WORKING PAPER

THE STICKY AND THE SLIPPY: DO PAYOUTS CROWD OUT INVESTMENTS? CAUSAL EVIDENCE FROM RATCHET BEHAVIOUR.

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The sticky and the slippy:
Do payouts crowd out investments? Causal evidence from ratchet behaviour.

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Abstract

Despite increasing indebtedness and profitability, US stock-listed corporations are experiencing declining investment rates. This trend aligns with the financialization hypothesis, which suggests that rising shareholder payouts crowd out investments by depleting internal and capturing external funds. However, the lack of a precise distributional mechanism in the literature leaves the demonstrated negative correlation between payouts and investments vulnerable to the critique of reverse causality.

Using data from all US stock-listed firms, this paper adopts a distributional battlefield conception of the firm to pinpoint when funds are redistributed from investments to shareholders. I argue that it is not rising payouts that crowd out investments, but rather their inability to fall. When shareholder refuse to yield ground when profits decline, they ratchet up payout ratios by cutting back on investments and taking on debt.

I first illustrate that the downward rigidity of shareholder remuneration structures aggregates investment rates based on the frequency of such ratchet behavior. Using a staggered difference-in-differences methodology, I then demonstrate that these ratchet events not only redistribute funds from investments to shareholders contemporaneously but also persistently over the ensuing years.

Contents

1 Introduction

Capital expenditures by non-financial corporations are a central component of our economic system, contributing to current aggregate demand, future output potential, and productivity growth. The post-war era saw sustained high levels of these expenditures, but recently this engine has faltered. Gutiérrez and Philippon (2017) showed that corporate fixed investments have been low—especially when compared to corporate fundamentals like cash flow and equity valuations—since the early 2000s. Alexander and Eberly (2018) found that, excluding residential and IP investments, capital investments as a share of GDP have been trending down since the late 1980s, with a pronounced decline since the early 2000s. These observations are confirmed at both the aggregate and firm levels.

Figure 1 shows the dramatic fall in investment rates among US stock-listed corporations over recent decades. This decline is not merely a result of the late 1990s investment boom or the Great Financial Crisis; rather, it is a gradual downward trend across consecutive business cycles. Both peaks and troughs follow a downward path. Whether measured as a percentage of fixed capital or total assets, the rate of investment in fixed capital is falling.

Note that Figure 1 depicts the average investment rate of the average stock-listed firm (within each size category) in a non-mathematical sense. The ratio is constructed to avoid domination by large firms or outliers, following the methodology developed by Mertens (2025) and outlined in Appendix A.2. This trend therefore reflects a generalized decline across all stock-listed firms, not just large ones. The decline is even more pronounced when capital expenditures are measured against total assets, with recent numbers being nearly half of what they were in 1990, before the mid-to-late 1990s investment boom.

These observations on declining investment rates over the last two decades are puzzling and concerning, and the literature has yet to settle on an explanation.

After a quick overview of some contending hypotheses concerning the fall of investment rates among stock-listed firms, this paper reassesses the hypotheses originating in the financialization literature. Crucial here is the conception of the firm as a battlefield of contending interests, where the firm's different stakeholders must claim their share of firm income drawing on all the power—institutional, structural, or ideational—they can muster. This essentially Post-Keynesian view of the firm conceives the allocation of firm resources not as an issue of efficiency, but as a distributional one.

The antithetical relationship between shareholder payouts and corporate fixed investments—internal and external firm resources can only be allocated to one or the other—has been the subject of much work among financialization scholars and has seeped into more mainstream debates recently (Almeida et al., 2016; Gutiérrez & Philippon, 2017). A crucial point of contention, however, is the difficulty of determining the causality of the crowding-out hypothesis and addressing the critique of reverse causality (Kahle & Stulz, 2021).

This paper reassesses this crowding-out hypothesis in light of the recent contribution by Mertens (2024), which introduces a novel empirical operationaliza-

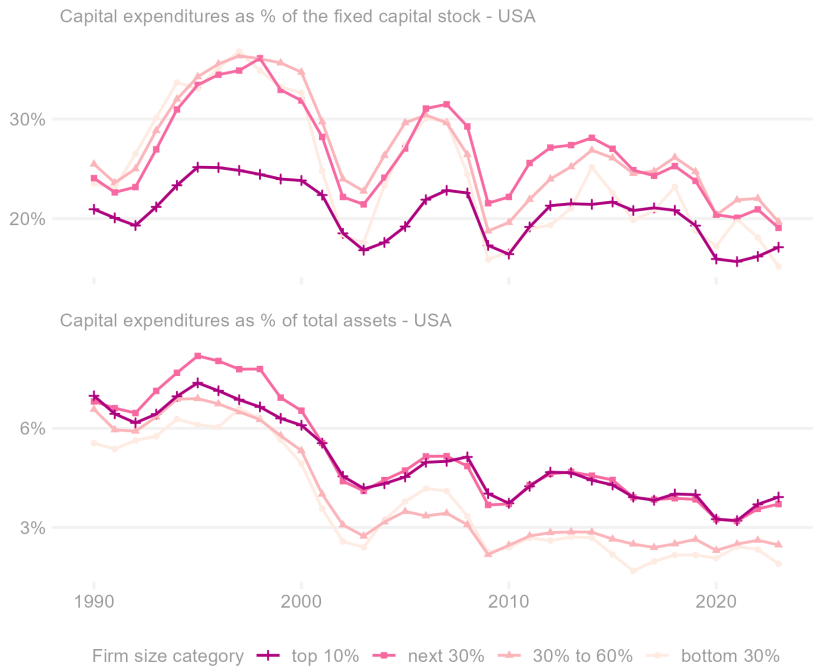

Figure 1: Falling firm level investment rates across the size distribution
Notes : All firms are equally weighted in order to give an idea of the development with respect to investment rates among the average - in the non-mathematical sense of the word - US stock listed firm. Size categories are based on the distribution of firm revenues.

tion of shareholder value orientation that lends itself to a more causal approach to explore the crowding-out hypothesis. Conceiving the firm as a battlefield between contending interests draws attention to moments that bring that conflict to a climax: when resources become scarce. Mertens (2024) shows that shareholder primacy operates through the downward rigidity of shareholder remuneration in times of crisis. Firms tend to display downward sticky payouts in the face of falling profits (i.e. ratchet behaviour, given that payouts can only move in one direction), and it is precisely these episodes of falling profits coinciding with downward rigid payouts that drive up firm-level and aggregate payout ratios, not only contemporaneously, but persistently over the ensuing years. Ratchet behaviour epitomizes the notion of shareholder primacy, as when push comes to shove, shareholder interests are prioritized over all else's, even at the cost of - as I will show in this paper - firm fixed investments.

Section one introduces the puzzle of falling investment rates and the financialization perspectives before presenting a revised crowding-out hypothesis. Section two provides an aggregate view of the data that supports the (revised) crowding-out hypothesis and tentatively suggests causality. Section three de-

velops a staggered difference-in-differences methodology that further explores the causality of the revised crowding-out hypothesis at the firm level. The last section concludes.

2 what can(not) explain falling investments?

What could explain this steady downward trend? Several contending theories have been suggested to explain the puzzle of falling investment rates. A few options are discussed briefly below. Note that Gutierrez and Philippon (2016) addressed these issues more thoroughly in their paper on the topic.

2.1 Profitability, the cost of external finance and compositional shifts

The first obvious place to start looking for an explanation is firm fundamentals such as profitability and revenues. Investments are - at least partially - paid out of retained earnings - and thus profits. Moreover, profit marins and the growth of revenues are often an expression of the business cycle and therefore an aggregate approximation of investment opportunities. If profit margins are in decline, they can be the root cause for falling investment rates, simply because firms do not generate sufficient cash flow for financing potential investment opportunities or because the economy is so depressed that investment is deemed unprofitable due to lack of demand.

It is well known that aggregate corporate profits - and revenues - have risen to record highs over the last decades in the US economy. However, when considering the *average firm* - as in Figure 1, the situation is a bit more nuanced. Appendix B3 shows the evolution of profit margins among US stock listed firms, split by firm size, where each firm is weighted equally, irrespective of size. Even though the top 10% of US firms have indeed been able to raise their profit margins recently, in general, profit margins are fairly flat over time - gently rolling along with the business cycle - even for these largest US listed firms. Over the last decades there has been a light divergence where the top firms detach themselves from the rest in terms of profitability, but the decline in investments however, is a more general trend across the size distribution (and sectors) and at least since the 2000s. Profitability and investment rates clearly comove as both tend to be driven by the business cycle and thus reflect fluctuations in aggregate demand. Crucially however, this comovement happens around a different trend, the first fairly flat, the other decisively downwards. So although the disconnect in the time trends of profitability and investment rates is less harsh than the aggregate numbers - driven by the largest firms - would suggest, it is still clearly present.

If the cause of falling investment rates does not originate in an internal financing constraint, it might be due to an external one. Another logical place to look is thus the cost of external financing - the interest rate borne by corporations on their bonds and loans and the potential for equity issuance. However,

adding the cost of capital into the picture makes the decline in investments even more puzzling, as interest rates have gradually declined since the end of the '80s - with real interest rates occasionally even hitting negative territory, while stock market valuations have been rising. All this while, investments have been falling over the consecutive cycles.

Gutierrez and Philippon therefore "discard theories that predict low investment because they predict low Q and focus on theories that predict a gap between Q and investment" (2016, p. 2). And indeed, standard models trying to explain corporate fixed investments based on fundamentals - such as profitability, interest rates and Q - have been yielding negative year fixed effects consistently from the 2000 onwards (Alexander & Eberly, 2018, p.11), suggesting that these fundamentals indeed can no longer explain declining investment rates.

Could the fall of investments then be caused by some exogenous technological process - such as a fall in the cost of investment goods or the disappearance of investment opportunities. However, laying the figures for US companies next to those for their European counterparts (see Appendix B2 and B3), which show a similar evolution of profitability but crucially a nondeclining one for investments, casts doubt on this overarching exogenous hypotheses. Why would the cost of investment goods decline so sharply in the US but not in Europe (The China shock was felt across the developed world, as was computerization, the shift to services and the rise of intangibles).

Finally, Appendix B1 shows that the decline in investment rates is not driven by compositional shifts either, as it is apparent across many if not all economic sectors.

2.2 Financialization, varieties of crowding out and reverse causality

Among heterodox economists, a body of research has developed over the last few decades on the potential detrimental effects of financial liberalizations and the advent of shareholder primacy as doctrine of corporate governance. Some scholars - among others the contributors to the seminal volume edited by Epstein (2005) - observed trends that challenge the unanimously claimed positive developments of the '80s and '90s, which aimed to liberate shareholders, rein in managers and labor unions, and unleash the disciplining power of finance to ensure firms' priorities were set correctly.

As efficiency trumps distribution and market forces enforce the efficient allocation of resources, the steady increase in corporate payouts over recent decades has largely gone unnoticed or underappreciated by most (although this has started to change recently, see Kahle & Stulz (2021)). Heterodox economists, however, did notice (see Epstein (2005)), as they understand that distributional conflict among stakeholders is central to the allocation of resources within our economies and societies.

From this insight emerged the concept of corporate financialization (Rabinovich & Reddy, 2024), which essentially entails the - at least partial - triumph

of one stakeholder - shareholders - over the others through the advent of shareholder value orientation (Lazonick & O'Sullivan, 2000) as the dominant form of corporate governance. This form of governance places shareholders above all other stakeholders, claiming that shareholders are the ultimate owners and that their interests should be prioritized above all others (Jensen & Meckling, 1976).

Scholars working on financialization have implicitly or explicitly drawn on the battlefield conception of the firm to point at the potential consequences of shareholder value orientation as a form of corporate governance. Consequences not only for other stakeholders but also for wider society (Palladino, 2021; Tomaskovic-Devey et al., 2015).

Among economists, such redistributive consequences of shareholder power are accepted as normal or even efficient when it comes to cost items - such as employees' labour compensation - as costs need to be minimized for the sake of efficiency and thus productivity. If these lower costs are passed on into prices, then society as a whole might benefit from the efficiency gains (although the dynamic consequences of the generated inequality might nullify these benefits).

However, investments are never really part of that picture of redistribution and efficiency, as they are not a cost to be minimized in order to raise profitability and shareholder value. On the contrary, investment are considered a requisite for current and future growth, innovation and competitiveness. So shareholders - in their collective rationality - would not infringe on their firm's future by underinvesting today as it would harm their future selves. A potential tradeoff between shareholder remuneration and investments would therefore not be considered. One assumes that shareholder payouts are a residual category, coming after funds for investments have been set aside.

