0.004 (0.002)
ROA	0.025** (0.010)	0.013 (0.008)	0.020*** (0.005)	0.020*** (0.005)	0.002 (0.007)	0.014*** (0.004)	0.014*** (0.004)
Observations	21,867	21,867	21,867	21,867	23,964	23,964	23,964
R-squared	0.101	0.091	0.452	0.452	0.094	0.455	0.455
Industry FE	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES

Table 4 continued.

Panel C: R&D Growth

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Cut × % Short-term Investors	0.361*** (0.105)	0.382*** (0.089)	0.371*** (0.104)	0.378*** (0.089)				
Cut	0.019 (0.014)	0.044*** (0.013)	0.015 (0.014)	0.039*** (0.013)	0.019 (0.014)	0.046*** (0.012)	0.015 (0.014)	0.041*** (0.012)
% Short-term Investors	0.538*** (0.066)	0.381*** (0.057)	0.477*** (0.067)	0.368*** (0.057)				
Cut × Churn					3.586*** (0.793)	3.459*** (0.648)	3.561*** (0.785)	3.397*** (0.648)
Churn					2.071*** (0.432)	0.629* (0.368)	1.860*** (0.432)	0.617* (0.370)
% Institutional Investors	-0.257*** (0.029)	-0.166*** (0.031)	-0.192*** (0.034)	-0.227*** (0.033)	-0.330*** (0.046)	-0.109** (0.043)	-0.261*** (0.049)	-0.176*** (0.044)
Cut × % Institutional Investors	-0.149*** (0.042)	-0.172*** (0.034)	-0.141*** (0.041)	-0.164*** (0.034)	-0.347*** (0.074)	-0.358*** (0.059)	-0.336*** (0.074)	-0.346*** (0.059)
Size			-0.016*** (0.004)	0.040*** (0.007)			-0.013*** (0.004)	0.040*** (0.007)
Leverage			-0.022 (0.017)	-0.103*** (0.021)			-0.015 (0.014)	-0.083*** (0.018)
ROA			0.059*** (0.015)	-0.025 (0.019)			0.045*** (0.014)	-0.018 (0.017)
Observations	25,531	25,220	25,261	24,955	28,301	27,986	27,960	27,656
R-squared	0.262	0.542	0.269	0.546	0.247	0.529	0.253	0.531
Firm FE	NO	YES	NO	YES	NO	YES	NO	YES
Industry FE	YES	NO	YES	NO	YES	NO	YES	NO
Year FE	YES	YES	YES	YES	YES	YES	YES	YES

Table 4 continued.

Panel D: Advertising Growth

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Cut × % Short-term Investors	0.212** (0.104)	0.162* (0.093)	0.222** (0.103)	0.158* (0.093)				
Cut	0.006 (0.015)	0.026* (0.013)	0.010 (0.015)	0.025* (0.013)	0.001 (0.013)	0.020* (0.012)	0.005 (0.013)	0.020 (0.012)
% Short-term Investors	0.264*** (0.095)	0.161** (0.071)	0.188** (0.093)	0.158** (0.071)				
Cut × Churn					1.503* (0.836)	0.915 (0.640)	1.475* (0.803)	0.935 (0.641)
Churn					1.639** (0.640)	0.624 (0.462)	1.367** (0.623)	0.614 (0.465)
% Institutional Investors	-0.099** (0.040)	-0.102** (0.041)	-0.004 (0.044)	-0.104** (0.042)	-0.178*** (0.064)	-0.100* (0.056)	-0.076 (0.065)	-0.096* (0.057)
Cut × % Institutional Investors	-0.105** (0.044)	-0.096*** (0.037)	-0.109** (0.044)	-0.093** (0.037)	-0.159** (0.080)	-0.124** (0.060)	-0.161** (0.077)	-0.125** (0.061)
Size			-0.011** (0.005)	0.004 (0.008)			-0.010** (0.005)	-0.001 (0.008)
Leverage			-0.064*** (0.019)	-0.004 (0.018)			-0.045*** (0.016)	0.009 (0.016)
ROA			-0.085*** (0.016)	0.026* (0.014)			-0.079*** (0.014)	0.032*** (0.012)
Observations	25,531	25,220	25,261	24,955	28,301	27,986	27,960	27,656
R-squared	0.086	0.516	0.094	0.517	0.082	0.497	0.090	0.498
Firm FE	NO	YES	NO	YES	NO	YES	NO	YES
Industry FE	YES	NO	YES	NO	YES	NO	YES	NO
Year FE	YES	YES	YES	YES	YES	YES	YES	YES

Table 4 continued.

