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

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Abstract

We show that following large permanent negative shocks, 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 institutional investors put stronger effort in adapting their business 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, restructuring, tariff cuts, deregulation
JEL Classifications: G3, G23, F1

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We show that following large permanent negative shocks, 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 institutional investors put stronger effort in adapting their business to the new competitive environment. Endogeneity of institutional ownership and other selection problems do not appear to drive our findings.
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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

Technological shocks, import competition, and shifts in regulatory policies lead with increasing frequency to radical changes in economic environment and major industry shakeouts (Autor, Dorn and Hanson, 2013). Whether firms succumb or thrive depends on the extent to which they restructure and reinvent their business model. Therefore, it is crucial to understand what factors help to spur prompt and successful restructuring of firms affected by permanent negative shocks and, at the macroeconomic level, of stagnating economies. Unfortunately, we know little about how firms with different characteristics adjust to these shocks.

This paper aims to make a first step in understanding how a firm's ownership structure affects its response to permanent negative shocks. Existing literature implies that in firms with more short-horizon investors, management fears the consequences of short-term underperformance to a larger extent than in other firms. Short-term investors are more likely to sell *en masse* after observing negative short-term results (Bernardo and Welch, 2004) not only because of their trading strategies (Cella, Ellul and Giannetti 2013), but also because long-term investors typically follow an index or hold large positions and are unable to sell. Since managers, whose compensation and tenure are sensitive to the stock price, rather avoid selloffs of their firms' stocks, short-horizon investors' threat of exit may successfully discipline managers even if typically we do not observe actual selloffs (Fos and Kahn, 2015).

While the behavior of short-horizon investors may create a handicap for firms when business is as usual (Stein, 1989), we conjecture that the pressure created by the exit threat of short-horizon investors may spur firms to rapidly adjust in the aftermath of shocks that

require major strategy overhauls. This may be the case not only because short-horizon investors' threat of exiting *en masse* exercises immediate pressure on boards following shocks, but also because firms that are forced to focus on short-term performance learn to be fast in adjusting their corporate policies. Whether these mechanisms are relevant and whether firms with short-horizon investors are more effective in adapting to radical change than other firms 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 study firms' reactions to large and permanent negative shocks. 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, and Valta, 2012, Bloom, Draca and Van Reenen, 2016), to which firms may have to react by reinventing their business model. We test whether firms with disproportionately more short-horizon investors are more successful in adjusting to these shocks 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 smaller drops in the 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. In particular, firms 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. Firms with more short-term institutional investors also 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: they reinvent their business models and choose the industries in which they operate and managerial skills in order to create comparative advantage.

In all of our tests, ownership is predetermined with respect to shocks, making it unlikely that short-horizon investors have selected companies in anticipation of their positive reaction to the shocks. Nevertheless, we perform a number of tests to mitigate concerns about endogeneity problems. First, we show that consistently with the causal mechanism underlying our hypothesis, firms with disproportionately more short-term investors maintain higher growth in sales, employment, and investment following negative 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, reducing the probability that short-term investors selected firms in anticipation of their responses to the shocks. We also note that this would be particularly unlikely in our context as the identity of short-term investors—albeit not the extent of short-term institutional ownership—is likely to have already changed in the time interval between the measurement of ownership and the occurrence of the shock.

Third, we exploit exogenous variation in short-term institutional ownership due to Russell 2000 index inclusions. Since the reconstitution of Russell indices is based on the order of stocks' market capitalizations, which cannot be solely determined by an individual firm's policies, several papers use a similar identification strategy to measure exogenous changes in institutional ownership (e.g., Aghion, Van Reenen, and Zingales 2013). Consistent with the existing literature, we find that index inclusions shorten the horizon of the institutional investors in a firm. Using index inclusions as an instrument for short-term

institutional ownership, we continue to find that firms with short-term investors perform better after the shocks.

