Adapting to Radical Change:
The Benefits of Short-Horizon Investors*

Mariassunta Giannetti
Stockholm School of Economics, CEPR, and ECGI
Mariassunta.Giannetti@hhs.se

Xiaoyun Yu
Department of Finance, Kelley School of Business
Indiana University
xiyu@indiana.edu

January 2019

We show that following shocks that change an industry's economic environment, firms with more short-term institutional investors suffer smaller drops in sales, investment and employment and have better long-term performance than similar firms affected by the shocks. To do so, these firms increase advertising, differentiate their products from those of the competitors, conduct more diversifying acquisitions, and have higher executive turnover in the aftermath of the shocks. Our findings suggest that firms with more short-term investors adapt better to the new competitive environment. Endogeneity of institutional ownership and other selection problems do not appear to drive our findings.

Keywords: Short-termism, investor horizons, tariff cuts, deregulation
JEL Codes: G3, G23, F1

*We thank Kee-Hong Bae, Mike Burkart, Sudipto Dasgupta, Alex Edmans, Miguel Ferreira (discussant), Slava Fos, Paolo Fulghieri, Todd Gormley (discussant), Jungsuk Han, Dalida Kadyrzhanova, Leonard Kostovetsky (discussant), Yelena Larkin (discussant), Christian Leuz, Si Li (discussant), Michelle Lowry, Ron Masulis (discussant), Ernst Maug, Will Mullins, Gordon Phillips, Francesco Sangiorgi, Jin Xu (discussant), Mike Weisbach (discussant), Jing (Zizi) Zeng, Luigi Zingales (discussant), and participants at the American Finance Association annual meeting, the Rising Stars Conference at Fordham University, Tel Aviv University Finance Conference, the Bar Ilan and Hebrew University Conference on Institutional Investor Activism and Engagement, the CEPR First Annual Spring Symposium in Financial Economics at Imperial College, the Global Corporate Governance Colloquia at the University of Tokyo, NHH Corporate Finance Conference, the China International Conference in Finance, the EFMA "Merton H. Miller" *Keynote Lecture,* the Conference on Financial Economics & Accounting, University of Mannheim, Georgia State University, Indiana University, Nova-BPI Corporate Finance Conference, Schulich School of Business at York University, Singapore Management University, and University of Delaware for valuable comments. We thank Alex Edmans, Vivian Fang, and Emanuel Zur for generously sharing the 13D filing data. Giannetti acknowledges financial support from the Jan Wallander and Tom Hedelius Foundation. Xiaoyun Yu acknowledges financial support from the Arthur M. Weimer Fellowship.

All this is not to say that we should start chanting: "Short-term good, long-term bad".

Rather, it is an argument for nuance.

The Tyranny of the Long-Term, The Economist, November 22, 2014

A long-standing view in corporate governance is that frenetic trading in public stock markets leads corporations to maximize short-term stock valuations instead of focusing on long-term profit maximization (Kay, 2012). While this is a recurrent narrative in academic and policy circles, it is often challenged (Roe, 2017; Kaplan, 2018).

Theoretically, short-term pressure may prompt companies to maximize shareholder value instead of allowing managers to "enjoy the quite life" (Gryglewicz, Mayer, and Morellec, 2018). This is possible even though in some instances the pressure faced by corporate leaders may lead them to pursue short-term objectives at the expense of the long-run (Graham, Harvey, and Rajgopal, 2005).

This paper explores whether there is any evidence that short-term pressure by public markets may help improving firm performance. As is common in the literature (e.g., Bushee, 1998), we exploit cross-sectional differences in trading pressure using institutional shareholders' trading horizons. We argue that pressure on managers to maximize shareholder value and gain comparative advantage is particularly important when competition intensifies, new technologies arrive, or regulation changes. Whether firms succumb or thrive when industry shakeouts occur depends on how fast they adjust and reinvent their business model.

We conjecture that the threat of short-horizon investors' hasty selloffs at the first sign of underperformance may spur firms to rapidly adjust in the aftermath of shocks that require major strategy overhauls. Short-horizon investors typically hold a firm's stock for short periods of time and focus on short-term returns (Bushee, 2001). Consequently, they count on stock liquidity and the ability to trade with other short-horizon investors to sell their shares.

When they fear weak demand from other market participants and possible price declines in the near future, short-horizon investors' optimal response is to attempt to beat the market by selling swiftly (Bernardo and Welch, 2004). *En mass* selling by short-horizon investors, who are not able to sell to other short-horizon investors, causes large drops in prices (Cella, Ellul, and Giannetti, 2013). Therefore, managers, whose compensation and tenure are sensitive to the stock price, rather avoid selloffs of their firms' stocks and may try harder to adapt to the changed economic environment to avoid the slightest sign of underperformance.

Dedicated investors and other activist investors, who typically hold larger blocks of shares in a company, can also threaten to exit, but would typically do so more slowly to avoid liquidation costs. Thus, short-horizon investors may perform a unique governance role when industry shakeouts occur and adapting quickly may affect a firm's market share and long-term competitive position in the industry.

Whether these mechanisms are relevant and whether firms with short-horizon investors have stronger long-term performance than other firms following industry shakeouts are ultimately empirical questions, which we aim to address in this paper.

To explore how ownership structure affects firms' adjustment to changing economic environments, we base most of the empirical investigation on the effects of large drops in industry-level import tariffs. Since softening trade barriers increases the competitive pressure that foreign rivals exert on domestic manufacturing firms, substantial reductions in import tariffs are considered to be large, plausibly exogenous, shocks (see, for instance, Fresard, 2010; Xu, 2012; Valta, 2012; Dasgupta, Li, and Wang, 2017). While these shocks involve risk of losing domestic market shares, they also provide opportunities for expanding in new markets. Firms may thus have to quickly react to seize the opportunities and to avoid the risks. We test whether firms with disproportionately more short-horizon investors are more

successful in adjusting and, consequently, achieve better long-term performance than other similarly affected firms.

We find that, following the above-mentioned shocks, firms with disproportionately more short-term investors have higher growth of sales and employment in comparison to other domestic firms in the *same* industry, which have been similarly affected by the shocks. These effects appear to be associated with more investment and diversifying acquisitions, which may be necessary to enter new markets. Firms also appear to increase their advertising expenses and to differentiate their products from those of competitors to a greater extent, arguably to limit the effects of intensified competition. The strategic investment theories of Spence (1977) and Dixit (1980) suggest that by investing in fixed capacity, research and development, or advertising campaigns, firms can credibly commit to compete aggressively in the product market. We show that these optimal responses to an increase in competition are enhanced by short-term institutional ownership.

We also show that firms with more short-term institutional investors have higher executive turnover following the shocks. Importantly, these changes translate into long-term improvements in profitability and firm value. Thus, firms with more short-term investors appear to be better at adapting to new environments: instead of "enjoying the quite life" (Bertrand and Mullainathan, 2003), their managers reinvent the firms' business models and choose the industries in which to operate and managerial skills in order to create comparative advantage.

In all of our tests, we study the effect of predetermined short-term institutional ownership conditional on the occurrence of large tariff cuts. Since we control for the direct effect of short-term institutional ownership, we avoid the endogeneity concerns that arise from studying the unconditional effect of ownership on performance. To mitigate concerns that short-horizon investors have selected companies in anticipation of their positive reaction

to the shocks, we perform a battery of robustness tests. First, we show that consistent with the causal mechanism underlying our hypothesis, firms with disproportionately more short-term investors maintain higher growth in sales, employment, and investment following the shocks, especially when their CEOs' wealth is more sensitive to stock price performance, and would therefore be affected particularly negatively by the stock selloff.

Second, our results are invariant if we consider stocks that short-term institutional investors already owned well into the past. Such a test is particularly powerful in our context to exclude reverse causality problems. The typical concern in using lagged ownership is that investors select firms in anticipation of their responses to the shocks. In our context, given the short trading horizons of the institutions we consider, the identity of short-term investors has changed in the time interval (five years) between the measurement of ownership and the occurrence of the shock even though the extent of short-term institutional ownership did not (because short-term institutional owners trade with each other).

While the nature of short-term institutional ownership makes reverse causality unlikely once we sufficiently lag the ownership variables, omitted factors may represent a threat to the identification. While it is never possible to provide a statistical demonstration that omitted factors do not drive the estimates, we perform several types of tests.

First, we exploit exogenous variation in short-term institutional ownership due to decimalization (Bessembinder 2003; Fang, Tian, and Tice 2014). By reducing the minimum tick size and thus increasing liquidity, the 2001 decimalization favored an exogenous increase in short-term institutional ownership especially in large and middle-sized companies. It is therefore comforting that firms whose short-term institutional ownership increased the most

because of decimalization appear to perform better after the shocks also in our instrumental variable estimates.[1]

Second, we consider virtually all possible alternative mechanisms that may lead to a correlation between short-term institutional ownership and performance following tariff cuts. In particular, we show that differences in firms' reactions are not driven by omitted firm characteristics potentially correlated with short-term institutional ownership, such as activist campaigns, family ownership, size, cash holdings, leverage, ownership concentration, corporate governance, or differential exit rates. All these tests corroborate the causal interpretation of our findings.

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 greater presence of short-horizon investors adjust faster to the new environment, achieving higher growth of sales, fixed assets, and employment, and performing better than competitors.

Our results suggest that investors' short horizons foster firm performance when economic environments change radically. Under these circumstances, firms and economies with disproportionately more short-term investors may appear more dynamic and avoid stagnation, indicating that short-horizon investors perform an important function in the economy.