However, corporate financialization claims that shareholder value orientation, the primacy of shareholder interests, has become so dominant in the USA that it suffocates firms in their ability to invest over a longer horizon, induces short termism in corporate decision making and reduces overall investments to suboptimal levels. Shareholder payouts (and financial investments) thus can crowd out productive investments as the former drain the internal funds available for the latter (Stockhammer, 2006; van Treeck, 2009; Davis, 2018; Tori & Onaran, 2018, 2020, 2022). Corporate financialization however not only suggests a delinking between investments in fixed capital and internal funds, but also with external ones, namely debt (Mason, 2015). Both internal and external funds are instead allocated to cash payments to shareholders in the form of dividends and share repurchases. This boils down to the key idea that the payout decision is made prior to the investment one and would imply that the market as a whole is dysfunctional when it comes to allocating sufficient resources to corporate fixed investments.

A lot of empirical work among financialization scholars was conducted over the last two decades on the potential negative effect of financialization indicators on corporate fixed investments. Through econometric panel regressions, authors working on the crowding out hypothesis have shown that investments are indeed negatively correlated with shareholder primacy. I refer to the work of Davis (2018) for a review of the empirical literature. However, the causality of

this crowding out has never been established. It could well be that investments are falling for some completely unrelated reason and that firms are consequently left with more internal funds than they can use productively. Reverse causality could thus never be ruled out, which left financialization scholars vulnerable to the critique that reduced investment opportunities precede - and indeed cause - the rise of the payout ratio (Grullon & Michaely, 2004; Kahle & Stulz, 2021). Another issue with existing empirical research on the crowding out hypothesis is that it underestimates the relationship between payouts and investments because of technical feautures of the data. In empirical models using firm-level data - such as those developed by Orhangazi (2008), Barradas (2017), Davis (2018b) or Tori & Onaran (2018, 2020, 2022) - the authors relate investments to financialization by regressing the former on a form of payouts (be it dividends, repurchases or both). In order to ensure that the regression makes sense, the two variables of interest are normalized by some other variable, be it the stock of fixed capital, revenues or total assets. First, Mertens (2025) showed that the choice of this normalization variable far from trivial as not all normalizations make sense from a theoretical perspective nor do they they all allow for intersectoral comparisons and because the choice of the normalization will often shape the direction of the obtained results. Finally, where the normalization variable does make sense from a theoretical point of view it can bring about technical issues not accounted for in many studies, most notably, the issue of negative values (Sündal, 2023; Mertens, 2025), which would lead to an underestimation of the correlation between the payout variable and the investment rate.

The fundamental puzzle of both profit and debt without investments therefore remains. Arguably this inability to substantiate the causality of the crowding out hypothesis stems from the lack of a precise redistributive causal mechanism in the theory. It doesn't clearly state how precisely the flow of firm income is being redirected from one stakeholder (investments) to another (shareholders). While the 'how' might seem irrelevant, each instance involves a discrete decision by management and subsequent approval by shareholders to reallocate cash that would have otherwise been used for investment. Given the specificity of investment as a noncost item - and therefore not simply an expense that needs to be minimized - it is likely that a catalyst is required for such a nontrivial decision to be made. It is therefore that decision we should be looking into as it can inform us about the causality of the relationship between the two variables of interest.

2.3 The revised crowding-out hypothesis and the suggestion of causality

One interesting avenue for better capturing the causal nature of the crowding-out hypothesis is presented in a recent contribution by Mertens (2024). The author proposes a new way of operationalizing shareholder value orientation and identifies specific firm behavior that ratchets up payout ratios at the firm level. As the financialization literature suggests that falling investment rates are the corollary of rising payout ratios, identifying the precise behavior that raises

firm-level and aggregate payout ratios might also explain the fall in firm-level investment rates.

Mertens (2024) shows that shareholder primacy operates through the downward rigidity of shareholder remuneration in times of crisis. When profits decline but shareholder remunerations remain unchanged, SVO as a concept becomes practice. Firms tend to display downward sticky payouts in the face of falling profits, and it is precisely these episodes of falling profits coinciding with downward rigid payouts that drive up firm-level and aggregate payout ratios. This increase is not only due to a short-term mechanical spike but persists over subsequent years. The payout ratio remains elevated for over ten years after the ratchet event due to a combination of slow mean-reversal, dynamic consequences of the event, fractional adjustments during recovery, and periodic negative shocks.

If ratchet behavior is the empirical embodiment of shareholder value orientation, and since the financial rentierization hypothesis— which blamed financial investments for crowding out capital expenditures — has been questioned by Rabinovich (2018) and Soener (2021), then ratchet behavior might explain the causal relationship between rising payout ratios and falling investment rates.

This paper starts from the premise that the shareholder's claim is no longer residual; rather, the triumph of the shareholder on the battlefield means that the payout decision comes first. However, this power is not absolute. Given the non-cost nature of investments, the redistribution from investments to shareholders needs a catalyst to manifest. If the firm is conceived as a battlefield of contending interests between stakeholders, including shareholders and investments, instances when resources are scarce bring this conflict to the forefront and provide the catalyst needed for the redistribution from the latter to the former.

Contrary to intuition and the existing literature, I argue that it is not rising payouts that crowd out investments, but precisely their reluctance to fall. Mertens (2024) showed that ratchet behaviour causes a persistent redistribution of firm income towards shareholders. Evidently, the cash shortfall created by declining profits and steady payouts needs to be bridged in some way, i.e. this redistribution must come at the expense of some other stakeholder. Either the firm takes on debt to cover for the gap between profits and payouts or it cuts back on other spending, such as investments. Any of the possible options likely affect firm performance down the road, as foregone investments (today or later on due to the reduced cash position), increased debt repayments or excessive restructuring of the labour force, all might weigh on the firm's ability to expand, innovate, or seize opportunities in the future.

The formulation of the crowding out hypothesis presented in this paper - that ratchet events cause private investments to fall persistently over many years - should be more robust to the critique of reverse causality. The reasons why investments are expected to decline persistently due to ratchet event can be summarized by the following three points:

1. As profits decline and shareholder payments remain steady, retained earn-

ings are reduced (or even negative), which can lead to short run cuts to investments. Cuts that wouldn't have been needed if payouts had been adjusted downwards.

2. As companies bridge the ratchet induced gap between steady payouts and falling profits with new unproductive debt, as shown in Figure 2, the accrued levels of required debt repayments in the years following the ratchet event might weigh on the firm's capacity to finance new investment projects - and seize opportunities - in the longer run.

3. As a result of persistently reduced investments, firm profitability might come under pressure in the longer run, which would feed back into the ability to kickstart investments.

In order to ascertain whether this revised hypothesis is likely, I need to show four things. First and foremost, ratchet events should be associated with lower investments. Second, the direction of the causality must go from payouts to investments. Third, the cutbacks to investments must be not only significant at the firm level, but also persistent over time. And finally, firm level ratchet behaviour should be of relevance for the whole economy, that is, the effect of ratchet events should be significant at the aggregate level as well.

3 Visualizing the battlefield conception of the firm

This section introduces the ratchet event and offers a first look into the data that suggests ratchet behaviour is indeed associated with reallocations from investments to shareholders at the firm level and that this translates to the wider economy. The next section will look into ways to reinforce the causal claim of the crowding out hypothesis through staggered difference in differences methodologies.

3.1 The ratchet event

First I need to formally define a ratchet event. The idea is simple: falling operating cash flow accompanied by steady or rising payouts. However, to accurately reflect the deliberate choice by management and shareholders to maintain steady payouts despite a decline in income, the definition needs to be further refined. First of all, the company must have had payouts in the year of the event, so that steady payouts at zero are not included. Second, the minimal decline in operating income considered corresponds to the 3rd quartile of negative operating income shocks (with respect to a lagged three year rolling average) among the population of US firms (12.5% decrease). Finally some minor requirements are added in order to better reflect the key idea of the ratchet event. Firstly, the decline in operating cash flow cannot be caused by the base effect of a windfall gain in the previous year. Second, the company cannot die in the ten years

following the event to makes sure that our results do not simply capture the divestment of decaying companies.

This leads to 6.408 individual events (note that some firms might undergo multiple ratchet events). If we further restrict our population to those firms that at one point in time will ever have positive payouts and to firms that actually report capital expenditures reliably and to firms from their 5th year of existence onwards, we end up with 44.336 treated observations (year-firm combinations) and 79.800 untreated ones. Of those last ones, 22.114 are not yet treated and 57.686 are never treated (i.e. the actual control group). These are the observations used in all the figures and estimations.

	Treated	**Untreated**	
		Not Yet Treated	*Never Treated*
		22.114	*57.868*
Observations	44.336	79.800	
Total		**124.136**	

Table 1: Number of firm-year observations in each treatment category.
Notes : Note first that the distribution over time of the ratchet events is quite uniform, as can be seen from the grey area in Figure 4. Note finally that the year from which ratchet events are registered - in this case 1990 - can be of importance too. Appendix C.1 revisits the event's periodization.

3.2 A first look into the consequences of ratchet behaviour

A first indication that ratchet behaviour might indeed have important and persistent redistributive consequences and might cause significant cutbacks to investment rates is provided by Figure 2. It shows how profit margins, payout ratios and investment rates evolve over the event time horizon. It represents a simple evolution of firm average values but then across event-time rather than historical time. Concretely, each line corresponds to the average evolution 10 years prior and then years after each firm's ratchet event in percentage deviation of the pre-event average level. For example, among the top companies, average investment rates after a ratchet event are - approximately - 15% lower than they were before the event. In raw numbers the investment rate drops to 0.18 from the pre-event average of 0.22 - expressed as capital expenditures as fraction of the stock of fixed capital. Note that the percentage change of the payout ratio was divided by two in order to enhance the readability of the figure. The true effect is therefore double the one displayed (for example for the top 10% of companies, ratchet events lead to an immediate 75% increase of the payout ratio vis-à-vis it's pre-ratcheting mean of 39.4%, i.e. a jump to a payout ratio of - on average - 69%) .

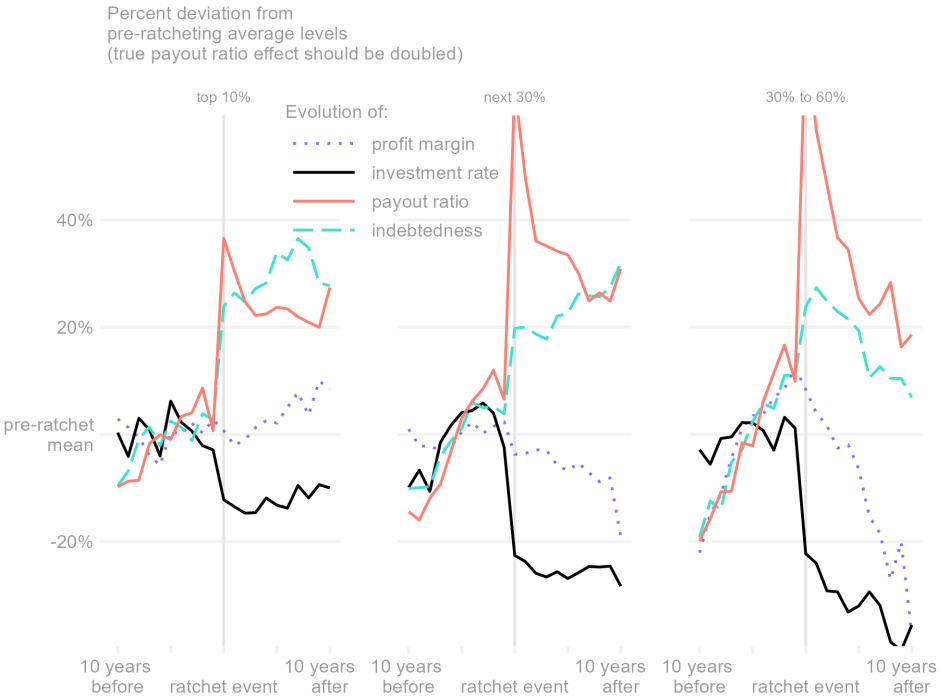

Figure 2: Potential redistributive consequences of ratchet events

Notes : This figure illustrates that ratchet events might indeed have redistributive consequences and cause the fall of investment rates. It shows that ratchet event redistribute firm income from investments in the fixed capital stock to shareholders. The x-axis represents time defined with respect to each firm's ratchet event. The y-axis is defined in percentage deviation of pre-event average levels of each variable. Note that the percentage change of the payout ratio was divided by four in order to enhance the readability of the figure. For example, among the top companies, average investment rates after a ratchet event are - approximately - 15% lower than they were before the event. In raw numbers the investment rate drops to 0.18 from the pre-event average of 0.22 - expressed as capital expenditures as fraction of the stock of fixed capital. Note finally that the bottom 30% is not displayed due to very negative profit margins as seen in Appendix B3.