Fourth, we show that differences in firms' reactions are not driven by omitted firm characteristics potentially correlated with short-term institutional ownership, such as presence of dedicated investors or index funds, activist campaigns, family ownership, size, cash holdings, leverage, ownership concentration, 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 a higher proportion 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 may 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. For instance, Bushee (1998), Bushee and Noe (2000) and Bushee (2001) show 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). Consistent with the above evidence, many

managers admit that they are willing to sacrifice projects that are profitable in the long run in order to meet short-run earnings targets (Graham, Harvey and Rajgopal, 2005). By contrast, long-term institutional investors appear to improve corporate governance by limiting over-investment (Harford, Kecskes and Mansi, 2014).

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). 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). Trading on long-term information not yet incorporated in prices, short-term investors may also provide stronger governance through their threat of exit (Admati and Pfleiderer, 2009; Edmans, 2009; Edmans and Manso, 2011).

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 inefficient long-termism. We are agnostic on the effect of short-term ownership during normal times or when shocks are temporary (which our empirical strategy is not suitable in identifying). However, we note that our results can be fully consistent with existing literature documenting the negative effects of short-term ownership because the benefits we highlight exist conditionally on permanent negative shocks that require restructuring.

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

The objective of this paper is to consider the governance roles of diversified investors with high portfolio turnover, that is, of short-horizon institutional investors. This complements existing literature that has provided empirical evidence on the positive value effects of institutional blockholders' exit threats (Edmans, Fang and Zur, 2013; Bharath, Jayaraman, and Nagar, 2013), without considering the role of large changes in economic environment.

Conceptually, there are two main differences between short-term institutional investors and the institutional blockholders: Short-term investors do not hold large blocks and therefore are unlikely to obtain private information from managers as for instance assumed by Edmans and Manso (2011). The mechanism leading to the governance role of short-horizon investors is associated with financial market runs (Bernardo and Welch, 2004), that is, selloffs by high portfolio turnover investors who stop providing liquidity to each other.

Thanks to their propensity to financial market runs, short-term investors unwittingly affect managerial policies of firms in which they hold a relatively large share of stocks in a way that longer horizon investors are unable to for the following reasons. First, short-term investors have an advantage in taking fast reactions following changes in economic environment because long-term investors are not able to sell as fast. A large part of long-term investors are passive investors, who have to follow an index and are therefore unable to sell firms in the index. Furthermore, long-term dedicated investors tend to hold larger positions in a firm. Therefore, they are unable to liquidate their positions fast even if they do not follow an index. As a result of the investors' different reaction time to negative news, firms with

short-term investors are more likely to be subject to financial market runs (Cella, Ellul and Giannetti, 2013), while managers of firms with long-term investors are largely unconcerned about sudden sell offs.

Second, firms with short-term investors tend to provide more short-term information (Boone and White, 2015; Glaeser, Michels, and Verrecchia, 2017). Thanks also to short-term investors' trading, these firms may have more informative stock prices. Price informativeness may in turn enable managerial learning and organizational structures with faster reaction to shocks (Bond, Edmans, and Goldstein, 2012).

Note that unlike the blockholders in Edmans and Manso (2011), short-horizon investors tend to have little information on the internal working of the firms they own. It is thus plausible that their exit threat may lead to inefficient short-termism or inefficient long-termism depending on the state of the world. We propose that short-term investors' threat to exit *en masse* is beneficial for shareholder value when changes in competitive environment require swift reactions. This is because the threat to exit pressures managers, whose compensation and jobs depend on the firm's stock price performance, to enact fast changes in corporate policies in order to maintain competitive advantage in comparison to industry rivals.

2. Methodology

2.1 Reduction of Import Tariffs

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

By changing their strategies, differentiating their products, and innovating, domestic firms may weather competition from foreign firms. Put differently, reacting to foreign competition may require strategic changes, and firms, which are more inclined to or faster in restructuring, are expected to perform better. We explore whether firms in an industry react differently to these shocks depending on their ownership structure.