This paper belongs to a growing literature exploring the effects of institutional ownership on firm performance and corporate policies (e.g., Aghion, Van Reenen, and Zingales, 2013). A strand of this literature shows that investor horizon affects corporate policies. Consistent with theories showing that short investor horizons may lead to

[1] Results are qualitatively invariant if we exploit other sources of short-term institutional ownership such as index inclusions.

managerial myopia (Stein 1989), Bushee (1998), Bushee and Noe (2000) and Bushee (2001) find that short-term investment may be valued more in firms whose shareholders have short horizons. Firms with more short-horizon investors also fare worse in takeovers (Gaspar, Massa, and Matos, 2005; Chen, Harford, and Li, 2007). By contrast, long-term institutional investors appear to improve corporate governance by limiting over-investment (Harford, Kecskes, and Mansi, 2018).

All these papers provide evidence that long-term investors influence managers to pursue corporate policies that enhance firm value when the economic environment is static. Theoretically, however, ownership structures with higher tolerance for failure in the short-term (less selloffs in our context) may lead to inefficient long-termism (Ferreira, Manso, and Silva, 2012; Gryglewicz, Mayer, and Morellec, 2018). Investor short-termism could ameliorate managerial incentives and limit extraction of private benefits or managerial preference for a quiet life (e.g., Fos and Kahn, 2015; Thakor, 2015).

To the best of our knowledge, ours is the first empirical paper to highlight a benefit of short-term investors and to document a case of efficient short-termism. We are agnostic on the effect of short-term ownership during normal times. However, we note that our results can be fully consistent with negative effects of short-term ownership in some states of the world because the benefits we highlight exist conditionally on large changes in competitive environment.

The rest of the paper is organized as follows. Section 1 provides 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 and Relation to Existing Literature

We consider the governance roles of diversified investors with high portfolio turnover, that is, of short-horizon institutional investors. Firms that cater to short-horizon investors tend to produce more short-term information (Boone and White, 2015; Glaeser, Michels, and Verrecchia, 2017). As a consequence, these firms may have nimble and adaptable decision-making processes that make them more adaptable to changes in economic environment. One may view this paper as a test of this simple organizational behavior story.

The pressure created by the exit threat of short-horizon investors may also spur firms to rapidly adjust in the aftermath of shocks that require major strategy overhauls. Short-term horizon investors differ from other institutional investors because they hold stocks for short periods of time: they focus on short-term returns and sell at the first sign of underperformance (Bushee, 2001; Hotchkiss and Strickland, 2003; Cella, Ellul, and Giannetti, 2013). Consequently, short-horizon investors count on stock liquidity and the ability to trade with each other to liquidate their shareholdings. When they fear weak demand from other market participants and possible price declines, short-horizon investors are expected to sell all together (Bernardo and Welch 2004) without being able to trade with other short-term investors as in normal times. Not selling right away may involve selling behind the rest of the market at even lower prices.

In contrast, dedicated investors and other activist investors typically hold larger blocks of shares in a company. While they can also threaten to exit, they tend to do so more slowly to avoid liquidation costs. High-capital gains also tend to increase the costs of exiting for funds with long holding periods, effectively locking them in (Dimmock et al., 2018). In addition, a large part of long-term investors are passive investors, who have to follow an index and are therefore unable to exit.

Even if long-term investors can spur changes in the firms they own through investor activism and behind the scene changes, their efforts (including their threats of exit in case of no compliance) are known to require significant amount of time to be successful (Brav et al., 2008; Becht et al., 2009). A slower pace of change is a handicap when market shares and industry leadership are at stake. We propose that short-term investors' threat of swift selloffs is beneficial for shareholder value when changes in competitive environment require fast reactions. This is because managers' compensation and jobs depend on the firm's stock price performance; the threat of a swift selloff pressures managers to overcome their tendency to enjoy the quite life (Bertrand and Mullainathan, 2003) and enact fast changes in corporate policies, which are necessary to maintain competitive advantage.

Thus, thanks to their propensity to financial market runs, short-term investors unwittingly affect managerial policies of firms in which many of them hold shares in a way that longer horizon investors are unable to. Importantly, short-horizon investors' threat of exit may successfully discipline managers even if we do not typically observe actual selloffs (Fos and Kahn, 2015).

In summary, we propose that when industries experience shakeouts and the speed of adjustment determines a firm's long-term position in its industry, the pressure associated with short-horizon investors' threat of rushing to exit may translate into competitive advantage. The mechanism we propose complements existing literature that highlights the positive value effects of institutional blockholders without considering the role of large changes in economic environment (Bharath, Jayaraman, and Nagar, 2013; Edmans, Fang, and Zur, 2013). Blockholders can also threaten to exit, but their exits presumably occur at slower pace (Admati and Pfleiderer, 2009; Edmans, 2009) due to high liquidation costs associated with their large stakes. Thus, blockholders' threats may not help preserving a firm's competitive advantage if the speed of adjustment is important.

Note that unlike the blockholders in Edmans and Manso (2011), short-horizon investors not holding large blocks may have little information on the internal working of the firms they own. It is thus plausible that their exit threat may lead to efficient or inefficient short-termism, depending on the state of the world.

2. Methodology

2.1 Reduction of Import Tariffs

Large changes in tariffs represent large shocks to an industry competitive environment. Firms risk losing market shares to foreign firms, but given that there is typically reciprocity in tariff cuts, they also have opportunities to expand into foreign markets. In sum, these events constitute large industry shakeouts to which firms have to adapt. By changing their strategies, differentiating their products, and innovating, domestic firms may weather competition from foreign firms (Bloom, Draca, and Van Reenen, 2016) and expand to new markets. Firms that are more inclined and faster in implementing strategic changes may be more successful in maintaining market share and establishing themselves as industry leaders. In this way, they may attain better long-term performance than other domestic firms in same industry.

We explore how firms in an industry are affected by trade shocks depending on their ownership structure. Following Fresard (2010), Xu (2012), Valta (2012), and Dasgupta, Li, and Wang (2017), we measure large changes in import competition using large reductions of import tariff rates. These shocks are not under direct control of domestic firms and have been widely used in the literature to capture large exogenous changes in competition.

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 (Feenstra, 1996). 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.

As is common in the literature (e.g., Fresard, 2010; Valta, 2012), 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. Out of the 556 four-digit SIC industries in our sample, 501 are affected at least once by a large tariff cut. Out of 13,327 industry-years, 4,670 are affected by a large tariff cut.

On average, these tariff cuts have negative effects on the affected industries: In our sample, during the five years after the large tariff cuts, the sales of the median firm in the affected industries drop by 15% per year in comparison to the average sales growth of firms in unaffected industries. Similarly, the employment of the median firm in the industry drops by nearly 20% per year. Arguably, as a consequence, nearly 1% of the affected firms are delisted, bankrupt, or acquired. There is however large variation in performance between firms in an industry, with some firms achieving positive sales growth and employment. It is our objective to explore how this cross-sectional variation is related to short-term institutional ownership.

While the way in which we measure import tariff cuts allows us to capture actual increases in competition, it does not take into account that treaties may have been signed in advance. One may wonder whether some firms had already taken steps to adapt to the new competitive environment before the large tariff cuts. In Subsection 4.4, we find no evidence of differential behavior 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 et al., 2012). This may lead firms to wait for the actual entry of competitors. This conjecture is consistent with the

findings of Bloom, Draca, and Van Reenen (2016) showing that firms increase innovation following actual import penetration.

2.2 Empirical Framework

We explore the impact of trade shocks on firms' contemporaneous changes in sales, employment and capital expenditures with the objective of testing how *ex ante* differences in short-term institutional ownership lead to differential responses of domestic producers.[2] Our tests share the spirit of the difference-in-difference methodology, but the treatment is a continuous measure of short-term institutional ownership. Our main tests are based on the following empirical model:

$$g_{f,i,t+1} = \alpha_0 + \alpha_1 cut_{i,t} \times short\ term\ IO_{f,i,-1} + \alpha_2\ cut_{i,t} +$$

$$\alpha_3 short\ term\ IO_{f,i,t-1} + \boldsymbol{A_4 X_{f,i,t}} + \varepsilon_{f,i,t} \quad (1)$$

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, $\boldsymbol{X_{f,i,t}}$, may include firm and year fixed effects, interactions of industry 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 and is our main variable of interest.

It is also important to explore the effects of trade shocks and ownership structure on firms' long-term performance because, as highlighted in the existing literature (e.g., Graham,

[2] Fresard (2010), Xu (2012), Valta (2012) and Dasgupta, Li, and Wang (2017) also study the contemporaneous effect of large tariff cuts.

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:

$$y_{f,i,t+1} = \beta_0 + \beta_1 post\ cut_{i,t} \times short\ term\ IO_{f,i,year\ before\ cut} + \beta_2 post\ cut_{i,t} + \beta_3 short\ term\ IO_{f,i,year\ before\ cut} + \boldsymbol{B_4 X_{f,i,t}} + \varepsilon_{f,i,t} \quad (2)$$

The main difference between Model (1) and Model (2) is that the dummy $post\ cut_{i,t}$ aims to capture a lasting effect and takes value equal to one following the first tariff rate cut in industry i.[3] 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 the impact of the shocks on firms' sales growth, employment, and investment, whereas Model (2) explores firms' long-term performance, as captured by the market-to-book ratio and profitability.

A potential concern is that tariff cuts affect industries with different dynamics. In our context, however, endogeneity problems arising from potential industry-level omitted factors are addressed by considering heterogeneity in performance of firms *within* the same industry. Furthermore, our control sample also includes firms with different investor horizons that are not subject to shocks. Therefore, the direct effect of the percentage of short-term ownership captures (and controls for) the investors' ability to select better companies, as long as short-term institutional investors do not have differential abilities in selecting firms when large tariff cuts occur.