The figure clearly shows - for each size group, and in Appendix B.6 additionally for each sector - that ratchet events not only cause payout ratios to rise and to remain higher - as developed in Mertens (2024), but also that investment rates get cut and stay persistently depressed in the years after. Debt levels tend to move in the opposite direction. Firms therefore seem to incur debt and cut back investments in order to free up cash to bridge the sudden gap between payouts and profits. The effect on profitability is more nuanced, but certainly among the companies outside of the top tier, profitability comes under pressure over the longer run - even though shareholder payouts remain more elevated for longer, as shown in Mertens (2024). Notably, although the reaction of payout ratios and investment rates are near universal across sectors (with the exception of Utilities), the post-ratchet evolution of profitability strongly depends

on firm size and on the sector under consideration, as shown in the Appendix B.6. Notably, if we would remove the Financial sector, the increase in average profitability among the top 10% of companies would almost disappear. Interestingly, among the important Technology sector, this redistributive effect of ratchet behaviour is very pronounced. Further research should investigate these intersectoral disparities and expand the analysis to multiple countries.

Appendix B.5 additionally reproduces Figure 2 for different periods and event definitions, all obtaining comparable results. For a discussion on this periodization, I refer to Appendix C.1

The debt incurred in order to pay for stable or increasing payouts during severe profit falls serves no productive ends, does not increase future capacity, nor does it develop new technologies. On the contrary, it precisely refrains firms from contributing to society, as these unproductive debts will have to be repaid later on. The only beneficiaries of such behaviour are of course shareholders, who are not likely to either consume or productively invest this extra cash, but probably simply contribute to the inflation of asset prices - be they residential property or shares. Such debt-financed redistribution away from productive investments towards wealthy shareholders does not only exacerbate inequalities on both accounts, but might pose a risk to financial stability as well.

This figure suggests something might be going on here but does not tell us whether the effect is significant at the firm level nor whether it is causal once we control for time trends and firm characteristics, nor does it yield any insights into the economic - or aggregate - significance of these consequences of ratchet behaviour. The aim of this paper is to move beyond the apparent correlation between payout ratios and investment rates and try to give more weight to the causality of the crowding-out hypothesis. However, in trying to establish causality (see Section 4 we shouldn't loose sight of the bigger picture, therefore the remainder of this section first wants to explore the economic - aggregate - significance of this relationship.

3.3 Stratification of investment rates

A first look at the real data shown in Figure 3 already suggests that the conribution of ratchet behaviour to the fall of investment rates might indeed be economically significant. Figure 3 groups the firms according to the frequency they display ratchet behaviour and shows each group's aggregate investment rate over time, split by size categories. The figure dynamically captures the effect of ratchet behviour as it occurs, meaning that all firms start in the "never" category and only switch to the next category on the year they exhibit ratchet behaviour. A firm performing a first ratchet event in 1999 and a second one in 2015, will jump to the "once" category in 1999 and stay in the "twice" group from 2015 onward.

What is immediately clear is the stratification of investment rates among the lines of the frequency a company displays ratchet behaviour. The more often it does so, the lower investments rates tends to be. Moreover, just as Mertens (2024) showed that each ratchet occurrence shifts the payout ratio upwards,

this paper its corollary, a downward pressure on investment rates. Both the

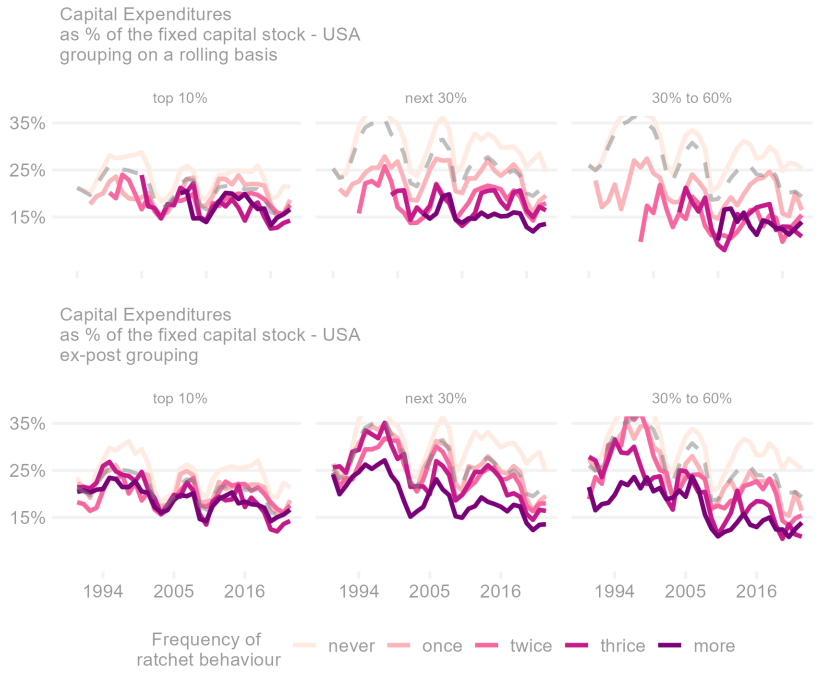

Figure 3: The frequency of ratchet behaviour coincides with lower investment rates

Notes : Each time a company displays ratchet behaviour, the company moves one place up in the ratchet hierarchy. Note finally that each category is only displayed from the moment it contains at least 20 constituents, in order to ensure visual clarity of the figure.

stratification pattern and the event-like shifts with respect to ratchet behaviour keep clearly emerging when splitting the population in groups based on size (as done here), age or sector of the firms. This means that the correlation between falling investment rates and ratchet behaviour is not confounded by compositional shifts, nor driven by a correlation between ratchet behaviour and age, etc. This means that within each group based on a certain firm characteristic, it is the frequency of ratchet behaviour that drives the level and decline of the investment rate over time. The fact that the pattern shown in Figure 3 emerges across all these categories gives further weight to the core proposition of this paper: it is the unwillingness of shareholders to yield ground that ratchets up the payout ratio over time and consequently depresses investment rates. This is a first indication that ratchet behaviour is a more fundamental feature of falling investment rates than these firm characteristics.

Note that the dashed line represents the average investment rates for the full sample of firms, any divergence between this line and the "never" category

can be seen as aggregate evidence for the downward pressure of ratchet events on firm level investment rates. It is clar that the decline in investment rates for the full sample is much more steep than for the group of firms that do not display ratchet behaviour. Note for example that investments among the biggest companies that never display ratchet behaviour remain fairly stable across the business cycle, while the full sample business cycle peaks undergo a downward trend. The gap between full sample and the never ratcheting group is widest among the runner up companies in terms of firm size, although a downward trend persists even among those that never exhibit ratchet behaviour. I refer to Appendix C.2 for further discussion on this point.

Finally, while compelling, an aggregate view might not reflect the behaviour of individual firms. For the hypothesis to be true, this aggregate stratification of investment rates needs to stem from individual firm behaviour. At the firm level, each ratchet event should not only cause a temporary drop in investments, but also cause investment rates to stay depressed in the ensuing years. This firm level persistence is the key to showing that there is a causal negative effect of SVO defined as ratchet behaviour on firm level investment rates and therefore of the process of corporate financialization on aggregate investment. In the next section, I will be able to discern the (average) causal effect of ratchet behaviour on investment rates at the firm level over time.

4 More formal test of causality with staggered difference in differences

When a firm exhibits ratchet behavior, it chooses to maintain steady payouts despite declining operating cash flow. This decision allows for a quasi-experimental design, comparing firms that make this decision (treated) with those that do not (untreated). This comparison helps determine the impact of ratcheting on the investment rate over time.

4.1 Parallel trends

A challenge with quasi-experiments is that we can only observe one outcome: a firm either ratchets or it doesn't. To measure the impact, we need to compare investment rates after ratcheting with a hypothetical scenario where the firm did not ratchet. Difference-in-Differences (DID) estimators address this by using control units to estimate counterfactual outcomes (Baker et al., 2022), assuming treated and control units follow parallel trends.

The parallel trends (PT) assumption cannot be directly tested, but it can be visually inspected. Figure 4 shows the outcome variable for both the never treated (control group) and the not yet treated firms (those that will undergo a ratchet event in the future but haven't yet). The shaded area represents the proportion of not yet treated firms, starting at 100% and ending at zero. Lines are shown only when there are at least 50 group members.

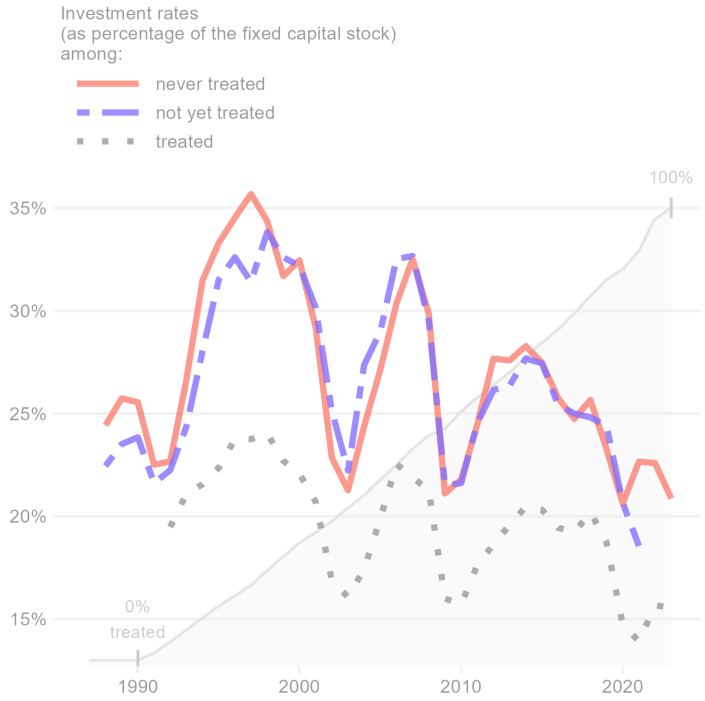

Figure 4: Parallel trends in payout ratios
Notes : The co-movement of investment rates in the control group with that of the treatment group before being subjected to the treatment suggests that the PT assumption holds. The grey line represents firms from the moment they undergo a ratchet event. Te shaded area represents the percentage of eventually treated firms that are not yet treated.

The data suggests that the PT assumption holds, as the investment rates of the not yet treated and never treated firms move together. The grey line shows the investment rates of firms that have already displayed ratchet behavior.

4.2 Staggered adoption and heterogeneous effects

Ratchet behaviour varies across firms, leading to staggered treatment adoption and necessitating a staggered Difference-in-Differences (DiD) methodology. This staggered adoption can bias the standard two-way fixed effects DiD estimator (Goodman-Bacon, 2019; de Chaisemartin & D'Haultfoeuille, 2020). Our hypothesis suggests that ratchet events have lasting but diminishing effects on investment rates, causing time-varying impacts. This time-induced heterogeneity is another source of bias for standard DiD estimators (Baker et al., 2022).

The methodologies developped by Sun and Abraham (2021) address these issues and allow for time and effect heterogeneity. Following the literature, I exclude time-varying covariates in the baseline regression and cluster the stan-

dard errors at the unit level. Time is considered in two ways: historical time (comparing treated firms to their untreated counterfactuals with year fixed effects) and firm age (comparing across similar age groups). Both dimensions yield qualitatively similar outcomes.

As a robustness check, Appendix C.4 includes results using the Callaway and Sant'Anna (2021) estimator and a model where the control group includes not yet treated firms as well as one where there might be anticipation. The differences are negligible.

4.3 Results

This methodology is able to identify the average effect of ratchet behaviour on investment rates on those firms that are treated (ATT). Given that those treated are however a large swath of the US public corporations, there is no reason to believe that these findings could not be generalized to other potential firms, for instance, in the future. Note furthermore that the Appendix contains additional figures and tables displaying robustness checks and disseminations of alternative specifications. The main goal of the aalysis developed here uis to be able to answer the question whether financialization - operationalized as ratchet behaviour - can explain at least part of the decline in investment rates among US stock listed corporations. For the hypothesis to be true, ratchet events need to have - on average - persistent negative effects on firm level investment rates.

4.3.1 Baseline: over years, age and with controls

Figure 5 displays the baseline results using the Sun and Abraham methdology implmented in R by using the *fixest* package, with ratchet events defined as of 1990 as described above, controlling for time fixed effects (both over years (historical time) and over firm age) as well as industry and size, both with and without time varying controls (lagged profitability, indebtedness and cash reserves). Note that these last ones are endogenous to the treatment indicator, logically they capture part of the treatment effect. Standard errors are clustered at the unit level and are robust to serial correlation and the 95% confidence intervals are plotted alongside the point estimates.

What Figure 2 only suggests, Figure 5 can ascertain: ratchet events cause the firm to invest persistently and significantly less. In either specification, the effect of ratchet behaviour is clearly negative, significant and persistent over time. Although this average effect conceals heterogeneity across firm sizes and sectors, it does suggest a first vindication of the main hypothesis of this paper: ratchet events lead - on average - to a significant and persistent cutback to investment rates, as measures against the counterfactual outcome proxied by the firm's non-ratcheting peers. It even seems that the negative effect on investments might not be simply persistent but rather perpetual. At least *10 years* after a ratchet event firms invest significantly less than their non-ratcheting peers.