We measure import competition using large reductions of import tariff rates. Because goods and services supplied by foreign rivals become relatively cheaper on domestic markets, large reductions in import tariff rates represent negative shocks triggering an increase in the competitive pressure from foreign rivals. 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 (e.g. Fresard, 2010; Xu, 2012; Valta, 2012).

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

We characterize a large tariff cut as a yearly drop in an industry's tariff rate that is larger than twice the median tariff rate reduction in that industry over the sample period. 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.

These tariff cuts have considerable 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.

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 a lot of time in advance. One may wonder whether some firms may have 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, Jensen, Redding and Schott, 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' innovation activities respond to actual import penetration.

2.2 Empirical Framework

Like Autor, Dorn, and Hanson (2013), 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. 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.

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, 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 for five years following the first tariff rate cut in industry i.[1] 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 and the firms' reactions in terms of employment and investment, whereas Model (2) explores firm 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 mitigated by the fact that we consider heterogeneity in performance of firms *within* the same industry. Furthermore, our control sample also includes firms with different investor

[1] Results are invariant if we increase the number of years we consider in the $post\ cut$ dummy.

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 shocks occur.

This identification assumption is unlikely to be too restrictive, because we use differences in institutional ownership that are predetermined before the tariff cut. Nevertheless, in Subsection 4.4, we provide evidence that our results are invariant when we exploit exogenous variation in short-term institutional ownership generated by index inclusions. In addition, we 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).[2]

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.

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

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 employees, 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' trading horizons are revealed through time by their trading behavior because institutional investors with short trading horizons buy and sell more frequently than long-horizon investors.

To measure short-term institutional ownership in 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. 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 in most of the empirical analysis we control for the proportion of share outstanding held my 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 relatively 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 sample firms with different levels of institutional ownership. Almost by construction, firms with more short-term investors also have greater institutional ownership. The two groups of firms share similar characteristics, such as size captured by number of employees or total assets. Other firm characteristics, such as leverage, even though statistically different, are not necessarily economically different between the two subsamples.

4. Main Results

4.1 Reactions to Negative Shocks

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 after large tariff rates cuts, there is a drop in the growth rate of firm sales. However, the sales

of firms with *ex ante* larger proportion of short-term investors drop to a lower extent than those of other domestic listed companies in the same industry.

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 firm or industry specific shocks cannot drive our finding.

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 3, 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 same negative shock. Thus, firms with disproportionately more short-term investors seem to downsize to a lower extent. For instance, 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 (2014) 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 (2014) argue, the empirical evidence we provide thereafter implies that lower investment hamper firms' long-term performance following negative shocks.

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 that CEOs whose compensation and wealth are more closely linked to the stock price to pay more effort for avoiding an *en masse* exit of the 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 pressure from short-term investors may take actions that improve firm performance in the short run at the cost of long-term performance (e.g., Graham, Harvey and Rajgopal, 2005). One may wonder whether firms do so also in response to negative shocks that increase competition. To address this question, we explore the long-term effects of short-term institutional ownership for firms in industries affected by large tariff cuts using Model (2) in Subsection 2.2.

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 five years after the tariff cut. Five years after the tariff cut, these firms also continue to have higher profitability (Panel B). The effects are also economically sizable. For instance, in column 4 of Panels A and B, a one-standard-deviation increase in short-term institutional ownership translates into 6.3 percentage points higher Tobin's Q and 1.4 points higher ROA. The results are invariant whether we include firm and year fixed effects or interactions of industry and year fixed effects and indicate that the higher growth in sales, PPE, and employment has 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 with short-term institutional ownership above and below the median that have experienced large tariff cuts. We buy (short) firms with short-term performance 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 negative shocks, the portfolios of firms with disproportionately more short-horizon investors outperform the portfolio of firms with short-term institutional ownership below the median by 0.03% per month, equivalent to almost 0.4% per year.

4.3 Mechanisms

In this subsection, we explore how firms with more short-term institutional ownership manage to contract to a lower extent 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 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 (2015). Hoberg and Phillips (2015) 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.[3]

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 other firms. Instead, they engage in diversifying acquisitions (columns 3-6). 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 (Maksimovic and Phillips, 2013) and highlight a situation in which corporate diversification is beneficial to shareholder value.