Panel E: Product Differentiation

	(1)	(2)	(3)	(4)
Cut × % Short-term Investors	-0.129** (0.045)	-0.124** (0.048)		
Cut	0.019 (0.015)	0.018 (0.015)	0.023 (0.015)	0.022 (0.016)
% Short-term Investors	-0.025 (0.035)	-0.034 (0.036)		
Cut × Churn			-0.539** (0.234)	-0.534** (0.242)
Churn			-0.394* (0.217)	-0.442* (0.219)
% Institutional Investors	-0.013 (0.025)	-0.021 (0.027)	0.019 (0.046)	0.014 (0.042)
Size		0.006 (0.008)		0.005 (0.009)
Leverage		-0.004 (0.013)		-0.001 (0.011)
ROA		0.018 (0.029)		0.024 (0.029)
Observations	14,256	14,207	14,630	14,579
R-squared	0.064	0.064	0.058	0.059
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Table 4 continued.**Panel F: Executive Turnover**

	(1)	(2)
Cut × % Short-term Investors	0.104** (0.043)	
Cut	0.012 (0.014)	0.010 (0.014)
% Short-term Investors	0.032 (0.026)	
Cut × Churn		0.637* (0.356)
Churn		0.077 (0.158)
% Institutional Investors	-0.005 (0.014)	-0.005 (0.019)
Cut × % Institutional Investors	-0.032 (0.025)	-0.054 (0.035)
Leverage	0.008 (0.018)	0.009 (0.015)
ROA	-0.120*** (0.032)	-0.117*** (0.033)
Size	-0.004 (0.003)	-0.004 (0.003)
# of Executives	0.036*** (0.001)	0.036*** (0.001)
Observations	8,183	8,224
R-squared	0.088	0.087
Year FE	YES	YES

Table 5: Robustness

The dependent variable is indicated on top of each column. In Panel A, “Cut (t-1)” is the variable “Cut” lagged by one year. In Panel B, “% Short-term Investors (t-4)” is the variable “% Short-term Investors” lagged by four years. Standard errors are clustered at the firm level and are reported in parentheses. All models include a constant, and fixed effects as described in the table whose coefficients are not reported. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Placebo Tests

Dependent Variable	Sales	Asset	Employment	PPE
	Growth	Growth	Growth	Growth
	(1)	(2)	(3)	(4)
Cut (t-1) × % Short-term Investors	0.017 (0.058)	0.076 (0.051)	0.002 (0.055)	0.051 (0.047)
Cut (t-1)	-0.007 (0.008)	-0.022*** (0.007)	-0.006 (0.008)	-0.003 (0.006)
% Short-term Investors	0.313*** (0.049)	0.403*** (0.044)	0.302*** (0.044)	0.445*** (0.041)
% Institutional Investors	0.001 (0.013)	0.012 (0.011)	0.006 (0.011)	0.015 (0.009)
Cut × % Institutional Investors	-0.177*** (0.025)	-0.233*** (0.023)	-0.088*** (0.026)	-0.109*** (0.021)
Observations	22,897	22,897	22,897	22,897
R-squared	0.274	0.241	0.333	0.288
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Table 5 continued.

Panel B: Endogeneity of Institutional Ownership

Dependent Variable	Sales Growth	Asset Growth	Employment Growth	PPE Growth
	(1)	(2)	(3)	(4)
Cut × % Short-term Investors (t-4)	0.237** (0.095)	0.217** (0.102)	0.166* (0.086)	0.217*** (0.079)
Cut	-0.003 (0.012)	-0.023** (0.011)	-0.005 (0.012)	0.006 (0.010)
% Short-term Investors (t-4)	0.015 (0.051)	-0.094* (0.050)	-0.017 (0.050)	-0.042 (0.042)
% Institutional Investors (t-4)	-0.072*** (0.024)	-0.093*** (0.025)	-0.081*** (0.029)	-0.109*** (0.022)
Cut × % Institutional Investors (t-4)	-0.033 (0.031)	0.006 (0.031)	-0.016 (0.031)	-0.048* (0.026)
Observations	16,168	16,168	16,168	16,168
R-squared	0.258	0.224	0.305	0.259
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Table 6: Exit Analysis