The strength of the effect is quite striking. Ratchet events seem to cause a persistent drop in investment rates of at least five percentage points on average

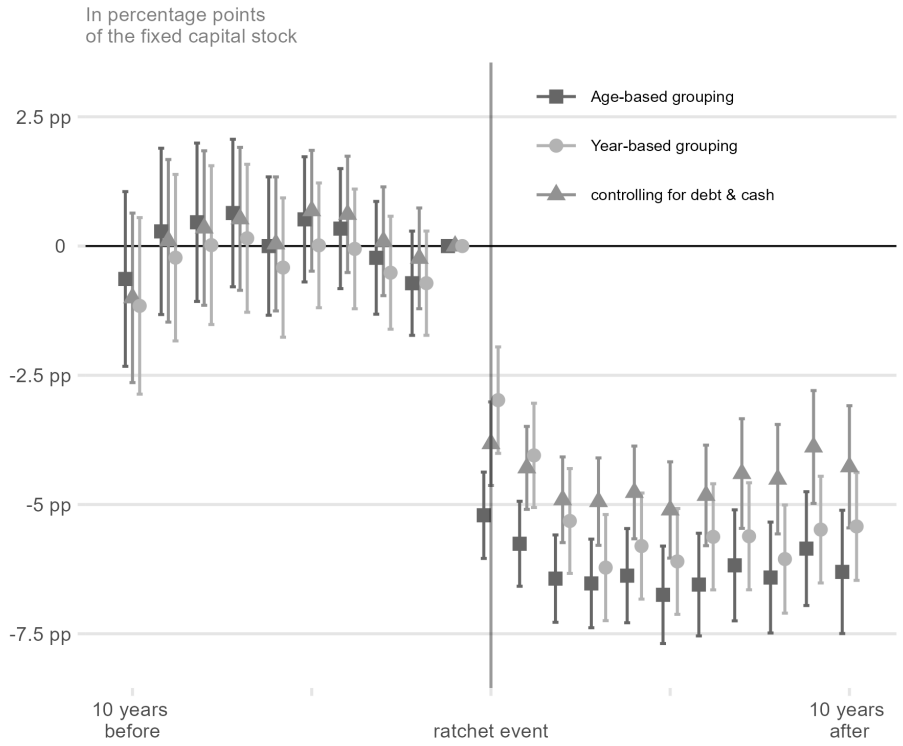

Figure 5: Baseline results
Notes : The coefficients capture a percentage point difference in investment rates among the treated with respect to the counterfactually non treated (proxied by the control units) attributable to the treatment, while controlling for time trends, sectoral differences and size disparities. The third line additionally controls for the debt and cash rank of the companies prior to the ratchet event.

vis-à-vis their non ratcheting peers and the underlying (negative) common time trend. Given that investment rates normalized by the stock of fixed capital average 24.5%, this corresponds to a persistent 16 to 28 percent drop in investment rates, a very sizeable effect indeed. This likely stems from the fact that ratchet events can come in multitudes over time. If a firm for some reason displays ratchet behaviour at one point in time, it might do so again in the future. Figure 3 already showed that some firms undergo multiple ratchet events over the course of their lifetime. Our estimates therefore might pick up not only the effect of one ratchet event, but rather, among some firms, of several consecutive ones.

A way of dealing with this issue is presented in Figure 4.3.1. It applies the same estimation strategy iteratively over different event definitions based on the start year of the definition. Although Appendix C.1 provides a more thorough discussion on this point, the results indeed suggest that part of the strength

of the average effect lies in the ratchet intensity. Now, the impact of a single ratchet event lies between two and four percentage points. However, given the downward slope of average investment rates over time, this lower percentage point effects corresponds to a still sizeable percentage decrease in investment rates. Moreover, even if the effect of a single ratchet event is lower than what the baseline estimates suggest, our interest lies in the effect of *ratchet behaviour* as such, rather than in the precise identification of the effect of a single *ratchet event*.

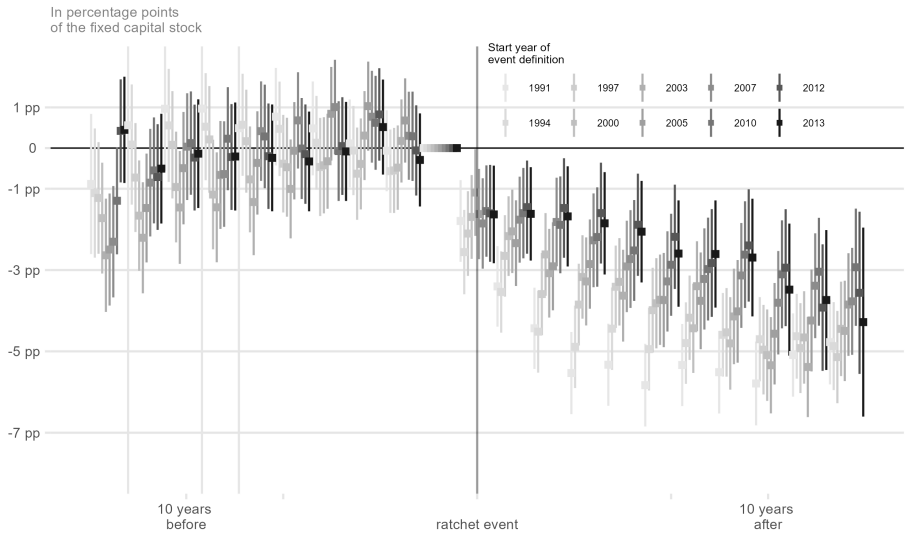

Figure 6: Different start years of the event definition
Notes : Although it is clear that starting to record ratchet events later reduces the average treatment effect on the treated, this might partly reflect a treatment intensity effect, partly a periodization effect and partly simply base effects as the control group now contains effectively treated observations. Furthermore the effect is expressed in percentage point change with respect to the non ratcheting average. Given the downward trend in investment rates overall, a smaller percentage point change might correspond to a similar percentage change attributable to the ratchet event.hese results are included for completeness, although it is unclear what exactly they tell us. If anything, it tells us that ratchet events clearly have a strongly negative and highly persistent effect on corporate fixed investments whatever the timing of the event definition.

Note furthermore how the effect on the year of the ratchet event is smaller than during subsequent years. This relatively slow reaction can be explained by the timing of investment decisions. These, and certainly the largest ones, are often decided and approved in the year(s) prior to their actual implementation, such that a sudden negative profit shock might not detract firms from a course already set. The initial gap between falling profits and steady payouts likely is bridged through new debt issuance, only later followed by the full force of the cuts to investments.

Finally, adding time-varying control variables is tricky due to the endogene-

ity with the ratchet event itself (see Appendix C.2). Figure 5 also displays the results of an estimation strategy including the debt position and cash position of the firms prior to the event (and therefore accounts for this position in a non-endogenous way).

4.3.2 Firm size and capability to cope with the consequences

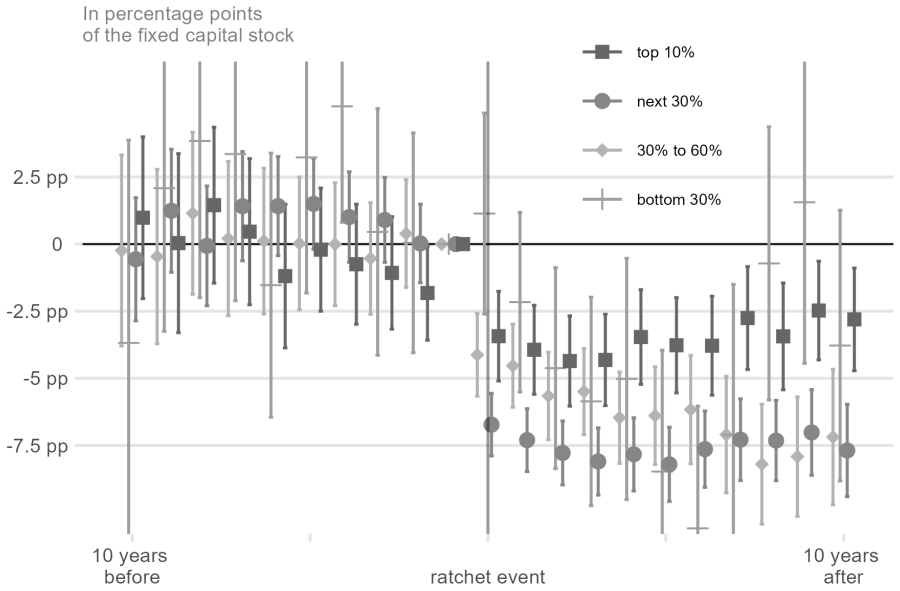

Figure 7: Firm size and the consequences of ratchet behaviour *Notes* :

The hypothesized negative effect of ratchet behaviour on investment rates is of course dependend on the measure of financial stress the company is under. A firm with a comfortable cash position can cushion the blow of ratchet beaviour to current sources of funds for investments by drawing from their cash reserves. Similarly, a firm with high profit margins will be better able to cope with a similarly sized blow to operating earnings than one with razor thin ones. Therefore, one could expect larger more profitable firms to be less impacted by ratchet behaviour due to their better financial position. Although later work will explore the relationship with market power explicitly, Figure 7 depicts the estimation results for each size category separately (with size as a proxy for markups and financial health) and shows that indeed top firms cut back on investments much less than their less performing peers. Still, even for those top US firms, ratchet behaviour persistently and significantly depresses firm fixed investments rates.

The worse performers on this front are the group of companies just below the top firms. These firms do not enjoy the highest profit margins nor do they sit on a comfortable cash cushion. This also lends further weight to the idea that

these firms are more inclined to display ratchet behaviour, or more expected to do so, as hypothesized in Appendix A.4.

In Appendix C.4 the results are shown of a similar size decomposition where additional fixed effects were added for the cash position and the debt position of the firms prior to the event. Although the point estimates are a bit different, the conclusions are very similar.

5 Conclusions and discussion

The corporate financialization literature has associated the rising hold of shareholders over firm resources with the steady fall of investment rates among US stock-listed firms. In this stream of research, the firm is implicitly conceived as a battlefield of contending interests between stakeholders. From this perspective it is natural to hypothesize that cash that is distributed to shareholders (out of both internal and external funds) no longer can be allocated to investments, i.e. that shareholder payouts crowd-out productive investments. And indeed, many empirical researchers have found not only a gradual delinking between internal and external sources of funds and investments but also an increasingly negative correlation between corporate fixed investments and shareholder payouts.

However, although the crowding out hypothesis is a causal one, neither has the theory clearly stated how precisely the flow of firm income is being redirected from one stakeholder (investments) to another (shareholders), nor has empirical work been able to thoroughly address the critique of reverse causality. The how might sound irrelevant but it is a crucial step in substantiating the causal relationship between rising payout ratios and falling investments.

In empirical work on the subject, it is implicitly assumed that rising payouts crowd out investments, but in this paper I argued that it is precisely the inability of payouts to fall - their downward rigidity - that cause investments to get cut, not only contemporaneously, but persistently over the following years. The key idea is simple and arises from the battlefield conception of the firm, given that the conflict between stakeholders is brought to a climax when profits decline, when resources are scarce. In previous work (Mertens, 2024), I showed that shareholders are able to keep their spoils during crisis moments - and thus vastly increase their cash payouts as fraction of depressed firm income, i.e. that firms exhibit ratchet behaviour. Those instances of ratchet behaviour clearly reaffirm the position of shareholders at the top of the stakeholders' foodchain, epitomise the concept of shareholder value orientation and empirically cause the rising trends in payout ratios over time.

Since the demise (Rabinovich, 2018; Soener, 2021) of the financial rentierization hypothesis which blamed financial investments for crowding out capital expenditures - I argued here instead that ratchet behaviour causes the fall of investment rates the financialization literature has hypothesized. When profits fall and payouts are kept steady, investments get cut, not only contemporaneously but intertemporally as well through a higher burden of unproductive debt and lower levels of cash. The effect is quite strong and statistically significant,

robust to different specifications and periodizations and heterogeneous across firms, not only depending on their proclivity to exhibit ratchet behaviour but also on their capacity to cope with its consequences.

These ratchet induced cutbacks to investment at the firm level likely are of economic significance as well, given that these stock listed firms represent an important share of the total economy and that each ratchet event leads to a drop in investments of around three to five percentage points, which on average corresponds to a persistent reduction of investment rates by 12 to 20 percent (calculation based on average investment rate of 24.5%). Given that firms can display ratchet *events* multiple times, the effect of ratchet *behaviour* is even greater. The aggregate view presented in Figure 3 points in this direction as well, as it shows how investment rates are structured along the lines of the frequency of ratchet behaviour.