Firms with more short-horizon investors may also attempt to adjust to market conditions by turning over the executive team.[4] 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

[3] 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.

[4] 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.

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 negative shock. To test this identifying assumption, we perform a placebo test. We 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 before the tariff cuts between firms with different level of short-term institutional ownership. 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 would undermine our interpretation of the empirical evidence.

To address this concern, we perform several tests. First, in Panel B of Table 6, we lag the ownership variables by four years. While firms with high short-term institutional ownership always tend to attract short-term investors, it is unlikely that tariff cuts, and the

firms' ability to cope with competitive pressure, could be anticipated so far in advance. 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. 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 cross-sectional variation in institutional ownership due to index inclusions. Boone and White (2015) show that on average firms included in the Russell 2000 tend to have more short-term institutional ownership. Columns 1 and 2 in Panel A of Table 7 confirm that Russell 2000 index inclusions have a strong positive impact on the proportion of short-term institutional ownership. Since inclusion criteria are based on firms' market capitalization as of an annual reconstitution date, index inclusions cannot be easily controlled by firms and are therefore unlikely to carry information on the firms' subsequent sales, investment and employment. Thus, exploiting variation in index inclusions helps us to address the reverse causality problems. [5]

We exploit the findings in Panel A to construct instrumental variables. Since we need to instrument both *% Short-term Investors* and *cut* × *% Short-term Investors*, in Panel A we present two first stages.

[5] Firms included in the Russell 2000 may however be different along other characteristics, especially because to maintain power and to have enough tariff cuts in the sample we do not limit the estimation to firms that are at the top of the Russell 2000 and at the bottom of the Russell 1000 as for instance Appel, Gormley and Keim (2016). We address the possibility of omitted factors in Subsection 4.4.5. Here we note that our results would be robust if instead of the Russell 2000 index inclusions we used the S&P1500 index inclusions.

The second stage estimates in Panel B of Table 7 show that our results are robust when we exploit exogenous variation in short-term institutional ownership confirming that reverse causality is unlikely to drive our findings. The coefficients are larger than in the baseline specifications, suggesting that endogeneity problems are likely to induce a downward bias and to work against our findings. This may be the case because short-term investors decrease their holdings in firms that are worst affected by negative shocks leading us to over-state short-term ownership, which we measure at *t-1*, in the firms that will have worse performance following the tariff cut.

The results of the Kleibergen Paap rk Wald F statistics show that our instruments are not weak in all specifications with the exception of the ones reported in columns 4, 8 and 12 of Panel B, where we include interactions of industry and year fixed effects and control for institutional ownership and the differential effect of institutional ownership after the tariff cuts. By controlling for the effects of the overall institutional ownership, we mitigate the concern that index inclusion may affect firm performance through other changes in ownership structure, such as the proportion of shares held by index funds. Subsection 4.4.5 provides further evidence that omitted factors affecting firms' exposure to tariff cuts are not driving 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 bankruptcy, delisting, 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 negative shocks.

To evaluate this alternative explanation, we compare the rate of exit either due to bankruptcy and delisting (death) or including also acquisitions (exit) between firms with different short-term institutional ownership.[6] The death (exit) rate of firms with a proportion of short-horizon investors above the median is 0.4 (0.1) percent; the corresponding death and exit rates for firms with share of short-horizon investors below the median are 3 percent and 1 percent, respectively. Thus, the exit and death rates are lower, not higher for firms with short-horizon investors, suggesting that any selection problems should make our results weaker.

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, confirming that the pressure exercised by short-term investors is beneficial and facilitates restructuring after large permanent negative shocks.

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 response to increased competitive pressure. While it is impossible to provide a statistical demonstration that this is not the case, it is comforting that our estimates appear

[6] Specifically, following Bhattacharya et al. (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).