This identification assumption is unlikely to be too restrictive, as firms are subject to a multitude of shocks other than tariff cuts and the direct effect of short-term institutional ownership should largely control for short-term investors' ability to select firms when shocks occur. Nevertheless, in Subsection 4.4, we provide evidence that our results are invariant when we exploit exogenous variation in short-term institutional ownership. In addition, we

[3] Results are qualitatively similar if we consider the $post\ cut$ dummy to be equal to 1 during the five years following a tariff cut.

provide direct evidence on the validity of our identification assumption in a number of robustness tests.

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 COMPUSTAT and CRSP. 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. We consider only industries for which the U.S. Customs collects duties, which implies that our sample concentrates on firms whose primary SIC code is in manufacturing (< 4000).[4]

We obtain mergers and acquisitions activities (M&As) from SDC Platinum and use EXECUCOMP to explore whether firms with more short-term investors adapt to changing market conditions by turning over their executive team. Other data sources are described as we introduce them in the analysis.

Since we collect information on tariff rate cuts up to 2011, our final sample period is 1981-2011. Panel A of Table 1 summarizes the main variables, such as firms' sales growth, growth rate of gross property, plant, and equipment (PPE), and employment growth rate, Tobin's Q, and ROA. All variable definitions and data sources are presented in the appendix.

3.2 Measuring Investor Horizon

An investor's horizon is generally considered an exogenous characteristic of the investor's trading style, which does not change (or changes slowly) over time. Investors'

[4] The sample in which we explore deregulation shocks in Section 5 relies on service industries and includes utilities.

trading horizons are revealed 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 a firm, 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; 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. We define the extent of short-term institutional ownership of a firm, *% Short-term Investors*, as the proportion of shares outstanding held by transient investors during the year preceding the tariff rate cut.

We also compute an alternative proxy for institutional investors' horizon—*Churn*—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. As Cella, Ellul, and Giannetti (2013) report, there is large variation in turnover across 13F institutional investors. Institutions with a churn ratio in the 5th percentile on average turn over about 2% of their portfolio in a quarter, while institutions in the 95th percentile turn over more than 70% of their holdings in a quarter.

Next, to obtain a firm's yearly measure of short-term institutional ownership, we take a weighted average of the portfolio turnover of institutional investors in a firm, using as weight the proportion of shares outstanding held by investor j at the end of year t. This definition implicitly assumes that non-institutional investors in a firm generate less turnover.

Since we control for the proportion of share outstanding held by institutional investors, this assumption is innocuous.

The proportion of short-term institutional owners of a firm is on average 10%, but there is large variation across firms. While the short-term investors holding stocks in a firm change quickly, the extent to which a firm attracts short-term institutional investors is stable over time because short-term investors trade with each other. In our sample, the correlation between the proportion of short-term investors holding stocks in a firm over the current year and during the previous year exceeds 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 sample firms with different levels of short-term 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, even though statistically different, are not necessarily economically different between the two subsamples.

4. Main Results

4.1 Reactions to Large Tariff Cuts

Table 2 explores the impact of the large tariff cuts on firms' sales growth, and the firms' reactions in terms of PPE and employment growth. Panel A shows that on average, there is a drop in the growth rate of firm sales after large tariff rates cuts. However, the sales of firms with *ex ante* larger proportion of short-term investors drop to a lower extent and even increase for firms with short-term institutional ownership above the average. This suggests that some firms succumb to competition while others seize the opportunities by

stealing market shares from their domestic competitors and by expanding into foreign markets.

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 sales are 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 or interactions of industry and year fixed effects, indicating that time-invariant firm characteristics or industry-specific shocks cannot drive our results.

Our finding is not only statistically, but also economically significant. The coefficient estimate in column 4 of Table 2 implies that following a large tariff cut, a firm with one standard deviation larger proportion of short-term institutional ownership has a drop of sales nearly 2.3 percentage points smaller than that of an otherwise similar firm. This is a large effect considering that the average firm in the sample has a growth rate of 9%. The effect is even larger in column 6, where 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 a one-standard-deviation larger *Churn* has a sales growth drop almost 5 percentage points smaller than that of an otherwise similar firm.

In Panels B and C of Table 2, following import tariff cuts, firms with more short-term institutional investors have higher growth rates of employment and gross PPE than other firms affected by the large tariff cut. Firms with disproportionately more short-term investors appear to be able to seize the opportunities provided by the industry shakeouts as they downsize less than other firms. This behavior is consistent with theories of strategic investment suggesting that increasing capacity, rather than downsizing, is indeed an optimal

response to an increase in competition for profit-maximizing firms (Spence, 1977; Dixit, 1980).

The effects are not only statistically, but also economically significant. In column 4 of Panel B, a one-standard-deviation increase in the percentage of short-term institutional ownership corresponds to a 2 percentage point smaller drop in employment, a large number considering that the employment growth of the average firm in the sample is 3.6%.

Some of the control variables provide interesting insights. Institutional ownership is negatively related to sales, PPE, and employment growth on average and to an even greater extent, after the tariff cuts. This is consistent with the findings of Harford, Kecskes, and Mansi (2018) that long-term institutional investors benefit firms by decreasing over-investment problems. It is thus unsurprising that holding constant short-term institutional ownership, firms that differ in the extent of long-term institutional ownership grow less. While this may be desirable in normal times, as Harford, Kecskes, and Mansi (2018) argue, the empirical evidence we provide thereafter implies that lower investment hamper firms' long-term performance following changes in economic environment.

Table 3 aims to provide more direct evidence on the causal mechanism behind our hypothesis. The reason why managers are expected to respond to short-horizon investors' threat of exit following poor performance is that their payoffs are affected by the stock price. We would expect CEOs whose compensation and wealth are more closely linked to the stock price to pay more effort in avoiding *en masse* exits of short-term investors. We thus test whether following the tariff cuts, the responses of firms with short-term investors are stronger when the CEO has a high wealth-performance sensitivity.

To measure the wealth-performance sensitivity, we use the dollar change in CEO wealth for a 100 percentage-point change in firm value, divided by the annual flow compensation, from Edmans, Landier, and Gabaix (2009). The key advantage of this

incentive measure is that, empirically, it is independent of firm size, and thus comparable across firms and over time. In Table 3, we define a firm to have high wealth-performance sensitivity if the wealth-performance sensitivity is in the top tercile of the sample. As is consistent with the causal mechanism behind our hypothesis, firms with more short-term institutional ownership, in which CEOs' have higher wealth-performance sensitivity, have lower sales drops and cut investment and employment to a lower extent following the tariff cuts.

4.2 Long-Term Effects

Managers subject to short-term investors' pressure may take actions that improve firm performance in the short run at the cost of long-term performance (Graham, Harvey, and Rajgopal, 2005). One may wonder whether firms also do so in response to an increase competition. To address this question, we explore the long-term effects of short-term institutional ownership on firms in industries affected by large tariff cuts using Model (2) in Subsection 2.2. As explained there, in these tests, the dummy $post\ cut_{i,t}$ takes value one following a tariff cut in an industry.

In Panel A of Table 4, large tariff cuts lead to large drops in firms' valuations. However, firms with more short-term institutional ownership still have relatively higher valuations than other firms in the same industry after the tariff cut. After the tariff cut, these firms also continue to have higher profitability (Panel B). The effects are economically sizable. For instance, in column 4 of Panel A and column 10 of Panel B, a one-standard-deviation increase in short-term institutional ownership translates into 14.8 percentage points higher Tobin's Q and 2.7 points higher ROA. The results are invariant whether we include firm and year fixed effects or interactions of industry and year fixed effects. This indicates

that the higher growth rates of sales, PPE, and employment following the large tariff cuts have long-term benefits for shareholders.

Importantly, we find evidence of better long-term performance of firms with disproportionately more short-horizon institutional investors following large tariff cuts even if we control for differences in risk exposure. To do so, we build equally weighted portfolios of firms that have experienced large tariff cuts. We buy (short) firms with short-term institutional ownership above (below) the median in June of the year of the tariff cuts and hold each firm for five years. We estimate abnormal performance (alpha) controlling for exposure to the three Fama-French factors using weighted least squares with weights that account for the fact that monthly returns are more precisely estimated when more industries enter the respective portfolios (see Malmendier, Opp, and Saidi, 2016). Although both portfolios experience negative abnormal returns, confirming that the tariff cuts are not fully anticipated, the portfolio of firms with short-horizon investors above the median outperforms the portfolio of firms with short-term institutional ownership below the median by 0.03% per month, equivalent to almost 0.4% per year. The differences in performance are statistically significant with a *p*-value of 0.012.

This evidence indicates that the ability to maintain market share (captured by the higher sales growth) and the sustained investment of firms with disproportionately more short horizon investors are positively related to long-term shareholder value.

4.3 Mechanisms

In this subsection, we explore how firms with more short-term institutional ownership manage to seize opportunities and to achieve better long-term performance than their competitors following large tariff cuts. We explore differences in a host of corporate policies.

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). Panel A of Table 5 shows that consistent with an attempt of easing competition by enhancing their brand name, firms with more short-term institutional ownership advertise more than other firms in the same industry following tariff cuts.

To capture the extent to which firms are successful at differentiating their products from 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 (2016). Hoberg and Phillips (2016) measure product similarity by parsing the product descriptions of the firms' 10-Ks. Two firms are considered to have less differentiated products if they have greater overlap in the number of words used to describe their product. We compute the average product overlap of a firm with that of all other listed companies in our sample.