Moreover, the fall of investment rates among ratcheting firms might feed back to nonratcheting firms as well. Two channels might be at work here. First, as the demand for investment goods falls due to ratchet behaviour, the producers of those goods' demand falls as well, as described by Mason (2015). Therefore, these producers might cut back on their investments as well in order to prevent overcapacity. Second, in the investor space, firms that do ratchet (or are of top tier status) might be favoured by investors within a basket of interchangeable peers, therefore incentivizing nonratcheting firms either to do so as well (which would cause the propagation of ratchet behaviour) or raise payouts to levels that would not have been considered otherwise.

Finally, note that these findings also have implications for the relationship between interest rates - and monetary policy in general - and investments. Low interest rates might ease the burden of ratchet behaviour by lowering its cost, but it could also make ratchet behaviour more prevalent. Exploring the interactions between ratchet behaviour and macroeconomic policies would be a very interesting avenue for further research.

References

Alexander, L., & Eberly, J. (2018). Investment Hollowing Out. *IMF Economic Review, 66*(1), 5–30. https://doi.org/10.1057/s41308-017-0044-2

Almeida, H., Fos, V., & Kronlund, M. (2016). The real effects of share repurchases. *Journal of Financial Economics, 119(1)*, 168–185. https://doi.org/10.1016/j.jfineco.2015.08.008

Baker, A. C., Larcker, D. F., & Wang, C. C. Y. (2022). How much should we trust staggered difference-in-differences estimates? *Journal of Financial Economics, 144(2)*, 370-395. https://doi.org/10.1016/j.jfineco.2022.01.004

Barradas, R. (2017). Financialisation and Real Investment in the European Union: Beneficial or Prejudicial Effects? *Review of Political Economy*, *29*(3), Article 3. https://doi.org/10.1080/09538259.2017.1348574

Callaway, B., & Sant'Anna, P. H. C. (2021). Difference-in-Differences with multiple time periods. *Journal of Econometrics, 225(2)*, 200–230. https://doi.org/10.1016/j.jeconom.2020.12.001

Davis, L. E. (2018a). Financialization and Investment: A Survey of the Empirical Literature. In R. Veneziani & L. Zamparelli (Eds.), *Analytical Political Economy (1st ed., pp. 207–235)*. Wiley. https://doi.org/10.1002/9781119483328.ch8

Davis, L. E. (2018b). Financialization and the non-financial corporation: An investigation of firm-level investment behavior in the United States. *Metroeconomica, 69*(1), 270–307. https://doi.org/10.1111/meca.12179

de Chaisemartin, C., & D'Haultfœuille, X. (2020). Two-Way Fixed Effects Estimators with Heterogeneous Treatment Effects. *American Economic Review, 110 (9): 2964-96.*

Epstein, G. A. (Ed.). (2005). *Financialization and the world economy.* Edward Elgar.

Goodman-Bacon, A. (2021). Difference-in-differences with variation in treatment timing. *Journal of Econometrics, 225(2)*, 254–277. https://doi.org/10.1016/j.jeconom.2021.03.014

Grullon, G., & Michaely, R. (2004). The Information Content of Share Repurchase Programs. *The Journal of Finance, 59*(2), 651–680. https://doi.org/10.1111/j.1540-6261.2004.00645.x

Gutiérrez, G., & Philippon, T. (2017). Investmentless Growth: An Empirical Investigation. *Brookings Papers on Economic Activity, 2017*(2), 89–190. https://doi.org/10.1353/eca.2017.0013

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 3*(4), 305–360. https://doi.org/10.1016/0304-405X(76)90026-X

Kahle, K., & Stulz, R. M. (2021). Why are corporate payouts so high in the 2000s?. *Journal of Financial Economics*, *142*(3), 1359-1380. https://doi.org/10.1016/j.jfineco.2021.06.020

Lazonick, W., & O'Sullivan, M. (2000). Maximizing shareholder value: A new ideology for corporate governance. *Economy and Society*, *29*(1), Article 1. https://doi.org/10.1080/030851400360541

Mason, J. W. (2015). Disgorge the Cash: The Disconnect Between Corporate Borrowing and Investment. *Roosevelt Institute.* https://rooseveltinstitute.org/publications/disgorge-the-cash/

Mertens, B. (2025). When shareholder power kicks in: Corporate financialization as ratchet behaviour and sticky payouts. *Socio-Economic Review, 29*(1), pp. 419-443. https://doi.org/10.1093/ser/mwae059

Mertens, B. (2025). A world view on corporate financialization and an empirical (de)construction of payout ratios: The importance of losses, maturity and downward rigidity. *[Unpublished Manuscript under review]*

Orhangazi, O. (2008). Financialisation and capital accumulation in the non-financial corporate sector: A theoretical and empirical investigation on the US economy: 1973-2003. *Cambridge Journal of Economics*, *32*(6), 863–886. https://doi.org/10.1093/cje/ben009

Palladino, L. (2021). Financialization at work: Shareholder primacy and stagnant wages in the United States. *Competition & Change*, *25*(3–4) https://doi.org/10.1177/1024529420934641

Rabinovich, J. (2018). The financialisation of the nonfinancial corporation. A critique to the financial rentieralization hypothesis. *Metroeconomica, 70(4)*, 738–775.

Rabinovich, J. & Reddy, N. (2024). Corporate financialization: a conceptual clarification and critical review of the literature. *Post Keynesian Economics Society (PKES) Working Papers, PKWP2402*. https://postkeynesian.net/working-papers/2402/

Soener, M. (2021). Did the 'Real' Economy Turn Financial? Mapping the Contours of Financialisation in the Non-Financial Corporate Sector. *New Political Economy, 26(5)*, 817–831. https://doi.org/10.1080/13563467.2020.1858775

Stockhammer, E. (2006). Shareholder value orientation and the investment-profit puzzle. *Journal of Post Keynesian Economics, 28,*(2), 193-215. https://doi.org/10.2753/PKE0160-3477280203

Sun, L., & Abraham, S. (2021). Estimating dynamic treatment effects in event studies with heterogeneous treatment effects. *Journal of Econometrics, 225(2)*, 175–199. https://doi.org/10.1016/j.jeconom.2020.09.006

Sündal, D. (2023). Not your average firm: A quantile regression approach to firm-level investment in the United States. *Metroeconomica, 74*(4), 858–886. https://doi.org/10.1111/meca.12440

Tomaskovic-Devey, D., Lin, K.-H., & Meyers, N. (2015). Did financialization reduce economic growth? *Socio-Economic Review, 13*(3), 525–548. https://doi.org/10.1093/ser/mwv009

Tori, D., & Onaran, Ö. (2018). The effects of financialization on investment: Evidence from firm-level data for the UK. *Cambridge Journal of Economics, 42(5)*, 1393–1416. https://doi.org/10.1093/cje/bex085

Tori, D., & Onaran, Ö. (2020). Financialization, financial development and investment. Evidence from European non-financial corporations. *Socio-Economic Review, 18(3),* 681–718.https://doi.org/10.1093/ser/mwy044

Tori, D., & Onaran, Ö. (2022). Financialisation and firm-level investment in developing and emerging economies. *Cambridge Journal of Economics, 46*(4), 891–919.https://doi.org/10.1093/cje/beac030

Van Treeck, T. (2009). A synthetic, stock-flow consistent macroeconomic model of "financialisation." *Cambridge Journal of Economics, 33*(3), 467–493. https://doi.org/10.1093/cje/ben039

Appendix

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This appendix contains some methodological notes (Appendix A), additional aggregate figures and discussion (Appendix B) and additional econometric results (Appendix C).

A On methodology

A.1 Data description

Region	Firms	Observations
USA	15.271	205.775

Table 1: Number of observations, firms with at least 5 years of existence
Notes : The universe of stock-listed firms in the world is extracted from Refinitiv using an R application programming interface (API). This is the result after basic cleaning, such as removing observations without data or firms that only stay in the data for lessthan 5 years.

Variable	mean	25th	median	75th
investment rate	0.24	0.08	0.18	0.39
payout ratio	0.42	0	0.16	0.72
indebtedness	1.8	0.26	0.99	3.32
profit margins	0.062	-0.045	0.062	0.18
cash holdings	0.074	0.010	0.053	0.14

Table 2: Summary of central variables
Notes : These are basic data descriptives for the group of firms that will at some point disgorge cahs to shareholders, are at least 5 years old and report positive revenues from business activities, after applying the data adjustments described in the next Appendix.

A.2 Data cleaning and manipulation

I refer to Mertens (2025) for a deeper explanation of the data wrangling process, but want to attract special attention to the way the key variables of interest are constructed.

the payout ratio

The payout ratio is in its essence defined as the cash remuneration of shareholders divided by profits before taxes, i.e.

$$Pr_{it} = \frac{\text{dividends}_{it} + \text{buybacks}_{it}}{\text{profits}_{it}} \tag{1}$$

This is the most straightforward embodiment of the idea that this ratio should capture the resources extraction from firms by shareholders. Simple as this may seem, operationalising this definition requires some further thought, as described in Mertens (2025).

A first problem arises when companies that earn negative profits, and thus effectively lose money, continue to distribute cash to shareholders. Mathematically, this would imply a negative payout ratio, while such a situation should

translate into a high payout ratio. Mertens (2025) shows that this is increasingly prevalent. Moreover, as is the point of Mertens (2024), many firms keep their payouts steady in the face of falling profits. This yields problems even when profits remain in positive territory, as payouts might surpass profits by a fairly wide margin, leading to very high payout ratios. These very high ratios remain true to the essence of the concept, but create a severe outlier problem. So ratcheting induces mismeasurements of the payout ratio, creating positive outliers and false negatives. As ratchet events are the core phenomenon of this paper, these mismeasurements need to be addressed.
To this end we identify the yearly regional 95th percentile of payout ratios among those firms that will at some point distribute cash to shareholders. As this value can be subject to year to year swings, this variability is smoothed out by calculating its forward rolling median.

This smoothed 95th percentile then serves as an upper limit and cap (Cap_{rt}) on positive outliers and as an assigned value for false negatives, as shown by Equation 2. The cap also has a minimum threshold of 1.

$$Pr_{it} = \begin{cases} Pr_{it} & \text{if } 0 \leq Pr_{it} \leq Cap_{rt} \\ Cap_{rt} & \text{if } Pr_{it} < 0 \\ Cap_{rt} & \text{if } Pr_{it} > Cap_{rt} \end{cases} \quad \text{with} \quad \begin{cases} i = firm \\ t = year \\ r = region \end{cases} \tag{2}$$

This cap ensures that payout ratios are measured correctly and that aggregate measures and econometric models are not distorted by extreme outliers or false negatives.

A second problem is related to the aggregation method, which Mertens (2025) showed greatly impacts the results. As aggregation is only required for figures depicting payout ratios at some level other than that of the firm, this problem does not affect the econometric models. But whenever aggregation is required - i.e. in all figures showing the payout ratio at a level higher than the individual firm - I use the unweighted corrected measure (Mertens, 2025), which effectively entails that the payout ratio is first calculated at the firm level, corrected as described by Equation 2 and only then aggregated in a way that each firm is treated equally, irrespective of size.

The whole procedure ensures that findings are not driven by outliers, false negatives nor by a handful of dominant companies. It ensures that figures and econometric results are not driven by outliers without loosing the key information these ratchet induced would-be outliers contain. Note however that this generally pushes down the payout ratio as compared to the widely used weighted uncorrected method used in other research papers, but we are confident that it better represents the payout ratio, for the reasons explained in Mertens (2025). Note in this figure that there is no dominance by big firms, that there are no false negatives and that outliers are capped such that the information they contain is kept without artificially distorting the results.

the investment rate

The main variable of interest is of course the investment rate, i.e. capital expenditures normalized by the total stock of fixed capital of the company. In practice, the numerator of this ratio consists of the net flow of cash going towards the purchase of fixed capital (such as property, machinery and other equipment), "net" representing the difference betwee in and outflows of cash (inflows represent the proceeds from the sale of fixed capital). The denominator is the stock of fixed capital, but as to reduce the volatility of the denominator (as we are interested in the numerator), it is a lagged five year rolling average of this stock of fixed capital.

Crucially, as to not let our measure be distorted by outliers in both directions while acknowledging that those outliers are most often not mistakes but relevant data, a similar correction mechanism is applied as with respect to the payout ratio.

Given the greater variety of investment rates across the population of firms, the 90th percentile cutoff is applied here, smoothed by a rolling average (seen in grey in Figure 1) and then confined to its over the period first and third quartile limits, which results in an upper limit for investment rates shown by the blac line in Figure 1. The main reason for the quantile adjustment is to not overweigh the investment boom in the end of the '90s, but none of the results are sensitive to the exact cutoff point or the quartile correction. The cutoff point is applied symmetrically to negative values as well.