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 gain 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 also control for leverage and include an interaction between a firm's leverage and the dummy cut. In 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 and are faster in adjusting to different economic environments. Columns 1 to 6 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.[7] We then evaluate whether these firms react

[7] 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).

differently to shocks. In columns 7 to 9 of Panel B of Table 9, we find no evidence that this is the case.

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, an investor which is not transient or dedicated is considered a passive investor, which follows the index. Therefore, the estimates in columns 1 to 3, also imply that our results are not due to passive investors, which are also known to improve 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.

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 industry restructuring.

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 deregulations, 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 has been shown to lead to long-term underperformance (e.g., Harford, Kecskes and Mansi, 2014). We show that these results are reversed in the aftermath of permanent negative shocks that alter a firm's economic environment and require changes in firm strategy.

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

These results suggest that investors' short horizons may be particularly beneficial in fostering firm performance in dynamic economic environments. Under these conditions,

firms and economies with short-horizon investors may appear more dynamic and avoid stagnation.

These benefits are important even in the light of the costs associated with short-termism highlighted in previous literature. The permanent negative shocks to which the benefits of short-term ownership are associated may not have been frequent, but their incidence is increasing with the process of globalization and the introduction of more radical innovations. More crucially, permanent negative shocks have a large downside for firms and economies. Firms that fail to restructure 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.
Employee Growth	The difference between the natural logarithm of a firm's number of employees in year t and year $t-1$. Winsorized so that the maximum is no more than 1 and minimum no less than -1. Source: COMPUSTAT.
Executive Turnover	The number of 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 (2015).
Post Cut	A dummy variable equal to one for five years following a large tariff rate 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.
Russell 2000	A dummy variable that takes value equal to one for stocks that are included in the Russell 2000 index and zero otherwise.
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 1-2, employment growth in columns 3-4, and PPE growth in columns 5-6. "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)
Cut × % Short-term Investors	0.143*	0.100	0.134**	0.081	0.181***	0.154***
	(0.073)	(0.078)	(0.060)	(0.061)	(0.057)	(0.057)
High WP × Cut × % Short-term Investors	0.188**	0.197**	0.235***	0.193***	0.133**	0.129**
	(0.075)	(0.077)	(0.067)	(0.067)	(0.061)	(0.058)
% Short-term Investors	0.190***	0.053	0.173***	0.115***	0.257***	0.262***
	(0.031)	(0.046)	(0.026)	(0.038)	(0.027)	(0.037)
ROA	0.142***	0.256***	0.107***	0.168***	0.076***	0.114***
	(0.014)	(0.023)	(0.009)	(0.015)	(0.009)	(0.013)
Observations	21,957	21,690	21,498	21,226	22,284	22,020
R-squared	0.209	0.348	0.175	0.324	0.173	0.347
Firm FE	NO	YES	NO	YES	NO	YES
Year FE	NO	NO	NO	NO	NO	NO
Industry x Year FE	YES	YES	YES	YES	YES	YES

Table 4: Long-term Effects

The dependent variable is Tobin's Q in Panel A and ROA (t+1) 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 are clustered at the firm level and are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Tobin's Q

	(1)	(2)	(3)	(4)	(5)
Post Cut × % Short-term Investors	1.133***	0.770**	0.636*		
	(0.233)	(0.310)	(0.330)		
Post Cut	-0.187***	-0.226***		-0.234***	
	(0.033)	(0.042)		(0.037)	
% Short-term Investors	0.831***	1.012***	0.964***		
	(0.214)	(0.236)	(0.257)		
Post Cut × Churn				4.444**	4.717**
				(1.999)	(2.098)
Churn				2.813*	2.684*
				(1.502)	(1.612)
% Institutional Investors	-0.602***	-0.698***	-0.561***	-0.576***	-0.449**
	(0.107)	(0.121)	(0.140)	(0.170)	(0.188)
Post Cut × % Institutional Investors		0.191*	0.271**	0.043	0.041
		(0.112)	(0.126)	(0.179)	(0.194)
ROA	0.065	0.064	0.063	-0.024	-0.030
	(0.057)	(0.057)	(0.060)	(0.049)	(0.051)
Leverage	0.280***	0.280***	0.304***	0.333***	0.350***
	(0.063)	(0.063)	(0.065)	(0.055)	(0.058)
Size	-0.286***	-0.286***	-0.359***	-0.263***	-0.327***
	(0.026)	(0.026)	(0.030)	(0.024)	(0.027)
Observations	24,661	24,661	24,107	27,282	26,739
R-squared	0.623	0.623	0.678	0.638	0.687
Firm FE	YES	YES	YES	YES	YES
Year FE	YES	YES	NO	YES	NO
Industry x Year FE	NO	NO	YES	NO	YES