Since product similarity is defined as a correlation in product description between a firm and all other COMPUSTAT firms during a year, we allow for time correlation in the dependent variable and double-cluster standard errors at both the firm and time level. Panel B of Table 5 shows that the overlap between the product description of firms with more short-term institutional investors and that of other U.S. listed companies drops, indicating that firms with short-horizon investors are successful at differentiating their product.[5]

Panel C reveals that firms with more short-term institutional ownership do not participate in M&As (column 1) nor restructure through divestitures (column 2) more than

[5] Hoberg and Phillips' data covers the period 1996-2011. For lack of power due to the shorter sample period, we are unable to include the interaction between institutional ownership and the dummy cut.

other firms. Instead, they engage in diversifying acquisitions (columns 3-10). We measure diversifying acquisitions as acquisitions of firms in a different three-digit SIC code from the one of the firm. This suggests that firms with more short-term institutional investors attempt to ease import competition by accessing new markets and reinventing their business model. These findings are consistent with empirical studies suggesting that firms choose the industries in which they operate to create comparative advantage and highlight a situation in which corporate diversification is beneficial to shareholder value (Maksimovic and Phillips, 2013).

Firms with more short-horizon investors may also attempt to adjust to market conditions by turning over the executive team.[6] In Panel D, executive turnover increases to a larger extent in firms with more short-horizon investors in the aftermath of tariff cuts, consistent with these firms' greater efforts in adapting to changes in the competitive environment.

4.4 Robustness

This section presents a number of robustness checks in order to evaluate the merit of alternative interpretations. For brevity, we present the outcome of these robustness tests for sales growth, employment growth, and PPE growth.

4.4.1 Preexisting Differences in Firm Performance

Our estimates allow for a causal interpretation of the empirical evidence as long as firms with greater presence of short-term investors did not behave differently than other firms before the large tariff cuts. To test this identifying assumption, we perform a placebo test. We

[6] Since EXECUCOMP provides information on the executive team only for S&P1500 firms, the sample is greatly reduced. For this reason, we include a smaller set of fixed effects.

test whether firms with more short-horizon investors in industries that will eventually be affected by the tariff cut grow faster already one, two, and three years before the tariff cut.

In Panel A of Table 6, we find no differences in the growth rates of sales and PPE between firms with different levels of short-term institutional ownership before the tariff cuts. We also find that the employment of firms with more short-term investors grow less three years before the tariff cut and then partially recovers two years before. Even for employment, there are no significant differences the year before the tariff cut. Overall, this evidence does not uncover systematic differences in the growth rates of sales, employment and PPE before the tariff cuts and supports our identifying assumption.

4.4.2 Do Short-term Investors Select Better Firms?

While our tests include the direct effect of short-term institutional ownership to control for short-term 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. In this case, reverse causality could undermine our interpretation of the empirical evidence.

Such a criticism has limited relevance in our context. In all our specifications, short-term institutional ownership is measured one year before the tariff cut and tends to capture a firm's propensity to attract short-term institutional investors, which varies little over time, because these investors trade with each other. The identity of the short-term investors, which could have selected some firms based on their expectations of future performance, is likely to have already changed at the time of the tariff cut, considerably limiting any concerns about reverse causality problems. Our results are also robust to the inclusion of firm fixed effects, which absorb any time-invariant firm characteristics.

We also perform several additional tests. First, in Panel B of Table 6, we lag the ownership variables by four years. It is unlikely that tariff cuts, and the firms' ability to cope with competitive pressure, could have been anticipated so far in advance. As mentioned before, this is particularly unlikely in our context because the identity of the short-term investors changes during a five-year period even though the extent to which different firms attract short-term investors does not because short-term investors trade with each other. For this reason, our estimates are unlikely to be biased by selection problems. It is therefore reassuring 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.

Second, we exploit an exogenous increase in short-term institutional ownership.[7] In 2001, the New York Stock Exchange, the American Stock Exchange and NASDAQ terminated the system of fractional pricing and reduced the minimum tick size for quotes and trades to pennies. This regulatory change led to an increase in stock liquidity and short-term institutional ownership (Bessembinder, 2003; Fang, Tian, and Tice, 2014).

To construct instruments, we conjecture that the decimalization may have affected to a larger extent liquidity in large and mid-cap companies, which are more likely to attract institutional trading. To identify large and mid-capitalization companies we sort firms in three terciles based on their stock market capitalization in 2000, the year before the decimalization, and then define as large- (mid-) capitalization stocks in the top (mid) tercile.

Panel A of Table 7 shows that the increase in institutional ownership was particularly pronounced in large and mid-cap stocks, suggesting that liquidity improved to a larger extent

[7] In results we do not report for brevity, our results are robust if we exploit exogenous variation due to Russell 2000 or S&P1500 index inclusions, controlling for the effects of other changes in institutional ownership.

in stocks with these characteristics. The direct effect of the dummy *Decimalization* is absorbed by the time fixed effects. Since we need to instrument both *% Short-term Investors* and *cut* × *% Short-term Investors*, columns 2 and 3 present two first stages. The results of the Cragg-Donald *F* test show that our instruments are not weak. The second stage estimates in Panel B of Table 7 show that our results are unchanged when we exploit exogenous variation in short-term institutional ownership, confirming that reverse causality is unlikely to drive our findings.

Taken together, Tables 6 and 7 indicate that there is no evidence that short-term institutional owners select firms that are expected to perform better following large tariff cuts.

4.4.3 Firm Exit

Selection problems could also arise if firms with more short-horizon investors were more likely to exit the dataset because of bankruptcies, delistings, or acquisitions after large tariff cuts. In this case, the sample of firms with short-horizon investors would be biased towards better firms especially after changes in economic environment.

To evaluate this alternative explanation, we compare the rate of exit either due to bankruptcies and delistings (death) or including also acquisitions (exit) for firms with different short-term institutional ownership.[8] 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 disproportionately more short-horizon investors, suggesting that any selection problems should work against our findings. More importantly, this finding further supports out

[8] Specifically, following Bhattacharya, Borisov, and Yu (2015), we define the death of a firm if its CRSP delisting code indicates a liquidation (400-490), that the firm has been dropped (500-591), or expired (600-610). The exit of a firm also includes mergers (200-290) and exchanges (300-390).

interpretation of the empirical evidence that firms with relatively less short-term institutional investors are less adaptable and succumb when economic shocks occur.

4.4.4 Does Short-Term Institutional Ownership Drop 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.

Table 8 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, though the increase is not significant once we control for firm characteristics (columns 2-3 and 5-6).

4.4.5 Alternative Mechanisms

Endogeneity problems may also arise because firms with higher short-term institutional ownership have unobserved (or uncontrolled) characteristics that drive their differential responses 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 and fixed effects.

In what follows we evaluate possible alternative mechanisms that may drive our findings. Firms' ability to maintain relatively higher sales growth following an increase in competition may depend on cash availability (Fresard, 2010) or on lower leverage. Firms with high cash and/or low leverage may have more resources to increase investment. These factors, rather than a differential reaction due to the presence of short-term investors, may

increase the firms' ability to invest and to differentiate their products. If firms with more short-horizon investors were to have more cash or lower leverage, these factors could bias our findings. To consider this possibility, we control for a firm's cash and include an interaction between the firm's cash and the dummy cut. We do the same for leverage. In columns 1-6 of Panel A of Table 9, our estimates remain invariant, suggesting that these alternative channels do not drive our findings.

In the same vein, short-term investors could select larger firms or firms that invest more in R&D. These firms in turn might be better suited to adjust to different economic environments. Columns 7 to 9 in Panel A and columns 1 to 3 in Panel B of Table 9 dispel these concerns.

Another possible concern is that short-term institutional ownership could be correlated with other characteristics of the firms' ownership structure, which have an independent effect on the way firms react to shocks. For instance, short-term investors could select firms with fewer family blockholders. If the latter stifle change, the effect we highlight could be spurious. To evaluate the merit of this alternative explanation, we obtain a snapshot of data on family block ownership from Orbis.[9] We then evaluate whether these firms react differently to shocks. In columns 4 to 6 of Panel B of Table 9, we find no evidence that this is the case.

We also consider whether firms with short-horizon investors have poor governance and perform better when competition increases. In columns 7 to 9, we interact the dummy *cut* with a dummy that takes value one if the Gompers, Ishii, and Metrick (2003) corporate governance index is in the top quartile, indicating poor corporate governance. Our results are unaffected.

[9] When studying family and individual block ownership, it is common to rely on a cross-section, as family ownership varies little over time (McConnell and Servaes, 1990).

In Panel C, we explore whether other features of institutional ownership may be driving our findings. For instance, long-term investors are heterogeneous and include passive investors and dedicated, active investors. Dedicated investors may be able to pressure the firms they own to the same extent as short-term investors. We explore this possibility in columns 1 to 3. We find no evidence that dedicated investors yield the same benefits as short-horizon investors.

In the classification of Bushee (1998 and 2001), an investor which is not transient or dedicated is considered a passive investor, which follows an index. Therefore, the estimates in columns 1 to 3 also imply that our results are not due to passive investors, which can affect corporate governance (Appel, Gormley, and Keim, 2016).

We also consider whether the mechanism we propose is related to investor activism. We view short-term investors' governance through exit as a complement to governance through voice, which is generally performed by activist hedge funds. Activist hedge funds typically have holding periods lasting several years and do not systematically target industries whose competitive environment has radically changed (Brav et al., 2008). To verify empirically that the mechanisms are distinct, we use activist campaigns from Edmans, Fang and Zur (2013) and define a dummy that takes value equal to one if in the year following the tariff cut, a firm is target of an activist campaign. In columns 4 to 6, while firms that are target of activist campaigns tend to reduce investment and employment, we find no evidence that activist campaigns affect firms' responses to the tariff cuts. Our findings are also unaffected.