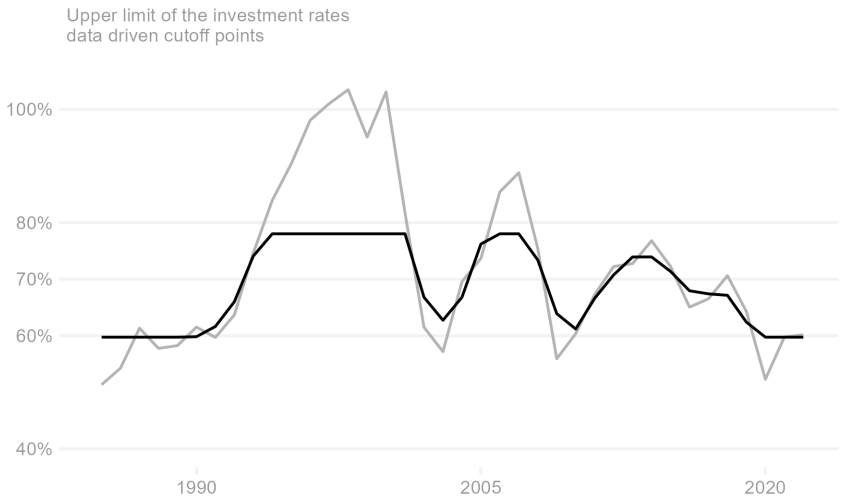


Figure 1: Data driven yearly upper limits to investment rates

Note that all variables employed in this paper (such as cash holdings or levels of debt) are normalized and adjusted the same way. I refer to GitHub for the full replication codes in R.

A.3 The event definition

First of all, the company must have had payouts in the year of the event, so that steady payouts at zero are not included. Second, the minimal decline in operating income considered corresponds to the 3rd quartile of negative operating income shocks (with respect to a lagged three year rolling average) among the population of US firms (12.5% decrease). Finally some minor requirements are added in order to better reflect the key idea of the ratchet event. Firstly, the decline in operating cash flow cannot be caused by the base effect of a windfall gain in the previous year. Second, the company cannot die in the ten years following the event to makes sure that our results do not simply capture the divestment of decaying companies.

This leads to 6.408 individual events (note that some firms might undergo multiple ratchet events). If we further restrict our population to those firms that at one point in time will ever have positive payouts and to firms that actually report capital expenditures reliably and to firms from their 5th year of existence onwards, we end up with 44.336 treated observations (year-firm combinations) and 79.800 untreated ones. Of those last ones, 22.114 are not yet treated and 57.686 are never treated (i.e. the actual control group). These are the observations used in all the figures and estimations.

	Treated	**Untreated**	
		Not Yet Treated	*Never Treated*
		22.114	*57.868*
Observations	44.336	79.800	
Total		**124.136**	

Table 3: Number of firm-year observations in each treatment category.

A.4 The big picture solely as as a first piece of the puzzle

Although this paper aims to identify an average effect among all US stock-listed firms, it should be clear that the effect is likely to be heterogeneous across firms, most notably depending on two crucial traits. On the one hand how ratchet behaviour affects outcomes will depend on the firms' capacity to cope with the consequences of ratchet behaviour through characteristics such as cash reserves, low indebtedness or high market power. On the other hand, outcomes will also crucially depend on the pressure the firm faces to ratchet when faced by a temporary hit to profits. As Mertens (2024) showed, firms that do exhibit ratchet behaviour might do so multiple times. Consequently, a hypothesis this paper introduces is that ratchet behaviour has more dire consequences for subtier firms, for both aforementioned reasons. On the one hand they are less likely to sit on a cash cushion or to have significant market power. But maybe more importantly, they might face stronger pressure to ratchet than their top performing

counterparts. Indeed, shareholders most often are diversified marginal owners of firms. From their perspective, any firm in a specific subcategory of peers (same sector, same region) are virtually interchangeable from a risk diversification point of view. The top performers within this subcategory of firms will be preferred whatever they do (because they might have high market power for instance), while the subtier firms might have to battle for shareholder attention and therefore will be more eager to ratchet in times of distress. Those firms just below the top performers mights thus feel more pressure to ratchet and might be less able to cope with the consequences of their behaviour. This hypothesis will be tentatively explored here, but only fully investigated in later scholarly work. All this just to mention that this paper will not give definitive answers to all, if any, questions and that it would be very interesting to open up the discussion to different types of firms (for example, looking into sectoral differences), different countries, the interactions with on the one hand shareholder and manager characteristics and on the other hand labour union power.

Finally, the fall of investment rates among ratcheting firms might feed back to nonratcheting firms as well. Two channels might be at work here. First, as the demand for investment goods falls due to ratchet behaviour, the producers of those goods' demand falls as well, as described by Mason in his reply to critics of the crowding out hypothesis (2015 REFERENCE). Therefore, these producers might cut back on their investments as well in order to prevent overcapacity. CHECK THIS Second, in the investor space, firms that do ratchet (or are of top tier status) might be favoured by investors within a basket of interchangeable peers, therefore incentivizing nonratcheting firms either to do so as well (which would cause the propagation of ratchet behaviour) or raise payouts to levels that would not have been considered otherwise.

Although none of these mechanisms will be formally tested in this paper, it might be interesting to think about these hypotheses when reading the sections that will introduce the visualizations of ratchet behaviour (Section 3.2) and the results of the estimation strategy (Section 4.3).

A.5 The counterfactual event

In order to make sure that the measured effect of these ratchet events on investments actually capture the ratchet part and do not simply reflect the impact of a negative profit shock, we construct a counterfactual event that captures the effect of a negative shock without ratchet behaviour. However, if firms are - for some reason - pressurized to keep payouts steady when facing a negative profit shock, then those firms that do adjust their payouts downwards might not be the right comparison group. Those might be hit much harder or face a longer run downward pressure on earnings. On the other hand, identifying the investment behaviour of those firms not yet remunerating shareholders might also not be appropriate, given that those firms are often younger and are more likely to be in an expansionary phase still. Given this, we simply define the counterfactual event as a negative shock to operating cash flow of similar magnitude as above, but for those firms not keeping payouts steady. This group therefore includes

both firms adjusting payouts and firms that at the time are not remunerating shareholders.

B Additional aggregate figures

B.1 Decline of investments by economic sector

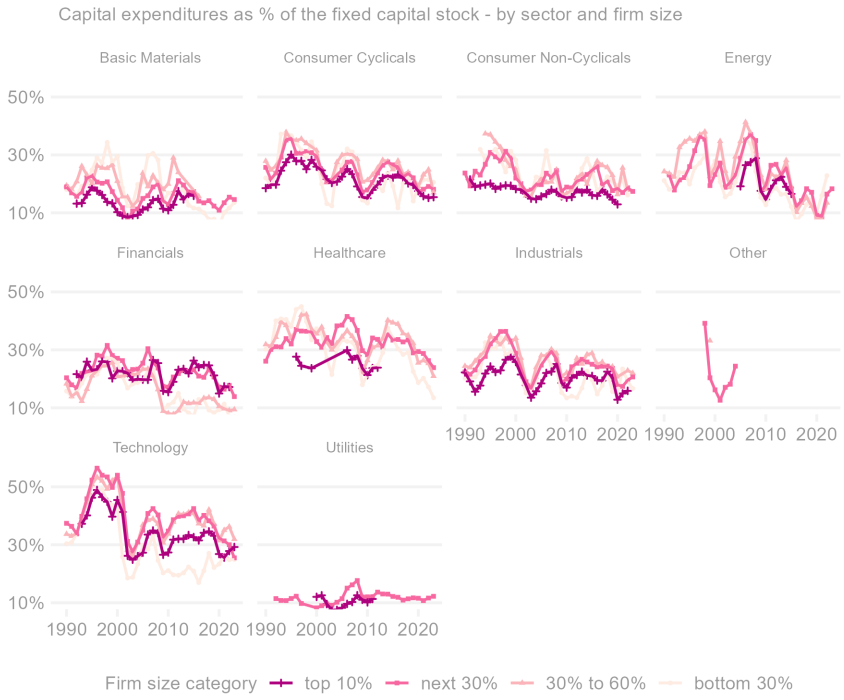


Figure 2: Falling firm level investment rates across the size distribution
Notes : All firms are equally weighted in order to give an idea of the development with respect to investment rates among the average - in the non-mathematical sense of the word - US stock listed firm. Size categories are based on the distribution of firm revenues.

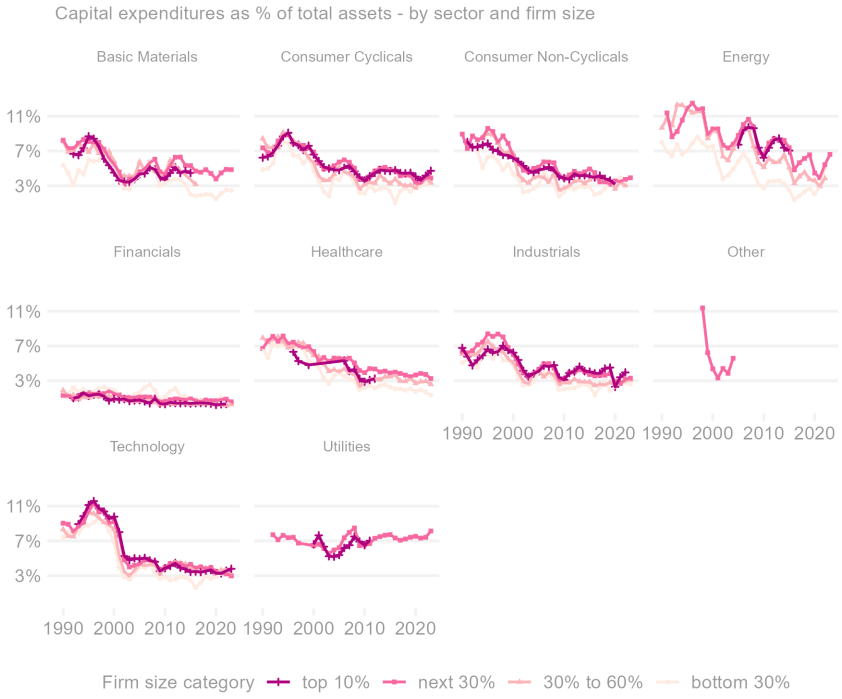


Figure 3: Falling firm level investment rates across the size distribution
Notes : All firms are equally weighted in order to give an idea of the development with respect to investment rates among the average - in the non-mathematical sense of the word - US stock listed firm. Size categories are based on the distribution of firm revenues.

B.2 Evolution of investment rates among European stock listed firms

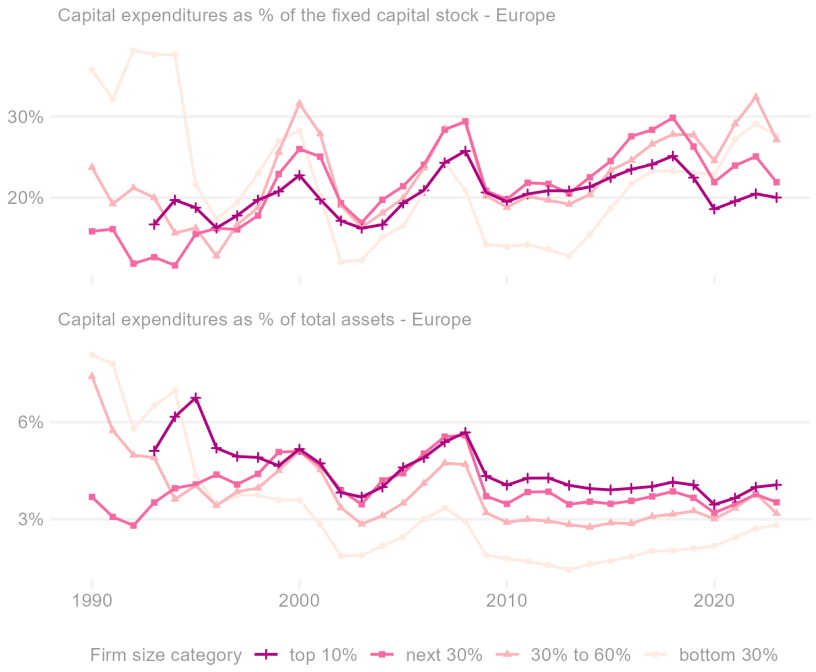


Figure 4: European investment rates started lower but has no falling trend
Notes : All firms are equally weighted in order to give an idea of the development with respect to investment rates among the average - in the non-mathematical sense of the word - US stock listed firm. Size categories are based on the distribution of firm revenues.