Table 4 continued.

Panel B: ROA (t+1)

	(1)	(2)	(3)	(4)	(5)
Post Cut × % Short-term Investors	0.085*	0.126**	0.143*		
	(0.051)	(0.061)	(0.074)		
Post Cut	-0.000	0.004		0.000	
	(0.007)	(0.010)		(0.010)	
% Short-term Investors	0.005	-0.016	-0.033		
	(0.049)	(0.055)	(0.064)		
Post Cut × Churn				1.322***	1.581***
				(0.392)	(0.512)
Churn				0.268	0.215
				(0.307)	(0.355)
% Institutional Investors	-0.037	-0.026	-0.017	-0.059*	-0.056
	(0.024)	(0.026)	(0.032)	(0.034)	(0.040)
Post Cut × % Institutional Investors		-0.021	-0.025	-0.096**	-0.118**
		(0.023)	(0.028)	(0.038)	(0.046)
Leverage	-0.055*	-0.055*	-0.052	-0.057**	-0.059**
	(0.032)	(0.032)	(0.033)	(0.029)	(0.029)
Size	0.019**	0.019**	0.023***	0.023***	0.026***
	(0.008)	(0.008)	(0.009)	(0.008)	(0.009)
Observations	22,437	22,437	21,884	24,751	24,223
R-squared	0.640	0.640	0.668	0.658	0.682
Firm FE	YES	YES	YES	YES	YES
Year FE	YES	YES	NO	YES	NO
Industry x Year FE	NO	NO	YES	NO	YES

Table 5: Mechanisms

Panel A: Advertising Growth

The dependent variable is advertising growth. 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.

	(1)	(2)
Cut × % Short-term Investors	0.251**	0.275**
	(0.104)	(0.122)
Cut	0.044***	
	(0.015)	
% Short-term Investors	0.020	-0.063
	(0.092)	(0.104)
% Institutional Investors	0.009	0.043
	(0.040)	(0.044)
Cut × % Institutional Investors	-0.113***	-0.099*
	(0.043)	(0.051)
ROA	-0.091***	-0.088***
	(0.014)	(0.014)
Observations	23,028	22,496
R-squared	0.218	0.284
Industry FE	YES	NO
Year FE	YES	NO
Industry x Year FE	NO	YES

Table 5 continued.

Panel B: Product Differentiation

The dependent variable is the change in product differentiation, measured using the textual measure of product overlap of Hoberg and Phillips (2015). All models include a constant, and fixed effects as described in the table, whose coefficients are not reported. Standard errors are clustered at both the firm level and year level and are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)
Cut × % Short-term Investors	-0.129**	-0.128**	-0.125**
	(0.045)	(0.047)	(0.049)
Cut	0.019	0.019	0.019
	(0.015)	(0.015)	(0.016)
% Short-term Investors	-0.025	-0.031	-0.032
	(0.035)	(0.037)	(0.036)
% Institutional Investors	-0.013	-0.012	-0.021
	(0.025)	(0.026)	(0.027)
ROA		0.024	0.018
		(0.024)	(0.029)
Leverage			-0.004
			(0.013)
Size			0.006
			(0.008)
Observations	14,256	14,242	14,210
R-squared	0.064	0.064	0.064
Firm FE	YES	YES	YES
Year FE	YES	YES	YES