Finally, dedicated, active owners typically hold larger stakes in companies as their activities have high fixed costs (Chen, Harford, and Li, 2007). Therefore, we test whether the differential performance may arise because of differences in institutional ownership

concentration. In columns 7 to 9, our results are unaffected if we include an interaction of the Herfindahl index of institutional ownership with the dummy cut.

Overall, while this analysis falls short of a statistical demonstration, it considers a comprehensive set of alternative mechanisms that could lead to differential reactions to tariff cuts. This gives us confidence that our findings are unlikely to be driven by omitted firm characteristics associated with short-term institutional ownership.

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 shocks that dramatically affect their economic environment. 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 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 data on institutional ownership are available from 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 code service industries. 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 firm adjustment.

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 10 provides clear evidence that following dramatic changes in economic environment due to deregulation, firms that happened to have more short-horizon investors before deregulation have higher sales and employment growth (columns 1 to 4). For instance, a one-standard-deviation increase in the proportion of short-term ownerships leads to 11 percentage points higher sales growth in the year following the deregulation. Consistently with our earlier findings, these firms also invest more in fixed assets (columns 5 and 6), although the effect is not significant at conventional levels in column 5. Arguably as a consequence, their valuations are higher than for other firms affected by the deregulations (column 7).

Overall, these results confirm that firms with more short-term institutional ownership adapt more promptly to shocks that significantly alter their economic environment.

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 may lead to inefficient short-termism. However, in the aftermath of shocks that alter a firm's economic environment and demand rapid changes in business strategy, the managers of firms with more short-horizon investors adapt to the new business environment better than other similarly affected firms. By performing diversifying acquisitions, spending more in advertising, and even changing the executive team, firms with relatively more short horizon investors 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.

These benefits are important even in the light of the costs associated with short-termism highlighted in previous literature. The process of globalization and the introduction of more radical innovations increase the incidence of shocks to which the benefits of short-term ownership are associated. More crucially, changes in economic environment have large downside for firms and economies. Firms that fail to adapt may become "zombies", increasing capital misallocation and dragging down the overall macroeconomic performance as in Japan (Caballero, Hoshi, and Kashyap, 2008). Short-term investors may thus be an antidote to economic sclerosis.

Appendix

Variables	Definition
% Institutional Investors	The fraction of shares outstanding held by institutional investors at year $t-1$. Source: 13F.
% Short-term Investors	The fraction of shares outstanding 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.
% Dedicated Investors	The fraction of shares outstanding held by dedicated investors at year $t-1$. Dedicated 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.
Cash	Cash and short-term investments divided by total assets. Winsorized at 1%. Source: COMPUSTAT.
Churn	The weighted average of the portfolio turnover of institutional investors in a firm, 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 previous year using as weight the proportion of share outstanding held by that investor. 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.
Deregulation	A dummy variable equal to one if a firm belongs to an industry that experiences deregulations during the previous year, and zero otherwise. Source: Asker and Ljungqvist (2010).
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.
Divestiture	A dummy variable equal to one if a firm partially or fully disposes of a business unit losing control of it. Source: SDC.
Employment 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 executives 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.
Family Block Ownership	The proportion of share blocks held by families, as of 2010. Source: Orbis.
High WP	A dummy variable equal to one for sample firms with CEO's wealth-performance sensitivity in the top tercile of the sample firm distribution during a year and zero otherwise. Source: Edmans, Gabaix, and Landier (2009).
Investor Activism	A dummy variable equal to one if a firm has been targeted by activist hedge funds (which filed 13D) during the previous year and zero otherwise. Source: Edmans, Fang, and Zur (2013).
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.
Ownership Concentration	The Herfindahl index of the fraction of shares held by institutional investors at year $t-1$. Source: 13F.
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 (2016).
Post Cut	A dummy variable equal to one following a large tariff cut in a given industry, and zero otherwise. Sources: Feenstra (1996), Feenstra, Romalis, and Schott (2002), and Schott (2010).
ROA	Return on assets, calculated as net earnings divided by total assets. Winsorized at 1%. Source: COMPUSTAT.
Sales Growth	The difference between the natural logarithm of a firm's sales 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.
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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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 of *% Short-term Investors*. 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	24,568	0.092	0.334	-0.041	0.083	0.226
Employee Growth	24,039	0.036	0.257	-0.056	0.026	0.132
PPE Growth	24,931	0.106	0.252	0.016	0.076	0.178
ROA	25,220	-0.093	0.447	-0.077	0.033	0.082
Tobin's Q	27,665	2.158	1.539	1.118	1.578	2.568
% 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
Family Block Ownership	28,380	0.074	0.157	0.000	0.000	0.068
% Dedicated Investors	28,380	0.050	0.067	0.000	0.021	0.078
Ownership Concentration	28,380	0.207	0.253	0.047	0.100	0.259
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	0.133	0.582	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)	(5)
% 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	3,852	12,701	3,614	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, employment growth in Panel B, and PPE growth 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 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	0.215***	0.200***	0.205***	0.232***	0.242***	
	(0.057)	(0.059)	(0.064)	(0.088)	(0.090)	
Cut	-0.019***	-0.017**				
	(0.007)	(0.007)				
% Short-term Investors	0.175***	0.037	0.190***	0.415***	0.176***	
	(0.028)	(0.041)	(0.031)	(0.041)	(0.056)	
Cut × Churn						1.833***
						(0.634)
Churn						2.512***
						(0.285)
% Institutional Investors				-0.114***	-0.109***	-0.229***
				(0.014)	(0.027)	(0.026)
Cut × % Institutional Investors				-0.019	-0.044	-0.092*
				(0.030)	(0.031)	(0.055)
ROA	0.161***	0.283***	0.143***	0.153***	0.256***	0.136***
	(0.014)	(0.022)	(0.014)	(0.014)	(0.023)	(0.012)
Observations	22,491	22,232	21,957	21,957	21,690	23,972
R-squared	0.102	0.245	0.209	0.213	0.349	0.198
Industry FE	YES	NO	NO	NO	NO	NO
Firm FE	NO	YES	NO	NO	YES	NO
Year FE	YES	YES	NO	NO	NO	NO
Industry x Year FE	NO	NO	YES	YES	YES	YES

Table 2 continued.

Panel B: Employment Growth

	(1)	(2)	(3)	(4)	(5)	(6)
Cut × % Short-term Investors	0.187***	0.140***	0.212***	0.193**	0.161**	
	(0.048)	(0.049)	(0.054)	(0.076)	(0.074)	
Cut	-0.013**	-0.005				
	(0.006)	(0.006)				
% Short-term Investors	0.176***	0.118***	0.173***	0.372***	0.227***	
	(0.023)	(0.033)	(0.026)	(0.034)	(0.041)	
Cut × Churn						1.668***
						(0.503)
Churn						1.978***
						(0.215)
% Institutional Investors				-0.102***	-0.096***	-0.175***
				(0.012)	(0.023)	(0.020)
Cut × % Institutional Investors				0.006	-0.011	-0.064
				(0.026)	(0.027)	(0.044)
ROA	0.119***	0.180***	0.108***	0.117***	0.168***	0.104***
	(0.009)	(0.014)	(0.009)	(0.010)	(0.015)	(0.008)
Observations	22,053	21,788	21,498	21,498	21,226	23,424
R-squared	0.082	0.232	0.175	0.179	0.324	0.165
Industry FE	YES	NO	NO	NO	NO	NO
Firm FE	NO	YES	NO	NO	YES	NO
Year FE	YES	YES	NO	NO	NO	NO
Industry x Year FE	NO	NO	YES	YES	YES	YES

Table 2 continued.

Panel C: PPE Growth

	(1)	(2)	(3)	(4)	(5)	(6)
Cut × % Short-term Investors	0.238***	0.225***	0.225***	0.314***	0.284***	
	(0.045)	(0.045)	(0.051)	(0.071)	(0.069)	
Cut	-0.013**	-0.013**				
	(0.006)	(0.006)				
% Short-term Investors	0.256***	0.256***	0.256***	0.490***	0.331***	
	(0.024)	(0.033)	(0.027)	(0.035)	(0.043)	
Cut × Churn						2.630***
						(0.478)
Churn						2.827***
						(0.226)
% Institutional Investors				-0.119***	-0.064***	-0.237***
				(0.012)	(0.023)	(0.021)
Cut × % Institutional Investors				-0.051**	-0.048*	-0.166***
				(0.025)	(0.025)	(0.042)
ROA	0.085***	0.125***	0.077***	0.087***	0.114***	0.077***
	(0.008)	(0.013)	(0.009)	(0.009)	(0.013)	(0.007)
Observations	22,823	22,566	22,284	22,284	22,020	24,335
R-squared	0.088	0.269	0.173	0.180	0.347	0.163
Industry FE	YES	NO	NO	NO	NO	NO
Firm FE	NO	YES	NO	NO	YES	NO
Year FE	YES	YES	NO	NO	NO	NO
Industry x Year FE	NO	NO	YES	YES	YES	YES

Table 3: Short-Term Investors Threat of Exit and CEO Wealth-Performance Sensitivity