B.3 Evolution of profitability ratios among US and EU firms

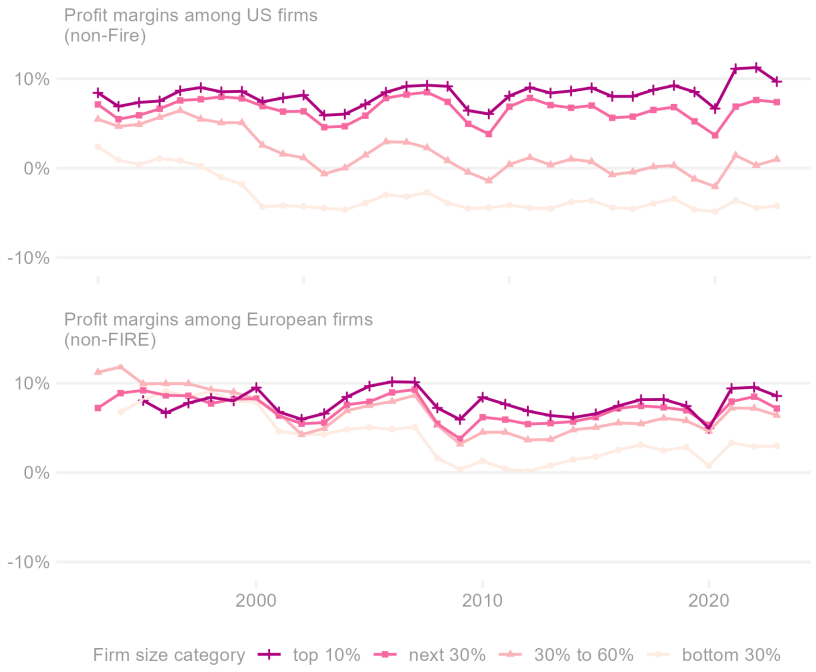


Figure 5: Profitability does not follow the same path as investments
Notes : All firms are equally weighted in order to give an idea of the development with respect to investment rates among the average - in the non-mathematical sense of the word - US (and EU) stock listed firm. Size categories are based on the distribution of firm revenues.

B.4 Consequences of ratchet events across sectors

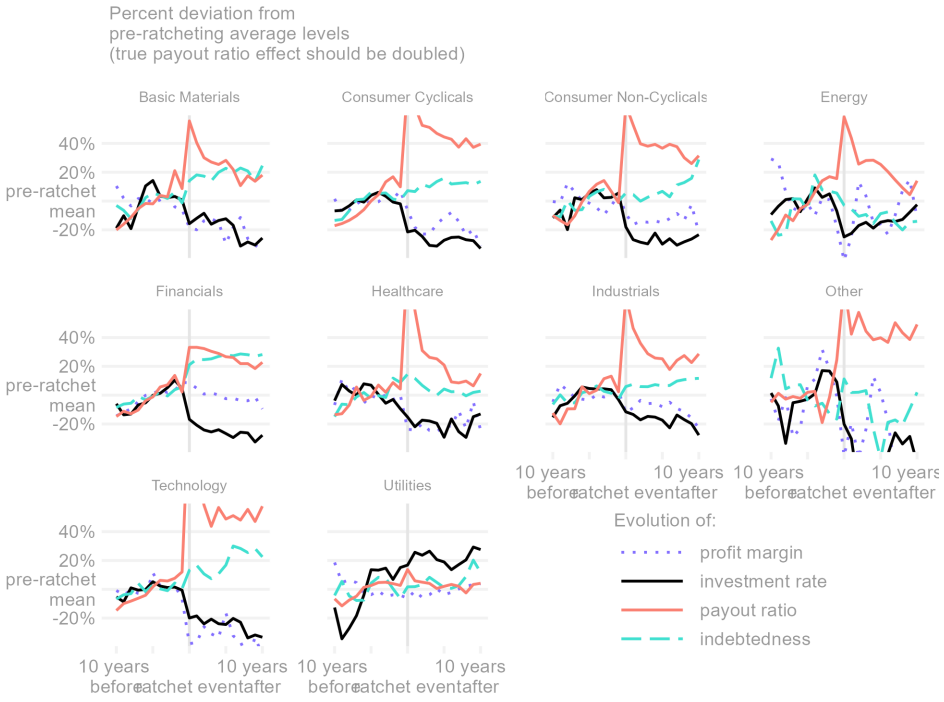


Figure 6: Potential redistributive consequences of ratchet events - by sector
Notes : This figure shows that ratchet event redistribute firm income from investments in the fixed capital stock to shareholders. The x-axis represents time defined with respect to each firm's ratchet event. The y-axis is defined in percentage deviation of pre-event average levels of each variable.

B.5 Consequences of ratchet events depending on the timing of the ratchet definition

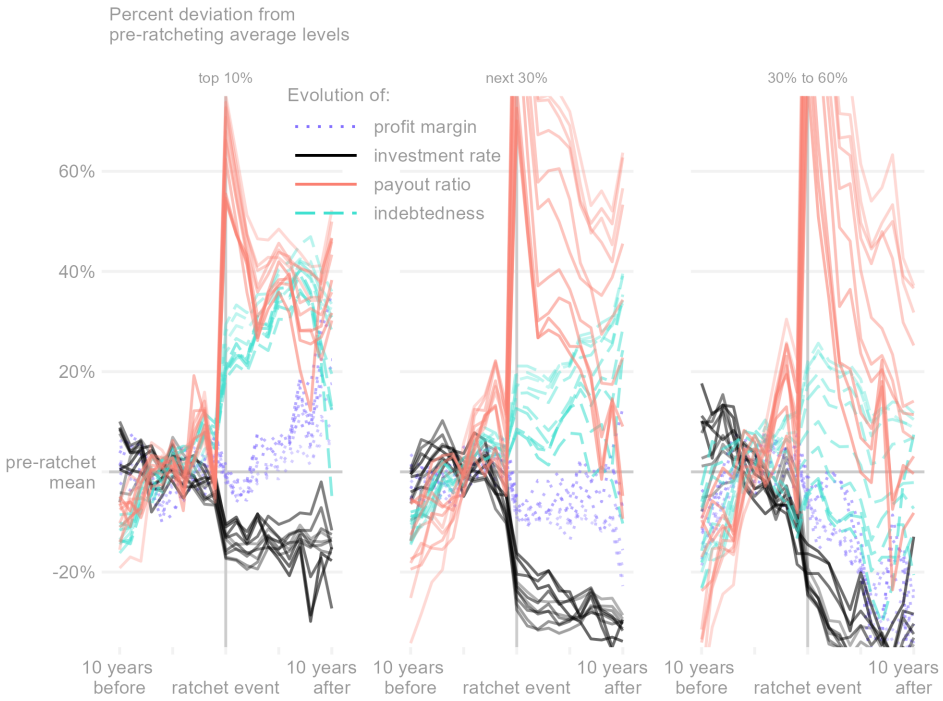


Figure 7: Potential redistributive consequences of ratchet events - by start year of ratchet definition

Notes : This figure illustrates that ratchet events might indeed have redistributive consequences and cause the fall of investment rates. It shows that ratchet event redistribute firm income from investments in the fixed capital stock to shareholders. The x-axis represents time defined with respect to each firm's ratchet event. The y-axis is defined in percentage deviation of pre-event average levels of each variable. Note that for each time definition, the pre-event average differs. For example, the pre-event average payout ratios in the first (1990) and the last (2012) series are respectively 39% and 53%,

B.6 Consequences of ratchet events by economic sector

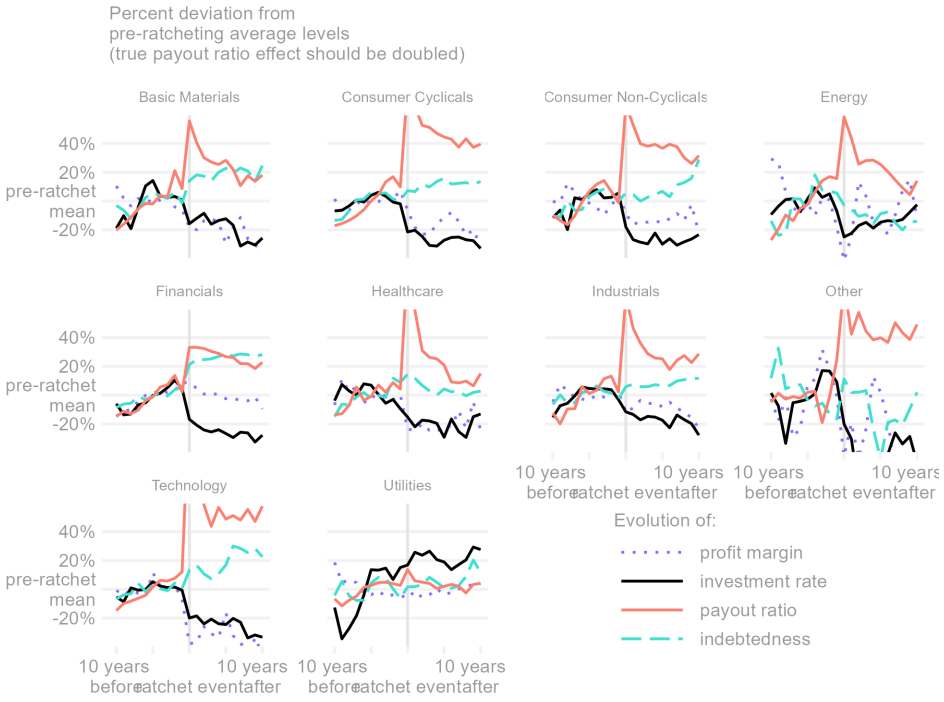


Figure 8: Potential redistributive consequences of ratchet events - by economic sector

Notes : This figure illustrates that ratchet events might indeed have redistributive consequences and cause the fall of investment rates. It shows that ratchet event redistribute firm income from investments in the fixed capital stock to shareholders. The x-axis represents time defined with respect to each firm's ratchet event. The y-axis is defined in percentage deviation of pre-event average levels of each variable.

B.7 The lack of stratification of investment rates along the counterfactual event

It might be expected that a negative profit shock leads to a cutback in investment rates if we assume that investments are - at least partially - financed by internal funds. So is Figure 3 in the main text not simply picking up the stratification due to - and consecutive hits caused by - shocks to profitability rather than ratchet behaviour as such. As another potential critique, it could also be raised that negative profit shocks constitute a signal of disappearing investment opportunities. In that case, Figure **??** simply picks up on these exogenously disappearing opportunities. There are however a few reasons to not put too much weight into this critique. hereunder I formulate a few arguments why this critique - although crucial - is fairly unlikely to be sound.

First, keeping payouts steady in the face of falling profits is a discrete choice that is made explicitly by the people at the helm of the company. These payouts could have been cut in order to alleviate the impact of the negative profit shock - and thus the drain of internal funds - on the capacity to invest. Thus stating that the drain of internal funds due to the profit shock removes the firm's capacity to invest while willfully ignoring that these internal funds could well be replenished by cutting back on payouts, does not feel like a strong argument. Moreover, if a one-off hit to profitability signal lower investment opportunities - for example because the business cycle is going through a trough - there is no reason to believe this low opportunity environment will be a permanent one. However, the decision to ratchet today depletes cash reserves or raises debt levels such that even if in the future investment opportunities exogenously reappear, the capacity to finance them will be diminished because of the decision to ratchet. So, even if indeed the negative shock coincides with disappearing opportunities, there is no reason why this condition becomes permanent *except for the dynamic - intertemporal - impact of ratchet behaviour itself on the firm's future capacity to seize investment opportunities.*

Further, even if we accept that the negative profit shock has an independent negative effect on investments - due to either depletion of internal funds or lower opportunities - that needs to be taken into account, one can construct the same figure based on the frequency of negative shocks (of similar magnitude) *without* ratchet behaviour. Figure 9 does exactly that. Strikingly, in this case, there is no clear stratification of the investment rate with respect to the frequency of the occurrence of these negative shocks, i.e. these counterfactual events. And although there does seem to be a temporary negative hit to the investment rate as the negative shock occurs, the effect is not persistent. At least, this seems to be the case at the aggregate level. For a more detailed answer to this critique, one needs to look at what is happening at the firm level.

Finally, in a environment were firms feel pressured - for whethever reason - to exhibit ratchet behaviour, those firms that do not might not be comparable to those that do. It might be that the profit outlook is so dire that they need all the cash they can muster, or that they operate under heavy financial constraints.