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
Year FE	NO	NO	NO	NO	NO	NO
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 *Russell 2000* and *Cut × Russell 2000*. Columns 1 and 2 relate *% Short-term Investors* and *Russell 2000*. Panel A also reports the first stage of the IV regression for the two endogenous variables *% Short-term Investors* (columns 3-6) and *Cut × % Short-term Investors* (columns 7-10). 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)	(6)	(8)	(9)	(10)	(11)
Russell 2000	0.022***	0.054***	0.025***	0.059***	0.015***	0.015***	-0.006***	-0.000***	-0.011***	0.000*
	(0.002)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)	(0.001)	(0.000)	(0.001)	(0.000)
Cut × Russell 2000			-0.008***	-0.019***	-0.003	-0.003	0.040***	0.042***	0.046***	0.012***
			(0.003)	(0.004)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	(0.003)
Cut			0.004***				0.079***			
			(0.002)				(0.002)			
% Institutional Investors					0.259***	0.259***			0.064***	0.000**
					(0.004)	(0.004)			(0.002)	(0.000)
Cut × % Institutional Investors						0.003				0.260***
						(0.006)				(0.007)
ROA	0.013***	0.026***	0.013***	0.026***	-0.006***	-0.006***	0.003*	0.005***	-0.003***	-0.001**
	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Observations	25,017	24,780	25,017	24,780	24,780	24,780	25,017	24,780	24,780	24,780
R-squared	0.607	0.261	0.608	0.262	0.623	0.623	0.573	0.533	0.587	0.761
Industry FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Firm FE	YES	NO	YES	NO	NO	NO	YES	NO	NO	NO
Year FE	YES	NO	YES	NO	NO	NO	YES	NO	NO	NO
Industry x Year FE	NO	YES	NO	YES	YES	YES	NO	YES	YES	YES

Table 7 continued.

Panel B: Second Stage

Dependent Variable	Sales Growth				Employment Growth				PPE Growth			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Cut × % Short-term Investors	0.760**	1.020***	1.006***	3.871*	0.624**	0.832***	0.806***	2.737*	0.692***	0.776***	0.739***	2.834**
	(0.305)	(0.297)	(0.356)	(1.975)	(0.272)	(0.234)	(0.301)	(1.599)	(0.223)	(0.209)	(0.263)	(1.442)
% Short-term Investors	1.020***	0.524***	2.923***	2.266***	1.807***	0.610***	3.052***	2.602***	1.080***	0.576***	2.803***	2.310***
	(0.343)	(0.099)	(0.551)	(0.473)	(0.335)	(0.081)	(0.525)	(0.460)	(0.278)	(0.081)	(0.462)	(0.410)
Cut	-0.071**				-0.054**				-0.058***			
	(0.029)				(0.026)				(0.022)			
% Institutional Investors			-0.833***	-0.608***			-0.852***	-0.698***			-0.772***	-0.604***
			(0.154)	(0.126)			(0.146)	(0.124)			(0.128)	(0.110)
Cut × % Institutional Investors				-0.979*				-0.662				-0.719*
				(0.522)				(0.424)				(0.383)
ROA	0.264***	0.127***	0.170***	0.169***	0.150***	0.088***	0.134***	0.134***	0.112***	0.062***	0.102***	0.101***
	(0.023)	(0.014)	(0.015)	(0.016)	(0.016)	(0.010)	(0.011)	(0.011)	(0.013)	(0.009)	(0.010)	(0.010)
Observations	22,232	21,958	21,958	21,958	21,788	21,499	21,499	21,499	22,566	22,285	22,285	22,285
Kleibergen-Paap rk Wald F statistics	31.36	50.442	19.519	5.125	29.931	7.841	18.574	4.993	32.425	52.718	20.227	5.526
Industry FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Firm FE	YES	NO	NO	NO	YES	NO	NO	NO	YES	NO	NO	NO
Year FE	YES	NO	NO	NO	YES	NO	NO	NO	YES	NO	NO	NO
Industry x Year FE	NO	YES	YES	YES	NO	YES	YES	YES	NO	YES	YES	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	0.007***	0.004**	0.004**	0.001***	0.001**	0.001**
	(0.002)	(0.002)	(0.002)	(0.000)	(0.000)	(0.000)
% Institutional Investors		0.093***	0.096***		0.044***	0.042***
		(0.007)	(0.007)		(0.001)	(0.001)
ROA		0.027***	0.032***		0.006***	0.005***
		(0.003)	(0.003)		(0.001)	(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	0.639	0.652	0.657	0.788	0.826	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 and Leverage

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

Dependent Variable	Sales Growth	Employment Growth	PPE Growth	Sales Growth	Employment Growth	PPE Growth
	(1)	(2)	(3)	(4)	(5)	(6)
Cut × % Short-term Investors	0.246***	0.150**	0.273***	0.251***	0.157**	0.279***
	(0.091)	(0.075)	(0.070)	(0.091)	(0.074)	(0.069)
% Short-term Investors	0.189***	0.236***	0.344***	0.172***	0.226***	0.334***
	(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***
	(0.027)	(0.023)	(0.023)	(0.027)	(0.023)	(0.023)
Cut × % Institutional Investors	-0.050	-0.009	-0.048*	-0.049	-0.009	-0.047*
	(0.031)	(0.027)	(0.025)	(0.031)	(0.027)	(0.025)
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)
ROA	0.264***	0.172***	0.120***	0.281***	0.163***	0.113***
	(0.023)	(0.015)	(0.013)	(0.025)	(0.015)	(0.014)
Observations	21,685	21,224	22,020	21,640	21,180	21,972
R-squared	0.352	0.325	0.350	0.351	0.325	0.349
Firm FE	YES	YES	YES	YES	YES	YES
Year FE	NO	NO	NO	NO	NO	NO
Industry x Year FE	YES	YES	YES	YES	YES	YES

Table 9 continued.

Panel B: Firm Size, R&D, and Family Block Ownership

This table reports the baseline regression tests of Table 2 with additional controls for firm size (columns 1-3), measured as natural logarithm of total assets, R&D expenditure (columns 4-6), and family block ownership (columns 7-9). 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	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	0.256***	0.170**	0.288***	0.238***	0.161**	0.284***	0.241***	0.160**	0.284***
	(0.091)	(0.074)	(0.070)	(0.090)	(0.074)	(0.069)	(0.090)	(0.074)	(0.069)
% Short-term Investors	0.170***	0.227***	0.325***	0.180***	0.226***	0.330***	0.177***	0.228***	0.331***
	(0.056)	(0.041)	(0.043)	(0.056)	(0.041)	(0.043)	(0.056)	(0.041)	(0.043)
% Institutional Investors	-0.142***	-0.181***	-0.172***	-0.106***	-0.099***	-0.065***	-0.106***	-0.095***	-0.063***
	(0.028)	(0.025)	(0.025)	(0.027)	(0.023)	(0.023)	(0.027)	(0.023)	(0.023)
Cut × % Institutional Investors	-0.057*	-0.008	-0.034	-0.040	-0.009	-0.049*	-0.054*	-0.015	-0.052**
	(0.034)	(0.029)	(0.027)	(0.031)	(0.027)	(0.025)	(0.031)	(0.027)	(0.025)
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)						
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)
ROA	0.236***	0.126***	0.058***	0.257***	0.168***	0.113***	0.256***	0.168***	0.114***
	(0.023)	(0.016)	(0.014)	(0.023)	(0.015)	(0.013)	(0.023)	(0.015)	(0.013)
Observations	21,690	21,226	22,020	21,685	21,226	22,020	21,690	21,226	22,020
R-squared	0.351	0.335	0.367	0.350	0.325	0.347	0.349	0.325	0.347
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	NO	NO	NO	NO	NO	NO	NO	NO	NO
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, investor activism, and ownership concentration. 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
Year FE	NO	NO	NO	NO	NO	NO	NO	NO	NO
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

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