This table explores how firms' responses to large tariff cuts depend on the sensitivity of the CEO's wealth to the stock price. The dependent variable is sales growth in columns 1-4, employment growth in columns 5-8, and PPE growth in columns 9-12. "High WP" is a dummy variable equal to one if the wealth-performance sensitivity is in the top tercile during a year and zero otherwise. 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 clustered at the firm level are in parenthesis. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable	Sales Growth				Employment Growth				PPE Growth			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Cut × % Short-term Investors	0.167***	0.152**	0.153**	0.119*	0.148***	0.105**	0.172***	0.113*	0.207***	0.200***	0.190***	0.173***
	(0.061)	(0.064)	(0.068)	(0.072)	(0.052)	(0.052)	(0.058)	(0.058)	(0.049)	(0.049)	(0.055)	(0.055)
High WP × Cut × % Short-term Investors	0.239***	0.226***	0.256***	0.229**	0.188**	0.165**	0.187**	0.154**	0.152**	0.121*	0.173**	0.117*
	(0.086)	(0.087)	(0.093)	(0.093)	(0.074)	(0.071)	(0.080)	(0.076)	(0.066)	(0.065)	(0.072)	(0.071)
% Short-term Investors	0.169***	0.033	0.184***	0.049	0.167***	0.115***	0.165***	0.111***	0.248***	0.250***	0.249***	0.256***
	(0.029)	(0.041)	(0.031)	(0.046)	(0.024)	(0.033)	(0.026)	(0.038)	(0.024)	(0.033)	(0.027)	(0.036)
High WP	0.013**	0.023***	0.012*	0.028***	0.018***	0.020***	0.017***	0.021***	0.016***	0.032***	0.014**	0.035***
	(0.006)	(0.008)	(0.007)	(0.009)	(0.005)	(0.006)	(0.006)	(0.006)	(0.005)	(0.006)	(0.006)	(0.007)
Cut	-0.018**	-0.016**			-0.012*	-0.004			-0.012**	-0.012**		
	(0.007)	(0.007)			(0.006)	(0.006)			(0.006)	(0.006)		
ROA	0.159***	0.282***	0.141***	0.255***	0.117***	0.180***	0.106***	0.167***	0.083***	0.124***	0.075***	0.113***
	(0.014)	(0.022)	(0.014)	(0.023)	(0.009)	(0.014)	(0.010)	(0.015)	(0.009)	(0.013)	(0.009)	(0.013)
Observations	22,491	22,232	21,957	21,690	22,053	21,788	21,498	21,226	22,823	22,566	22,284	22,020
R-squared	0.102	0.246	0.210	0.349	0.083	0.232	0.176	0.324	0.089	0.270	0.173	0.348
Industry FE	YES	NO	NO	NO	YES	NO	NO	NO	YES	NO	NO	NO
Firm FE	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES
Year FE	YES	YES	NO	NO	YES	YES	NO	NO	YES	YES	NO	NO
Industry x Year FE	NO	NO	YES	YES	NO	NO	YES	YES	NO	NO	YES	YES

Table 4: Long-term Effects

The dependent variable is Tobin's Q in Panel A and ROA (t+1) in Panel B. The dummy *Post Cut* takes value equal to one following the tariff cut. 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						**Panel B: ROA**					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Post Cut × % Short-term Investors	2.092***	0.943**	0.970**	1.496***			0.234**	0.228*	0.235**	0.275**		
	(0.351)	(0.420)	(0.416)	(0.465)			(0.098)	(0.121)	(0.118)	(0.134)		
Post Cut	-0.262***	-0.371***	-0.370***		-0.356***		-0.012	-0.010	-0.012		-0.005	
	(0.053)	(0.066)	(0.065)		(0.059)		(0.011)	(0.015)	(0.014)		(0.014)	
% Short-term Investors	-0.247	0.562	0.667*	0.134			-0.138	-0.117	-0.139	-0.180		
	(0.333)	(0.378)	(0.374)	(0.422)			(0.096)	(0.112)	(0.110)	(0.126)		
Post Cut × Churn					2.537	5.559**					1.404**	2.041***
					(2.468)	(2.737)					(0.597)	(0.703)
Churn					3.088	0.941					-0.170	-0.576
					(2.201)	(2.463)					(0.522)	(0.622)
% Institutional Investors	-0.611***	-1.461***	-1.174***	-0.822***	-1.182***	-0.788***	-0.037	-0.020	-0.036	-0.016	-0.056	-0.025
	(0.106)	(0.180)	(0.183)	(0.220)	(0.254)	(0.299)	(0.024)	(0.035)	(0.036)	(0.048)	(0.049)	(0.062)
Post Cut × % Institutional Investors		0.569***	0.701***	0.476**	0.770***	0.406		0.008	-0.001	-0.014	-0.066	-0.116*
		(0.188)	(0.185)	(0.216)	(0.258)	(0.297)		(0.039)	(0.038)	(0.047)	(0.055)	(0.066)
ROA	0.063		0.066	0.063	-0.019	-0.027						
	(0.057)		(0.056)	(0.060)	(0.049)	(0.051)						
Leverage	0.272***		0.279***	0.294***	0.333***	0.340***	-0.054*		-0.054*	-0.053	-0.057**	-0.059**
	(0.063)		(0.063)	(0.066)	(0.055)	(0.058)	(0.031)		(0.031)	(0.033)	(0.029)	(0.029)
Size	-0.291***		-0.293***	-0.366***	-0.272***	-0.336***	0.018**		0.018**	0.023***	0.023***	0.025***
	(0.025)		(0.025)	(0.029)	(0.024)	(0.027)	(0.008)		(0.008)	(0.009)	(0.008)	(0.009)
Observations	24,661	24,667	24,661	24,107	27,282	26,739	22,437	22,550	22,437	21,884	24,751	24,223
R-squared	0.623	0.610	0.624	0.678	0.638	0.687	0.640	0.642	0.640	0.668	0.658	0.682
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	NO	YES	NO	YES	YES	YES	NO	YES	NO
Industry x Year FE	NO	NO	NO	YES	NO	YES	NO	NO	NO	YES	NO	YES

Table 5: Mechanisms

Panels A and B: Advertising Growth and Product Differentiation

The dependent variable is advertising growth in Panel A, and the change in product differentiation, measured using the textual measure of product overlap of Hoberg and Phillips (2016), in Panel B. 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 reported in parentheses are clustered at the firm level in Panel A, and clustered at both the firm level and year level in Panel B. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Panel A: Advertising Growth		**Panel B: Product Differentiation**		
	(1)	(2)	(3)	(4)	(5)
Cut × % Short-term Investors	0.251**	0.275**	-0.129**	-0.128**	-0.125**
	(0.104)	(0.122)	(0.045)	(0.047)	(0.049)
Cut	0.044***		0.019	0.019	0.019
	(0.015)		(0.015)	(0.015)	(0.016)
% Short-term Investors	0.020	-0.063	-0.025	-0.031	-0.032
	(0.092)	(0.104)	(0.035)	(0.037)	(0.036)
% Institutional Investors	0.009	0.043	-0.013	-0.012	-0.021
	(0.040)	(0.044)	(0.025)	(0.026)	(0.027)
Cut × % Institutional Investors	-0.113***	-0.099*			
	(0.043)	(0.051)			
ROA	-0.091***	-0.088***		0.024	0.018
	(0.014)	(0.014)		(0.024)	(0.029)
Leverage					-0.004
					(0.013)
Size					0.006
					(0.008)
Observations	23,028	22,496	14,256	14,242	14,210
R-squared	0.218	0.284	0.064	0.064	0.064
Industry FE	YES	NO	NO	NO	NO
Firm FE	NO	NO	YES	YES	YES
Year FE	YES	NO	YES	YES	YES
Industry x Year FE	NO	YES	NO	NO	NO

Table 5 continued.
Panel C: Mergers and Acquisitions

In column 1, the dependent variable is a dummy variable equal to one if a firm has engaged in mergers and acquisitions (M&A) in a given year, and zero otherwise. In column 2, the dependent variable is a dummy variable equal to one if a firm carried out at least one divestiture in a given year. In columns 3 to 10, 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 target and acquirer operate in different two-digit SIC codes industries. 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.

Dependent Variable	M&A	Divestiture	Diversifying M&A							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Cut × % Short-term Investors	-0.028	0.023	0.095*	0.208***	0.142*	0.171**	0.097*	0.210***	0.142*	0.174**
	(0.075)	(0.057)	(0.053)	(0.055)	(0.077)	(0.078)	(0.053)	(0.055)	(0.077)	(0.079)
Cut	-0.017*	-0.007	-0.009		-0.004		-0.009		-0.004	
	(0.010)	(0.008)	(0.007)		(0.008)		(0.007)		(0.008)	
% Short-term Investors	0.168***	0.111**	0.020	-0.124***	0.008	-0.115**	0.021	-0.124***	0.010	-0.115**
	(0.065)	(0.050)	(0.045)	(0.043)	(0.047)	(0.046)	(0.046)	(0.043)	(0.048)	(0.046)
% Institutional Investors	-0.038	-0.040	-0.004	0.094***	0.002	0.090***	-0.005	0.094***	0.001	0.090***
	(0.034)	(0.026)	(0.022)	(0.019)	(0.023)	(0.020)	(0.022)	(0.019)	(0.023)	(0.020)
Cut × % Institutional Investors					-0.025	0.019			-0.024	0.019
					(0.030)	(0.031)			(0.030)	(0.031)
# of M&As			0.218***	0.228***	0.218***	0.228***	0.217***	0.228***	0.217***	0.228***
			(0.029)	(0.027)	(0.029)	(0.027)	(0.029)	(0.027)	(0.029)	(0.027)
ROA	0.055***	0.020***	0.022***	0.013**	0.022***	0.013**	0.015*	0.009	0.015*	0.009
	(0.011)	(0.007)	(0.008)	(0.005)	(0.008)	(0.005)	(0.008)	(0.006)	(0.008)	(0.006)
Size	0.025***	0.010**	0.004	0.005	0.004	0.005	0.004	0.005	0.003	0.005
	(0.007)	(0.004)	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)
Leverage							-0.019**	-0.008	-0.019**	-0.008
							(0.009)	(0.006)	(0.009)	(0.006)
Observations	21,604	21,604	21,604	21,341	21,604	21,341	21,560	21,299	21,560	21,299
R-squared	0.320	0.218	0.541	0.529	0.541	0.529	0.541	0.529	0.541	0.529
Firm FE	YES	YES	YES	NO	YES	NO	YES	NO	YES	NO
Year FE	YES	YES	YES	NO	YES	NO	YES	NO	YES	NO
Industry x Year FE	NO	NO	NO	YES	NO	YES	NO	YES	NO	YES

Table 5 continued.