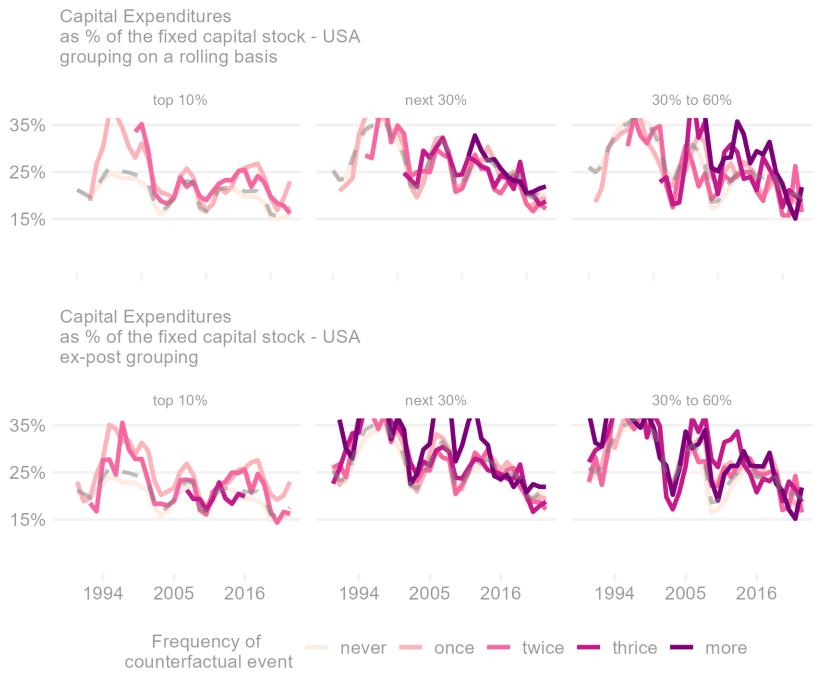


Figure 9:
The frequency of negative shocks does *not* coincide with lower investment rates
Notes : Each time a company displays ratchet behaviour, the company moves one place up in the ratchet hierarchy. Note finally that each category is only displayed from the moment it contains at least 20 constituents, in order to ensure visual clarity of the figure.

C Additional econometric results

C.1 Periodization and treatment intensity

An important question is whether the results above are sensitive to changes to the definition of the ratchet event in Section 3. For instance, given that Figure 1 clearly shows an investment boom at the mid to end of the nineties, could it not be that the investment decline we measure and attribute to ratchet behaviour is in fact driven by the counterfactual investment boom of the nineties, i.e. ratcheting firms keep investments stable but can't keep up with the increases among nonratcheting firms. First, I doubt whether that would even be problematic for the interpretation of the ratchet effect - if the market swings upwards and ratchet behaviour prevents firms from investing more, that is still a negative effect of ratchet behaviour on potential investments. But more importantly, this periodization is unlikely to be problematic for a couple of reasons. The first is contained in the figure displaying the parallel trends, Figure 4. It shows that

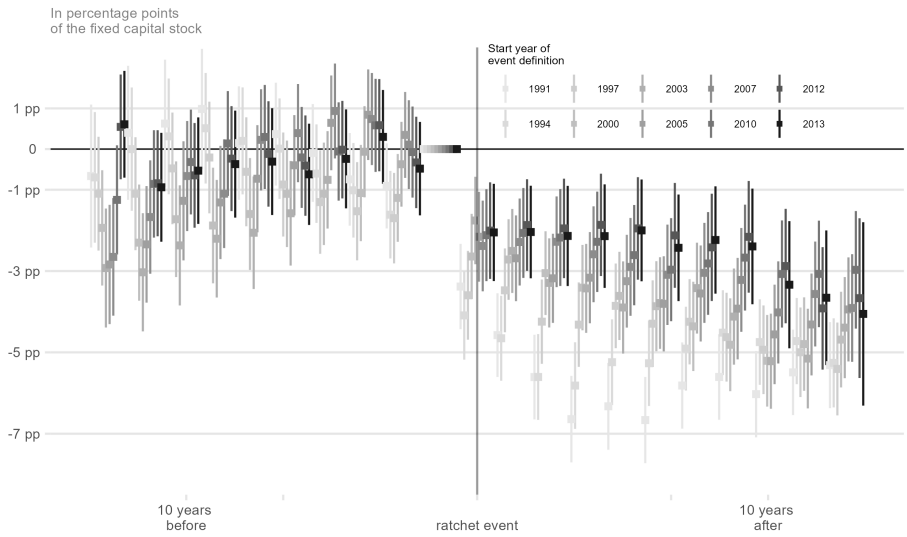
the ratchet events are quite uniformly distributed over time. That means that a year in that period will contain approximately as much ratchet events as any other given year and thus not disproportionally weigh on the results. Moreover, Figure 4 additionally shows that the gap between the untreated firms and those that have already been treated does not radically change over time (although it is more pronounced in the upswings of the business cycle). Will the event definition alter the outcomes for individual firms, are maybe even sectors? Definitely yes, but will that radically change the average effect? That is unlikely. Additionally, every estimation includes year fixed effects, which means that both the downward trend and the year specific swings are controlled for. Finally, Appendix C.4 checken displays the results based on the Callaway and Sant'Anna procedure where only the not yet treated firms are used as a control group and not the never treated. Treated firms are now measured against the counterfactual based on their past selves. The results are very similar.

In short, the effect measured by this estimation strategy is an average effect, not only across individual firms but also over time. The coefficient of the year after the ratchet event is an average effect of all "one year after" effects across all actual historical years (or firm ages depending on the specification in Figure 5 of the main text). Therefore, ten years before and ten years after does not at all correspond to 1990 (start year of event recording) to 2010, but every year in event time will contain many years in historical time.

Still, adjusting the event definition over the historical time dimension might yield valuable insights, maybe not into potential periodizations of ratchet behaviour, but rather into the robustness of the effect of ratchet behaviour on investments. Notably because there is another reason to be interested in such a robustness check - one more likely to matter. Figure 7 in the main text already showed that some firms undergo multiple ratchet events over the course of their lifetime. Our estimates therefore might pick up not only the effect of one ratchet event, but rather, among some firms, of several consecutive ones (although the time window is restricted to ten year after, therefore, the second event should happen within that window for it to influence the results).

Therefore, Figure **??** displays the results of an iterative estimation strategy, where the ratchet event is consecutively defined from a later point in time onwards. Note however that the control group in each iteration changes as well, which might break the parallel trends. If we only start counting ratchet events in - for example - 2011, the control group will not only contain firms that never displayed ratchet behaviour, but also firms that displayed ratchet behaviour in - for example - 2006 only. Still, it can give us an idea of the effect of the treatment intensity (as in multiple treatments) in our main estimation as well as potentially yield some insights into the periodization of effect.

It is clear that starting to record ratchet events later reduces the average treatment effect on the treated. This might partly reflect a treatment intensity effect, partly a periodization effect and partly simply base effects as the control group now contains effectively treated observations. Furthermore the effect is expressed in percentage point change with respect to the non ratcheting average. Given the downward trend in investment rates overall, a smaller percentage



point change might correspond to a similar percentage change attributable to the ratchet event. These results are included for completeness, although it is unclear what exactly they tell us. If anything, it tells us that ratchet events clearly have a strongly negative and highly persistent effect on corporate fixed investments whatever the timing of the event definition.

Another way to test for this would be to work with multiple event definitions based on the frequency of ratchet behaviour. I will develop this further in forthcoming work.

C.2 Time-varying controls

Figures 5, 6 and 7 in the main document depict the results of models based on the event alone, i.e. without any time varying control variables. The main reason for not including time varying control variables is their interconnection with the ratchet event, which induces severe endogeneity issues. Included covariates must indeed be independent of the event (Freedman et al., 2023, p. 21), which is clearly not the case for those identified by the literature as important for investment behaviour (Gilchrist & Zakrajsek, 2007; Hecht, 2014; Schich & Pelgrin, 2002) - such as the level of debt and cash, profit margins, sources of funds such as changes in debt and new share issuances. Still, as a side experiment one can possibly infer interesting information from having a look at a model that inclues time-varying covariates. The negative and persistent effect remains clear although less pronounced and the pre-treatment upward trend almost disappears. However, even beyond the endogeneity issues, there are good reasons to not include control variables. First, the smaller effect attributed to the event is likely the consequence of the ratchet event influencing the control variables in later periods. For example, the model shows that a rolling average of profit

margins or revenue growth is clearly positively related to investments. However, as ratchet events negatively affect investments in the short and long run, this event might weigh on future profit margins or revenue growth (through either the heightened debt channel or the reduced capacity channel). This reduction of profit margins then partially explains the reduced investments in later periods and thus reduces the explanatory power of the ratchet event in the longer run, even though the ratchet event is clearly responsible for the compressed profit margin or revenue growth in the first place. This intuitively explains why the effects are less strong in the model including control variables. Moreover, any inclusion or omission might be debatable. For all the reasons listed above, we preferred to show only the results in their highest simplicity, as in Figure 5, 6 and 7 of the main document.

C.3 Results by size including controls for the cash and debt position

The amount of cash in hand and the load of passed accumulated debt are both important variables when it comes to the interaction between firm available (after payouts) cash flow and investments. It certainly affects the way firms are able to cope with the intertemporal redistribution induced by the ratchet event. The problem however is that thes variables are endogenous as they are affected by the event in parallel with the dependent variable. Including them in the regression as in Figure 7 of the main text does two things. First it partly captures the effect of the ratchet event on the outcome variable through its effect on these additional regressors, and therefore making the coefficients of the event itself smaller. Second, it increases the prediction power of the model, i.e. adding these variables increases the predictive power of our model of investment fluctuations over time (for instance, the adjusted r squared jumps up). The model performance is even better when adding lagged values of investment rates as it is known that past values of investment is a good determinant for current investment rates. However - as explained above, an estimation strategy that includes time-varying controls introduces severe endogeneity issues. Moreover, our goal is not at all to accurately predict investment fluctuations over time, but simply the difference in investment rates before and after the event as compared to the control group that didn't undergo the ratchet event. therefore an increae in predictive power is not very relevant.

Still it might be useful to control for the position of the firm in the cash and debt hierarchies in a non-endogenous way. This is done in Figure 5 in the main text, listed as the third specification. The results are very similar to the specification with time varying controls.

C.4 Callaway and Sant'Anna comparing to not yet treated and allowing for anticipation

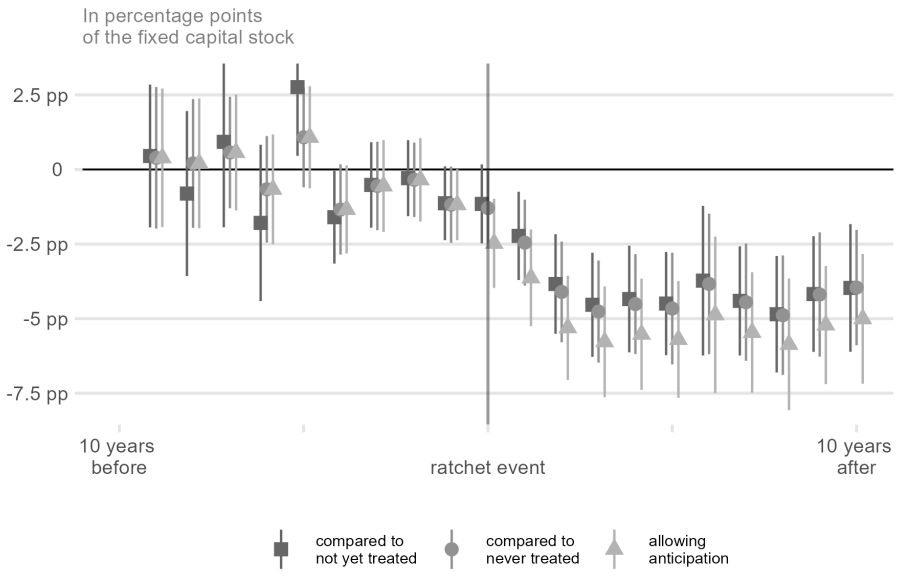


Figure 10: Inclusion of not yet treated and allowing fr anticipation

Notes : The coefficients capture a percentage point difference in investment rates among the treated with respect to the counterfactually non treated (proxied by the control units) attributable to the treatment, while controlling for time trends, sectoral differences and size disparities. These results are based on the Callaway and Sant'Anna (2021) estimator.

Additional references

- Gilchrist, S., & Zakrajsek, E. (2007). Investment and the cost of capital: New evidence from the corporate bond market. *NBER Working Paper 13174.*

- Hecht, J. (2014). Is net stock issuance relevant to capital formation? Comparing heterodox models of firm-level capital expenditures across the advanced and largest developing economies. *Cambridge Journal of Economics*, *38*(5), 1171–1206. `https://doi.org/10.1093/cje/bet070`

- Mertens, B. (2025). A world view on corporate financialization and an empirical (de)construction of payout ratios: The importance of losses, maturity and downward rigidity. *[Unpublished Manuscript under review]*

- Schich, S., & Pelgrin, F. (2002). Financial development and investment: Panel data evidence for OECD countries from 1970 to 1997. *Applied Economics Letters, 9(1)*, 1–7. `https://doi.org/10.1080/13504850110048505`