The dependent variable is “Death” for columns (1)-(6) and “Exit” for columns (7)-(12). “Death” is a dummy variable equal to one if in a given year a firm experiences a liquidation (CRSP delisting codes 400-490), is dropped (500-591), or expires (600-610), and zero otherwise. “Exit” is a dummy variable equal to one if in a given year a firm experiences a merger (CRSP delisting codes 200-290), an exchange (300-390), a liquidation (CRSP delisting codes 400-490), is dropped (500-591), or expires (600-610), and zero otherwise. Standard errors are clustered at the firm level and are reported in parentheses. All models include a constant, and fixed effects as described in the table whose coefficients are not reported. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable	Death						Exit					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Post Cut × % Short-term Investors	-0.006 (0.006)	-0.004 (0.006)	-0.001 (0.010)				-0.009 (0.012)	-0.003 (0.012)	0.014 (0.020)			
Post Cut	0.003** (0.001)	0.003*** (0.001)	0.007*** (0.002)	0.005*** (0.001)	0.005*** (0.001)	0.009*** (0.002)	0.008*** (0.002)	0.010*** (0.002)	0.018*** (0.004)	0.008** (0.003)	0.021*** (0.005)	0.023*** (0.005)
% Short-term Investors	0.001 (0.004)	0.004 (0.004)	0.000 (0.005)				-0.018** (0.009)	-0.001 (0.009)	0.001 (0.011)			
Post Cut × Churn				-0.067*** (0.024)	-0.062** (0.024)	-0.082* (0.046)				0.034 (0.066)	0.064 (0.121)	0.185 (0.124)
Churn				-0.016 (0.027)	0.003 (0.027)	-0.023 (0.036)				-0.427*** (0.075)	-0.424*** (0.084)	-0.015 (0.090)
% Institutional Investors	-0.007** (0.003)	-0.005* (0.003)	-0.008** (0.004)	-0.000 (0.004)	-0.000 (0.004)	0.001 (0.005)	-0.032*** (0.007)	-0.023*** (0.007)	-0.031*** (0.009)	-0.062*** (0.012)	-0.074*** (0.014)	-0.067*** (0.014)
Post Cut × % Institutional Investors		-0.006** (0.002)	-0.003 (0.003)		-0.004 (0.003)	-0.002 (0.004)		-0.025*** (0.006)	-0.030*** (0.009)			-0.072*** (0.013)
Leverage	0.027*** (0.005)	0.027*** (0.005)	0.027*** (0.006)	0.025*** (0.005)	0.025*** (0.005)	0.023*** (0.006)	0.095*** (0.014)	0.094*** (0.014)	0.097*** (0.015)	0.128*** (0.014)	0.131*** (0.015)	0.127*** (0.015)
ROA	-0.022*** (0.005)	-0.023*** (0.005)	-0.021*** (0.005)	-0.028*** (0.006)	-0.028*** (0.006)	-0.028*** (0.005)	-0.015 (0.009)	-0.016* (0.009)	-0.014 (0.009)	-0.008 (0.010)	-0.007 (0.009)	-0.008 (0.009)
Observations	23,324	23,324	22,747	26,638	26,607	26,084	23,324	23,324	22,747	26,638	26,117	26,084
R-squared	0.205	0.205	0.289	0.164	0.163	0.249	0.508	0.509	0.559	0.616	0.660	0.658
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	NO	YES	YES	NO	YES	YES	NO	YES	YES	NO
Industry × Year FE	NO	NO	YES	NO	NO	YES	NO	NO	YES	NO	NO	YES

Table 7: Short-term Ownership Following Large Tariff Cuts

This table shows how short-term ownership varies in the years following large tariff cuts. In columns (1)-(3), the dependent variable is the fraction of short-term investors of a sample firm at year $t + 1$. In columns (4)-(6), the dependent variable is “Churn” of a sample firm at year $t + 1$. All models include a constant and firm and year fixed effects as described in the table whose coefficients are not reported. Standard errors are clustered at the firm level and are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	% Short-term Investors (t+1)			Churn (t+1)		
	(1)	(2)	(3)	(4)	(5)	(6)
Post Cut	0.008** (0.004)	0.004 (0.003)	0.003 (0.003)	0.002*** (0.001)	0.001 (0.001)	0.001 (0.001)
% Institutional Investors		0.095*** (0.007)	0.094*** (0.006)		0.044*** (0.001)	0.044*** (0.001)
Leverage			0.008** (0.004)			0.000 (0.001)
ROA			0.031*** (0.003)			0.006*** (0.001)
Observations	19,725	19,711	19,561	21,302	21,268	21,082
R-squared	0.638	0.652	0.656	0.787	0.826	0.830
Firm FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES

Table 8: Considering Alternative Mechanisms (Cash Holdings)

This table reports the baseline regression tests of Table 2 with additional controls for corporate cash holdings. All models include a constant, and fixed effects as described in the table whose coefficients are not reported. Standard errors are clustered at the firm level and are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable	Sales Growth	Asset Growth	Employment Growth	PPE Growth
	(1)	(2)	(3)	(4)
Cut × % Short-term Investors	0.439*** (0.087)	0.458*** (0.085)	0.434*** (0.085)	0.454*** (0.075)
Cut	0.009 (0.013)	-0.013 (0.013)	0.004 (0.013)	0.003 (0.012)
% Short-term Investors	0.311*** (0.056)	0.327*** (0.049)	0.304*** (0.052)	0.455*** (0.048)
% Institutional Investors	-0.312*** (0.028)	-0.356*** (0.026)	-0.253*** (0.030)	-0.250*** (0.025)
Cut × % Institutional Investors	-0.172*** (0.031)	-0.136*** (0.030)	-0.177*** (0.032)	-0.176*** (0.028)
Cash	-0.046 (0.032)	0.276*** (0.030)	-0.009 (0.030)	-0.073*** (0.027)
Cut × Cash	0.066* (0.040)	0.098*** (0.032)	0.118*** (0.032)	0.132*** (0.027)
ROA	0.194*** (0.019)	0.438*** (0.021)	0.144*** (0.017)	0.120*** (0.014)
Observations	25,005	25,005	25,005	25,005
R-squared	0.303	0.345	0.333	0.330
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Table 9: A Different Shock to the Economic Environment: Deregulation

This table reports regression results for industry deregulation events. The dependent variable is changes in market share in columns (1) and (2), asset growth in columns (3) and (4), and the Tobin's Q in columns (5) and (6). All models include a constant, and fixed effects as described in the table whose coefficients are not reported. Industry is a firm's four-digit SIC codes. Standard errors are clustered at the firm level and are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable	Sales Growth		Asset Growth		Tobin's Q	
	(1)	(2)	(3)	(4)	(5)	(6)
Deregulation × % Short-term Investors	1.133*** (0.392)		0.799** (0.386)			
Post Deregulation × % Short-term Investors					1.504*** (0.493)	
Deregulation	0.016 (0.031)	0.054* (0.028)	0.027 (0.029)	0.059** (0.027)		
Post Deregulation					-0.227*** (0.074)	-0.153** (0.065)
% Short-term Investors	0.410*** (0.083)		0.444*** (0.079)		0.579*** (0.148)	
Deregulation × Churn		7.614*** (2.449)		5.911** (2.419)		
Post Deregulation × Churn						6.760** (2.821)
Churn		0.579 (0.409)		0.376 (0.507)		1.622*** (0.608)
% Institutional Investors	-0.223*** (0.042)	-0.151*** (0.053)	-0.227*** (0.038)	-0.122** (0.059)	-0.290*** (0.075)	-0.233*** (0.088)
Deregulation × % Institutional Investors	-0.248** (0.122)	-0.673*** (0.216)	-0.277** (0.118)	-0.641*** (0.210)	-0.123 (0.153)	-0.401 (0.250)
ROA	0.324*** (0.040)	0.307*** (0.039)	0.627*** (0.038)	0.596*** (0.035)	0.331*** (0.079)	0.234*** (0.064)
Leverage					0.428*** (0.081)	0.435*** (0.070)
Observations	10,289	11,343	10,289	11,343	11,345	12,478
R-squared	0.324	0.318	0.326	0.320	0.645	0.654
Firm FE	YES	YES	YES	YES	YES	YES

Dependent Variable	Sales Growth		Asset Growth		Tobin's Q	
	(1)	(2)	(3)	(4)	(5)	(6)
Year FE	YES	YES	YES	YES	YES	YES
Industry × Year FE	NO	NO	NO	NO	YES	YES