Panel D: Executive Turnover

The dependent variable is executive turnover, which is the number of executives leaving or joining a firm in the year following the tariff cut, defined as the number of executives at the end of the previous year. All models include a constant, and fixed effects as described in the table, whose coefficients are not reported. Industry classification is based on two-digit SIC codes. Standard errors are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)
Cut × % Short-term Investors	0.100*	0.104*	0.100*
	(0.061)	(0.059)	(0.059)
Cut	0.008	0.012	0.008
	(0.015)	(0.015)	(0.015)
% Short-term Investors	0.018	0.032	0.032
	(0.031)	(0.031)	(0.032)
% Institutional Investors	0.019	-0.005	-0.010
	(0.016)	(0.017)	(0.017)
Cut × % Institutional Investors	-0.024	-0.031	-0.029
	(0.029)	(0.029)	(0.029)
ROA	-0.133***	-0.120***	-0.120***
	(0.017)	(0.018)	(0.018)
Leverage		0.008	0.013
		(0.011)	(0.012)
Size		-0.004**	-0.003*
		(0.002)	(0.002)
# of Executives		0.036***	0.036***
		(0.002)	(0.002)
Observations	8,201	8,189	8,189
R-squared	0.039	0.088	0.092
Industry FE	NO	NO	YES
Year FE	YES	YES	YES

Table 6: Robustness

The dependent variable is indicated on top of each column. In Panel A, *Cut (t-1)*, *Cut (t-2)*, and *Cut (t-3)* take value equal to one for industries one, two, and three years before the tariff cut, respectively. 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 Growth		Employment Growth		PPE Growth	
	(1)	(2)	(3)	(4)	(5)	(6)
Cut × % Short-term Investors	0.155*	0.143*	0.151**	0.153**	0.192***	0.205***
	(0.081)	(0.080)	(0.065)	(0.064)	(0.061)	(0.058)
% Short-term Investors	0.165***	0.020	0.210***	0.117**	0.316***	0.343***
	(0.041)	(0.060)	(0.034)	(0.049)	(0.034)	(0.046)
Cut (t-1) × % Short-term Investors	0.028	0.066	0.041	0.064	-0.024	-0.015
	(0.086)	(0.089)	(0.065)	(0.067)	(0.058)	(0.058)
Cut (t-2) × % Short-term Investors	0.115	0.100	0.131*	0.140**	0.087	0.077
	(0.080)	(0.080)	(0.071)	(0.071)	(0.066)	(0.064)
Cut (t-3) × % Short-term Investors	0.072	0.100	-0.132**	-0.167**	-0.081	-0.106
	(0.081)	(0.088)	(0.066)	(0.068)	(0.068)	(0.069)
ROA	0.154***	0.282***	0.104***	0.163***	0.091***	0.130***
	(0.019)	(0.027)	(0.014)	(0.022)	(0.013)	(0.019)
Observations	15,683	15,478	15,285	15,056	15,850	15,631
R-squared	0.197	0.345	0.187	0.338	0.193	0.380
Firm FE	NO	YES	NO	YES	NO	YES
Industry x Year FE	YES	YES	YES	YES	YES	YES

Table 6 continued.

Panel B: Endogeneity of Short-Term Institutional Ownership

Dependent Variable	Sales Growth		Employment Growth		PPE Growth	
	(1)	(2)	(3)	(4)	(5)	(6)
Cut × % Short-term Investors (t-4)	0.217***	0.190**	0.144**	0.120*	0.142**	0.077
	(0.071)	(0.075)	(0.060)	(0.064)	(0.058)	(0.062)
Cut	-0.015*		-0.009		-0.007	
	(0.009)		(0.007)		(0.007)	
% Short-term Investors (t-4)	-0.070	0.074**	-0.132***	0.029	-0.158***	0.037
	(0.043)	(0.035)	(0.034)	(0.027)	(0.031)	(0.026)
% Institutional Investors (t-4)	-0.000	-0.000**	0.000	-0.000	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Cut × % Institutional Investors (t-4)	0.000	-0.000	-0.000	-0.000	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ROA	0.273***	0.175***	0.153***	0.121***	0.122***	0.100***
	(0.028)	(0.019)	(0.021)	(0.013)	(0.019)	(0.012)
Observations	15,452	15,106	15,273	14,919	15,577	15,228
R-squared	0.241	0.241	0.222	0.189	0.247	0.171
Firm FE	YES	NO	YES	NO	YES	NO
Year FE	YES	NO	YES	NO	YES	NO
Industry x Year FE	NO	YES	NO	YES	NO	YES

Table 7: Instrumental Variable Estimates

We instrument *% Short-term Investors* and *Cut × % Short-term Investors* with *Large-cap (2000) × Decimalization*, *Mid-cap (2000) × Decimalization*, *Large-cap (2000) × Decimalization × Cut*, and *Mid-cap (2000) × Decimalization × Cut*. *Decimalization* is a dummy variable equal to one after 2001, the year when fractional pricing was terminated and the minimum tick size for quotes and trades was reduced to pennies, and zero otherwise. Panel A reports the first stage of the IV regression for the two endogenous variables *% Short-term Investors* and *Cut × % Short-term Investors*. Panel B reports the second stage estimates for the dependent variables indicated on top of each column. All models include both 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: First Stage

Dependent Variable	% Short-term Investors			Cut × % Short-term Investors	
	(1)	(2)	(3)	(4)	(5)
Large-cap (2000) × Decimalization	0.012**	0.011**	0.007	-0.026***	-0.023***
	(0.005)	(0.005)	(0.006)	(0.002)	(0.002)
Large-cap (2000) × Decimalization × Cut		0.007	-0.006	0.068***	0.053***
		(0.005)	(0.009)	(0.007)	(0.010)
Mid-cap (2000) × Decimalization	0.035***	0.034***	0.030***	-0.013***	-0.009***
	(0.005)	(0.006)	(0.006)	(0.002)	(0.002)
Mid-cap (2000) × Decimalization × Cut		0.010**	0.014	0.071***	0.060***
		(0.005)	(0.010)	(0.008)	(0.011)
Cut	0.001	-0.000		0.081***	
	(0.001)	(0.001)		(0.002)	
ROA	0.015***	0.015***	0.023***	0.003*	0.004***
	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)
Large-cap (2000)			0.047***		0.022***
			(0.004)		(0.002)
Mid-cap (2000)			0.015***		0.008***
			(0.004)		(0.002)
Observations	25,017	25,017	24,779	25,017	24,779
R-squared	0.605	0.605	0.249	0.582	0.529
Year FE	YES	YES	NO	YES	NO
Firm FE	YES	YES	NO	YES	NO
Industry x Year FE	NO	NO	YES	NO	YES

Table 7 continued.

Panel B: Second Stage

Dependent Variable	Sales Growth		Employment Growth		PPE Growth	
	(1)	(2)	(3)	(4)	(5)	(6)
Cut × % Short-term Investors	0.456**	1.645***	0.248	1.534***	0.365**	1.346***
	(0.193)	(0.371)	(0.152)	(0.305)	(0.169)	(0.327)
Cut	-0.040**		-0.014		-0.024	
	(0.019)		(0.015)		(0.017)	
% Short-term Investors	-0.410	-1.027**	-0.661*	-1.164***	-1.075**	-1.464***
	(0.430)	(0.467)	(0.363)	(0.379)	(0.424)	(0.474)
ROA	0.291***	0.170***	0.193***	0.139***	0.144***	0.120***
	(0.024)	(0.019)	(0.016)	(0.014)	(0.015)	(0.015)
Large-cap (2000)		0.033		0.044**		0.047*
		(0.025)		(0.020)		(0.025)
Mid-cap (2000)		0.034**		0.040***		0.039**
		(0.017)		(0.014)		(0.017)
Observations	22,232	21,957	21,788	21,498	22,566	22,284
Cragg-Donald Wald F statistic	49.230	23.231	51.116	23.670	51.163	23.164
Root MSE	0.301	0.328	0.234	0.264	0.235	0.277
Year FE	YES	NO	YES	NO	YES	NO
Firm FE	YES	NO	YES	NO	YES	NO
Industry x Year FE	NO	YES	NO	YES	NO	YES

Table 8: Short-term Institutional 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 a sample firm's *Churn* 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.

Dependent Variable	% Short-term Investors			Churn		
	(1)	(2)	(3)	(4)	(5)	(6)
Post Cut	0.008**	0.003	0.003	0.002***	0.001	0.001
	(0.004)	(0.003)	(0.003)	(0.001)	(0.001)	(0.001)
% Institutional Investors		0.094***	0.096***		0.044***	0.042***
		(0.006)	(0.007)		(0.001)	(0.001)
ROA		0.027***	0.032***		0.006***	0.005***
		(0.003)	(0.003)		(0.000)	(0.001)
Leverage			0.008**			0.001
			(0.004)			(0.001)
Size			-0.001			0.001***
			(0.002)			(0.000)
Observations	19,725	19,600	19,566	21,302	21,123	21,087
R-squared	0.638	0.656	0.657	0.787	0.830	0.831
Firm FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES

Table 9: Considering Alternative Mechanisms

Panel A: Cash Holdings, Leverage and Firm Size

This table reports the baseline regression tests of Table 2 with additional controls for corporate cash holdings (columns 1-3), leverage (columns 4-6), and firm size (columns 7-9), measured as natural logarithm of total assets. 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	Cash Holding			Leverage			Firm Size		
	Sales Growth	Employment Growth	PPE Growth	Sales Growth	Employment Growth	PPE Growth	Sales Growth	Employment Growth	PPE Growth
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Cut × % Short-term Investors	0.246***	0.150**	0.273***	0.251***	0.157**	0.279***	0.256***	0.170**	0.288***
	(0.091)	(0.075)	(0.070)	(0.091)	(0.074)	(0.069)	(0.091)	(0.074)	(0.070)
% Short-term Investors	0.189***	0.236***	0.344***	0.172***	0.226***	0.334***	0.170***	0.227***	0.325***
	(0.056)	(0.041)	(0.043)	(0.056)	(0.041)	(0.043)	(0.056)	(0.041)	(0.043)
% Institutional Investors	-0.112***	-0.099***	-0.067***	-0.106***	-0.099***	-0.067***	-0.142***	-0.181***	-0.172***
	(0.027)	(0.023)	(0.023)	(0.027)	(0.023)	(0.023)	(0.028)	(0.025)	(0.025)
Cut × % Institutional Investors	-0.050	-0.009	-0.048*	-0.049	-0.009	-0.047*	-0.057*	-0.008	-0.034
	(0.031)	(0.027)	(0.025)	(0.031)	(0.027)	(0.025)	(0.034)	(0.029)	(0.027)
Cash	-0.166***	-0.070***	-0.126***						
	(0.033)	(0.025)	(0.024)						
Cut × Cash	-0.001	0.028	0.033						
	(0.049)	(0.029)	(0.027)						
Leverage				0.028***	-0.007	-0.003***			
				(0.009)	(0.005)	(0.000)			
Cut × Leverage				0.048***	-0.001	-0.003			
				(0.017)	(0.009)	(0.010)			
Size							0.028***	0.061***	0.081***
							(0.007)	(0.006)	(0.006)
Cut × Size							0.004	0.002	-0.000
							(0.003)	(0.003)	(0.003)
ROA	0.264***	0.172***	0.120***	0.281***	0.163***	0.113***	0.236***	0.126***	0.058***

	(0.023)	(0.015)	(0.013)	(0.025)	(0.015)	(0.014)	(0.023)	(0.016)	(0.014)
Observations	21,685	21,224	22,020	21,640	21,180	21,972	21,690	21,226	22,020
R-squared	0.352	0.325	0.350	0.351	0.325	0.349	0.351	0.335	0.367
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry x Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES

Table 9 continued.

Panel B: Corporate Governance, R&D, and Family Block Ownership

This table reports the baseline regression tests of Table 2 with additional controls for firm's R&D expenditure (columns 1-3), and family block ownership (columns 4-6), and corporate governance (columns 7-9), measured as a dummy variable equal to one if a firm's Gompers-Ishii-Metrick G-index is in the top quartile indicating poor corporate governance and zero otherwise. Since we have a snapshot of family block ownership, the direct effect is absorbed by the firm fixed effects. 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	R&D			Family Block Ownership			G-Index		
	Sales Growth	Employment Growth	PPE Growth	Sales Growth	Employment Growth	PPE Growth	Sales Growth	Employment Growth	PPE Growth
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Cut × % Short-term Investors	0.238***	0.161**	0.284***	0.241***	0.160**	0.284***	0.241***	0.158**	0.276***
	(0.090)	(0.074)	(0.069)	(0.090)	(0.074)	(0.069)	(0.091)	(0.075)	(0.070)
% Short-term Investors	0.180***	0.226***	0.330***	0.177***	0.228***	0.331***	0.176***	0.228***	0.334***
	(0.056)	(0.041)	(0.043)	(0.056)	(0.041)	(0.043)	(0.056)	(0.041)	(0.043)
% Institutional Investors	-0.106***	-0.099***	-0.065***	-0.106***	-0.095***	-0.063***	-0.109***	-0.097***	-0.066***
	(0.027)	(0.023)	(0.023)	(0.027)	(0.023)	(0.023)	(0.027)	(0.023)	(0.023)
Cut × % Institutional Investors	-0.040	-0.009	-0.049*	-0.054*	-0.015	-0.052**	-0.043	-0.008	-0.040
	(0.031)	(0.027)	(0.025)	(0.031)	(0.027)	(0.025)	(0.032)	(0.028)	(0.027)
R&D	0.040	-0.022	-0.014						
	(0.037)	(0.021)	(0.020)						
Cut × R&D	0.093	0.021	-0.014						
	(0.069)	(0.040)	(0.043)						
Cut × Family Block Ownership				-0.088**	-0.038	-0.034			
				(0.043)	(0.031)	(0.029)			
High G							0.004	0.001	0.006
							(0.014)	(0.013)	(0.012)
Cut × High G							-0.001	-0.006	-0.015
							(0.012)	(0.012)	(0.012)
ROA	0.257***	0.168***	0.113***	0.256***	0.168***	0.114***	0.256***	0.168***	0.114***

	(0.023)	(0.015)	(0.013)	(0.023)	(0.015)	(0.013)	(0.023)	(0.015)	(0.013)
Observations	21,685	21,226	22,020	21,690	21,226	22,020	21,690	21,226	22,020
R-squared	0.350	0.325	0.347	0.349	0.325	0.347	0.349	0.324	0.347
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry x Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES

Table 9 continued.

Panel C: Dedicated Investors, Investor Activism, and Ownership Concentration

This table reports the baseline regression tests of Table 2 with additional controls for dedicated long-term investors (columns 1-3), investor activism (columns 4-6), and ownership concentration (columns 7-9). 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	Dedicated Investors			Active Investors			Ownership Concentration		
	Sales Growth	Employment Growth	PPE Growth	Sales Growth	Employment Growth	PPE Growth	Sales Growth	Employment Growth	PPE Growth
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Cut × % Short-term Investors	0.184***	0.153***	0.204***	0.241***	0.160**	0.284***	0.247***	0.168**	0.289***
	(0.069)	(0.056)	(0.052)	(0.090)	(0.074)	(0.069)	(0.090)	(0.074)	(0.069)
% Short-term Investors	0.050	0.114***	0.261***	0.175***	0.226***	0.330***	0.160***	0.208***	0.319***
	(0.046)	(0.038)	(0.037)	(0.056)	(0.041)	(0.043)	(0.056)	(0.041)	(0.043)
% Institutional Investors				-0.109***	-0.096***	-0.063***	-0.108***	-0.106***	-0.075***
				(0.027)	(0.023)	(0.023)	(0.028)	(0.024)	(0.023)
Cut × % Institutional Investors				-0.043	-0.011	-0.048*	-0.072**	-0.009	-0.033
				(0.031)	(0.027)	(0.025)	(0.036)	(0.029)	(0.028)
% Dedicated Investors	-0.051	-0.063	-0.069						
	(0.056)	(0.046)	(0.043)						
Cut × % Dedicated Investors	-0.095	-0.037	-0.038						
	(0.086)	(0.065)	(0.063)						
Investor Activism				-0.043	-0.079***	-0.058*			
				(0.038)	(0.028)	(0.031)			
Cut × Investor Activism				-0.078	0.012	0.012			
				(0.056)	(0.046)	(0.048)			
Ownership Concentration							-0.074***	-0.113***	-0.083***
							(0.025)	(0.026)	(0.021)
Cut × Ownership Concentration							-0.067*	0.013	0.040
							(0.039)	(0.033)	(0.031)
ROA	0.256***	0.168***	0.114***	0.256***	0.168***	0.114***	0.252***	0.163***	0.111***

	(0.023)	(0.015)	(0.013)	(0.023)	(0.015)	(0.013)	(0.023)	(0.015)	(0.013)
Observations	21,690	21,226	22,020	21,690	21,226	22,020	21,690	21,226	22,020
R-squared	0.348	0.323	0.347	0.349	0.325	0.348	0.350	0.327	0.349
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry x Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES

Table 10: A Different Shock to the Economic Environment: Deregulation

This table reports regression results for industry deregulation events. The dependent variable is sales growth in columns 1 and 2, employment growth in columns 3 and 4, PPE growth in columns 5 and 6, and the change in Tobin's Q in column 7. 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 significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable	Sales Growth		Employment Growth		PPE Growth		ΔTobin's Q
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Deregulation × % Short-term Investors	0.611**		0.484*		0.539		1.037***
	(0.248)		(0.258)		(0.339)		(0.276)
Deregulation	-0.014	-0.016	-0.031*	-0.035*	-0.049**	-0.063**	-0.105***
	(0.018)	(0.019)	(0.019)	(0.021)	(0.025)	(0.029)	(0.035)
% Short-term Investors	0.137**		0.216***		0.261***		-1.418***
	(0.061)		(0.051)		(0.065)		(0.271)
Deregulation × Churn		1.860**		1.674**		2.215*	
		(0.841)		(0.812)		(1.189)	
Churn		0.043		0.302		0.315	
		(0.199)		(0.190)		(0.243)	
ROA	0.380***	0.377***	0.252***	0.239***	0.220***	0.240***	-0.503*
	(0.041)	(0.040)	(0.028)	(0.028)	(0.045)	(0.045)	(0.291)
Δ Leverage							0.025
							(0.055)
Observations	9,372	10,466	8,820	9,785	9,399	10,457	8,529
R-squared	0.280	0.273	0.200	0.193	0.209	0.200	0.121
Firm FE	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES