WORKING PAPER

WHEN SHAREHOLDER POWER KICKS IN: CORPORATE FINANCIALIZATION AS RATCHET BEHAVIOUR AND STICKY PAYOUTS.

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When shareholder power kicks in:
Corporate financialization as ratchet behaviour and sticky payouts.

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Abstract

The rise of payout ratios has been ascribed by financialization scholars to shareholder value orientation (SVO), a governance practice associated with dire consequences. However, it remains unclear how SVO translates into the behaviour that causes these consequences. Yet, identifying behaviour would not only allow us to causally infer what SVO entails for other firm stakeholders and wider society but also to unearth the institutional configurations that catalyze or inhibit it.

Using data on all stock-listed firms in the world from 1985 to 2023 this paper shows that SVO operates through ratchet behaviour, where shareholders refuse to yield ground when profits decrease. I first illustrate theoretically how this downward rigidity of shareholder remuneration ratchets up payout ratios and structures aggregate payout ratios along the lines of the frequency of ratchet behaviour. Finally, staggered difference-in-differences show that ratchet events indeed cause firms to exhibit persistently higher payout ratios for a decade.

Contents

1 Introduction

The theory of corporate financialization centers around the idea that shareholders have become the dominant stakeholders in the decision-process of public companies and wider society, that their interests have become the sole goal of firm strategy. Central to this theory is the idea of shareholder value orientation (SVO) (Lazonick & O'Sullivan, 2000). As a concept it is quite clear: it refers to a form of corporate governance that places the interests of shareholders above those of any other stakeholder. It is believed to have altered the strategy and behaviour of firms and to have led to real-world outcomes (Rabinovich & Reddy, 2024). One key outcome is that the share of firm income that is being redistributed to shareholders has been increasing over the last decades, an empirical fact many scholars working on corporate financialization - and beyond (Kahle & Stulz, 2020) - have established. Over the last decade, these studies have turned to firm-level data to explore the dynamics of SVO across sectors and countries, and recently the scope of those studies has become broader, encompassing more firms and more countries, spanning longer time periods and displaying more granular decompositions (Baines & Hager, 2023). Whether investigated from a firm-level perspective or by using national accounts data, SVO can be seen as the rise of shareholders - the long dormant stakeholders of the firm - to power and can best be captured by analyzing how resources leave the firm (Valeeva et al., 2022) and are captured by shareholders, i.e. by measuring the toll shareholders extract from the firm simply for being its owners, or Keynes' functionless investors, the rentiers.

Not only large US firms.

Kahle and Stulz (2020) and Soener (2021) have posited that the largest firms account for the vast majority ofthe increase in absolute payouts - dividends and share repurchases. But given that the distribution of revenues and profits is so uneven, saying that this is a story of a small share of top firms based on a metric of absolute numbers - or one dominated by absolute numbers (Mertens, 2024) - is a tautology. Mertens (2024) shows that the way we measure payout ratios profoundly matters and that firms across the size distribution have raised the percentage of their profits allocated to shareholders, albeit still most notably in the US. Figure 1 shows that the payout ratio as a percentage of profits - corrected for several biases detailed in Mertens (2024) and summarized in the Appendix - has been rising across the size distribution in many regions of the world.

Behaviour before effect and how before why.

Although scholars and the general public are increasingly aware that shareholders claim a growing share of firm revenues and profits, it is misunderstood *how* precisely they come to claim an increasing share of firm income. In this paper I ask how SVO operates in practice. The *how* might sound trivial, but I will show

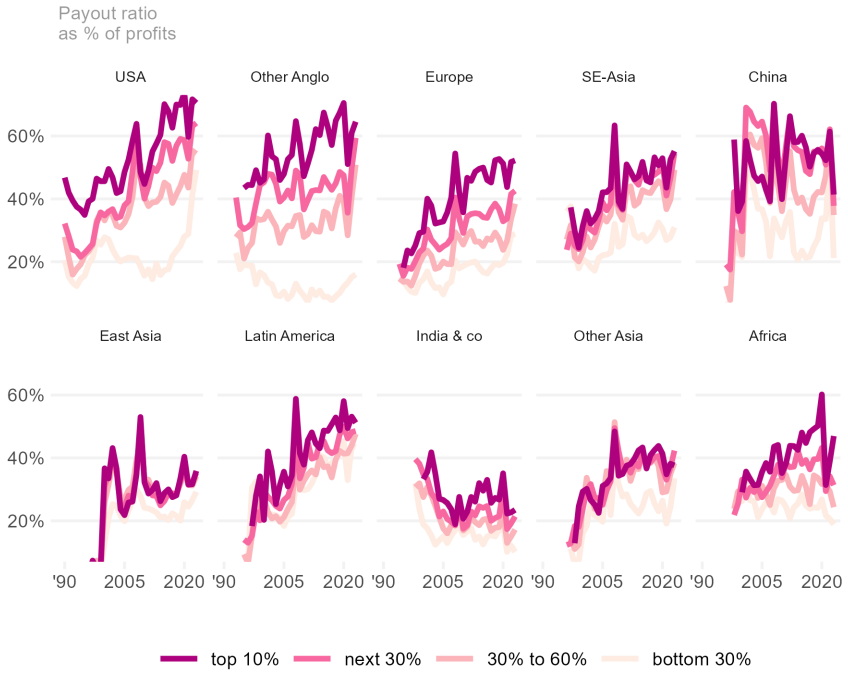

Figure 1: Not only a story of large US firms
Notes : Payouts as a percentage of profits before taxes are calculated at the firm level and only then aggregated up, which ensures all firms are treated equally, irrespective of size. Moreover, the measure gets rid of distortions as detailed in Mertens (2024), in order to better reflect the true payout ratio (see Appendix 1.2. for more information)

that the answer to this basic question is 1) counterintuitive and surprising, 2) a fundamental first step in the process of establishing the causality of some of the central hypothesized effects put forward by the corporate financialization literature and 3) an overlooked requirement for understanding the *why* - and why not.

In their review of the literature Rabinovich and Reddy (2024) rightfully lament the lack of empirical substantiation of causal claims made by the theory of corporate financialization. I believe that this dearth stems from a misunderstanding of the specific behaviour that leads to particular outcomes. Identifying the behaviour of SVO in practice would not only allow us make progress on the causality of what SVO entails for other firm stakeholders and wider society but also on unearthing the reasons why firms behave as they do. If we can exactly show what type of behaviour leads to the outcomes we associate with SVO, we can also pin down with great precision the institutional configurations that catalyze or inhibit SVO and thus make progress on *de*financialization.

Data and outline.

In this paper, I use micro-level data on all stock-listed companies in the world in order to show how SVO as a pervasive governance practice constrains firms in their decision space when hit by a negative profit shock. When faced with falling profits, shareholders seem to be unwilling to yield ground and firms tend to keep their shareholder remunerations steady, i.e. firms display ratchet behaviour. This paper precisely shows that it is this behaviour - this downward rigidity of shareholder remuneration in the face of falling profits - that mainly drives the trend of rising payout ratios over time and suggests that it is also this behaviour that causes the consequences associated with corporate financialization. I show that it is not the growth of shareholder remunerations that causes rising payout ratios, but precisely their reluctance to fall, their downward rigidity. In essence, I assess SVO empirically by identifying how SVO translates into firm behaviour and conclude that corporate financialization in practice is ratchet behaviour.

The following section will explore firm behaviour empirically, will theoretically expand on how ratchet behaviour might cause the observations we associate with SVO, and will formulate the key empirical hypothesis that it is indeed the downward rigidity of shareholder remunerations that causes rising payout ratios. Section 3 will first illustrate how ratchet behaviour can theoretically lead to rising firm-level payout ratios, how it aggregates to the population of firms and finally how it structures aggregate payout ratios along the lines of the frequency of ratchet behaviour. It does so by combining an illustration, a simulation and actual data. Comparing data with a model where we *know* it is ratchet behaviour that causes rising payout ratio suggests that ratchet behaviour might indeed be how SVO operates in practice. In Section 4 I will provide further evidence for the core hypothesis that it is the downward rigidity of shareholder payouts that persistently raises the payout ratio at the firm level by developing a staggered difference in differences methodology. With it, I test the empirical hypothesis more rigorously and assess its causal nature. The last section concludes and discusses limitations and future work.

The data consists of all the world's stock-listed firms in the Refinitiv database, from 1985 until 2023. Table 1 gives a regional breakdown of the number of observations and unique firms that will be effectively used in the figures and analyses of this paper. For more information on the data cleaning process and a description of further data manipulations required to reproduce the figures and analyses, I refer to Section 1 of the Appendix.

2 SVO, firm behaviour and hypothesis

Often it is implicitly assumed that rising payout ratios - the percentage of profits being distributed in cash to shareholders in the form of dividends or share repurchases - stem from some sort of shareholder bonanza, or shareholder exuberance (Soener, 2021, p. 823), which is also assumed to have detrimental effects on other stakeholders. Investments is of particular interest here due to its central place

Region	Firms	Observations
USA	15.891	220.094
Europe	13.051	171.424
SE-Asia	7.942	123.283
Other Anglo	10.804	122.994
China	8.327	113.552
East Asia	5.119	104.645
Other Asia	5.975	90.072
India & co	5.764	73.930
Latin America	2.096	33.078
Africa	1.564	23.493
Total	**76.533**	**1.076.565**

Table 1: Regional breakdown of stock-listed firms in the world
Notes : This table gives a regional breakdown of the number of observations and unique firms used in this paper. 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.

in the financialization literature. Many scholars in the post-keynesian tradition have theorized that shareholder payouts (and financial investments) can crowd out productive investments as increasing payouts to shareholders is argued to drain the internal funds available for investments (Epstein, 2005; Davis, 2018a; Tori & Onaran, 2018). In empirical models (Orhangazi, 2008; Barradas, 2017; Davis, 2018b; Tori & Onaran, 2018; Tori & Onaran, 2020) relating investments to financialization, the first are regressed on payouts normalized by some variable. It is assumed that the *level* or the *change* of payouts affects investments, or other variables of interest (Palladino, 2021). The same holds for the media and the general public; it is the absolute level of payouts or their increase that draws attention. This is exemplified by the attention given by the media and civil society to the payout behaviour of fossil fuel companies during the recent war and pandemic induced gas crisis. The ten biggest fossil energy companies in North America, for example, more than doubled their payouts in 2022, to more than 100 billion dollars. Still, in that same year, their combined payout ratio fell by 10 percentage points, to its lowest level since 2014. What the general public and the empirical estimation strategies in the academic papers mentioned above would identify as the pinnacle of financialisation is, in fact, not. Despite higher levels of - and massive increases in - payouts in 2022, these companies end up with a significantly lower payout ratio and more cash in hand to finance investments. The point is that we need to identify the exact firm behaviour that causes the observations ascribed to corporate financialization. Exuberance among shareholders, as described above, is not it.

This paper argues that the persistent rise in payout ratios over time - and the consequences associated with it - is driven not so much by exuberant payouts in good times as by downward rigidity of payouts in dire times. It is thus not the level or the change of payouts that is of importance but their downward stickiness, their immovability in the face of profit troughs.

2.1 No shareholder bonanza, but downward rigidity

Figure 2 depicts the frequency of occurrence of each possible type of firm behaviour when it comes to the interrelation between profits and payouts, split by size group. Most often, when profits increase, payouts increase as well, but less so than profits do. In this case, the firm has more retained earnings than it had in the previous year. As such it is not likely that these rising payouts displace any investments or other expenditures as in fact, the payout ratio tends to fall in these instances (on average by 7 percentage points). Despite increasing payouts, there is no reason to believe that these rising cash payments to shareholders would displace any other socially desirable spending.

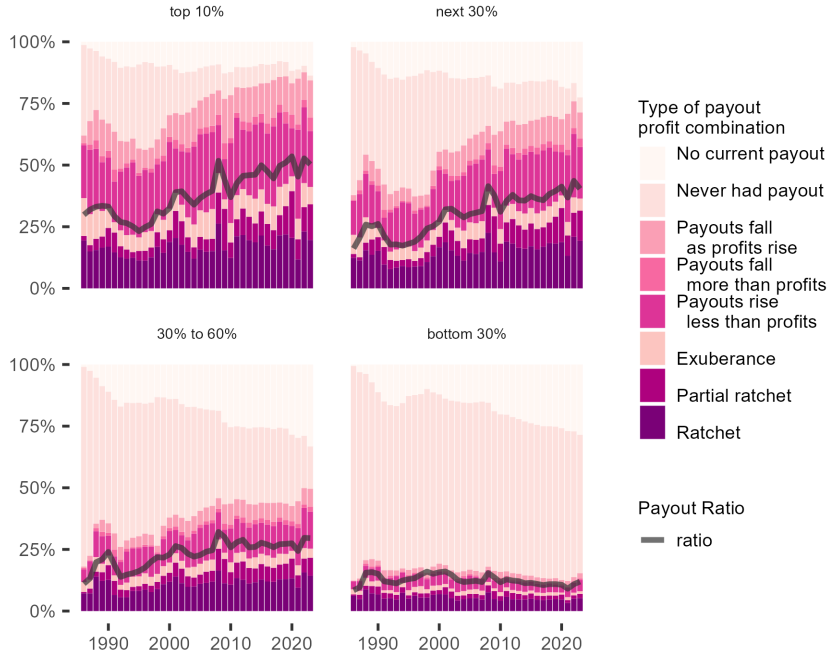

Figure 2: Mapping firm behaviour based on evolutions of payout and profits
Notes : This figures gives the yearly relative frequency of each type of behaviour relating to the evolution of profits and payouts. Ratchet is defined as a year when profits decline but (non-zero) payouts do not fall (or even rise). Partial ratchet is defined as a year when payouts are adjusted downwards but fall relatively less than profits. Exuberance is defined as years when payouts rise more than profits. The payout ratio depicted gives equal weight to all companies and is not driven by losses or outliers, following the methodology developed by Mertens (2024) and explained in the appendix.

Payout ratios can of course rise when profits increase as well, mainly when firms boost cash hand-outs to shareholders more than warranted by the increase in their profits, thus mechanically leading to higher payout ratios and reducing retained earnings, a situation I define as shareholder exuberance. However,

exuberance defined as such does not occur very often, as shown in Figure 2. This figure instead draws our attention to situations where profits decrease. Indeed, shareholders - the residual claimants - seem to be less inclined to share in the cost of falling profits than they are to reap the rewards of rising profits. When profits fall, on many occasions, payouts remain steady ("Ratchet") or fall by less than profits do ("Partial ratchet"). Payouts thus seem to - just like a ratchet - fractionally adjust upwards in good times but to be downward rigid in bad times. Firms thus display ratchet behaviour, asymmetrically adjusting payouts to changes in profits. This ratchet behaviour leads to sticky payouts through ratchet events, occasions where profits fall but payouts do not budge. Occasions that - as shown by the two bottom categories of Figure 2 - are quite frequent and seem to coincide with spikes in the payout ratio. These events would by definition reduce the cash available for investments. Note that this paper's position is not simply that the aggregate frequency of ratchet occurrence is driving the aggregate payout ratio, but rather that on the level of the individual firm - as we will see in the next section - each ratchet occurrence raises the *firm's* payout ratio, not once but persistently over the ensuing years.

2.2 Asymmetric partial adjustment of payouts

This is not to say that exuberance does not matter, but simply that it is far less frequent and less impactful than its corollary, ratchet behaviour. Nevertheless, among large companies exuberance might play an important role, although I believe some of this exuberance might be explained by the work of Almeida, Fos and Kronlund (2016). They document how firms implement repurchases in order to just meet earnings per share (EPS) targets. In such instances, payouts will likely rise more than warranted by the rise in profits. But even among top firms, ratchet behaviour is far more frequent.

Still, thinking about why shareholders would be more inclined or able to require (or managers more inclined to acquiesce to) stable or rising payouts amidst a profit crisis than to raise payouts disproportionally when profits rise is important. Dividend smoothing has been a well known and much discussed feature of payout policy since Lintner's partial adjustment model (1956). Th advent of repurchases have led to the extension of this idea to total payout smoothing (Renneboog & Trojanowski, 2007), but less attention has gone to the potential asymmetric nature of that smoothing. With a survey with financial executives of publicly listed companies in the US, Brav, Gomper, Harvey and Michaely (2005) confirmed that financial executives absolutely try to avoid reducing dividends and only marginally increase them when earnings grow out of fear of having to reduce dividends in the future. This gives weight to the idea of an asymmetric partial adjustment model, as such preferences would translate into downward sticky payouts and no exuberance (discounting share repurchases), i.e. into ratchet behaviour.

One reason for downward sticky payouts is the development of the stock price and the importance of payouts as a signal to stockholders - a signal of future permanent earnings (Jensen, 1986) - and therefore the effect of payouts on the

stock price. As total returns to shareholders comprise of both the evolution of the share price and cash payouts, a positive or negative earnings or profit outlook might induce a different reaction of both components. On the one hand, when a bad profit outlook is revealed, stock prices will tend to react negatively, which could incentivise the firm to signal confidence, for example, by keeping payouts stable or even raising them, given that payout announcements have a positive effect on a firm's stock price (Ham, Kaplan & Leary, 2020). Thereby, managers try to counter the effect of the bad performance on the stock price due to the profit outlook with a signal - steady or rising payouts - of a swift recovery to the firm's stockholders, simply because they are (over)confident (Lin & Yu, 2023) or because they want to appear so. This last case is suggested by the literature on SVO, which points at the co-optation of management by linking their pay to the stock's price performance - through stock-based remuneration schemes (Aglietta & Rebérioux, 2005; Davis & Kim, 2015; Erturk et al., 2005), therefore directly incentivising management to prevent drops in the stock's price, certainly close to the time from which their stock options can be exercised. When profits increase, on the other hand, the signal to shareholders is already positive. Therefore, simply allocating part of those extra profits to them - and therefore letting the payout ratio fall - will be sufficient to satisfy shareholders' thirst for returns. Shareholder payouts then simply become more downward rigid than they are upward mobile - just like wages - because the phenomenon (loss aversion) that losing in absolute terms feels much worse than not getting the most winnings as possible.

From the perspectives of both management and stockholders, one thus gets an incentive to keep payouts steady in the face of falling profits. This incentive will be more or less pronounced depending on firm characteristics, such as the specific management payment scheme, the current cost of external financing (how cheap is debt to cover for the fall in profits?) and the concentration of ownership. It is only when resources become scarce that shareholder power - or primacy - kicks in.

Finally, the developments just after the Great Financial Crisis (GFC) of 2008-2009 suggest that a firm that felt compelled to ratchet in the years prior to the crisis might be able to make use of the general decline of stock prices - and thus shareholder expectations - during the GFC to lower payouts afterwards. This points at another reason to keep payouts steady in the face of falling profits, in the vein of keeping up with the payout policy of peer companies - i.e. competitors in the investor space (Leary & Roberts, 2014). The GFC thus could have acted as an opportunity for firms to reset payout ratios, to reduce payouts to a level more aligned to the then level of profits. Figure 2 clearly shows that there is a marked increase in 'no current payouts', 'payouts fall more than profits', and 'payouts fall as profits increase' in 2009-2010, as well as a very low amount of ratcheting in 2010. This indicates that the constraint placed on firms is lessened during times of general crisis, indicating that the expectations shareholders have is a relative phenomenon, as in relative to the general market performance (or at least their immediate peers). This might lend credibility to the notion that ratchet behaviour stems from a desire to signal (false) confidence.

During crisis everyone makes losses so your losses as a firm do not stand out and you do not need to signal confidence to dampen the effect on your specific stock price relative to that of your peers.

2.3 The firm as a battlefield of contending interests

Baines and Hager (2023, p. 13) proposed a useful framework to make the distinction between rentierization and financialization based on the evolution of profit margins alongside that of financial payments. The first set of firms can sustain high payout ratios because of high profit margins, while the second set of firms are locked in a conundrum of low margins and high payout ratios, effectively eroding their capacity to regain their footing in the longer run. Although rentierization and monopolization are important when investigating the very top of the universe of firms, this paper argues that the average (in the nonmathematical sense of the word, i.e. not weighted according to size) firm in the stock market - certainly in the USA (Mertens, 2024) - is on a path of what they call *adverse financialization*. The evolution of profit margins among the vast majority of stock listed companies has not been positive, but rather stagnant. Only at the top end of the size distribution do profit margins increase (Mertens, 2024). Moreover, their classification is too stringent, as I will argue that a firm does not need to be in decline per se, but rather that its profit margin simply needs to undergo fluctuations. As soon as adverse shocks periodically surface, even on a generally upward growth path of profits, ratchet behaviour yields adverse financialization, as each shock will lastingly redistribute from other stakeholders to shareholders, as these refuse to yield ground. Given that adverse shocks do indeed occur quite frequently, in all sectors, regions, and across firm sizes, it is ratchet behaviour that dominates the evolution over time of payout ratios, indebtedness, and investment rates.

If the firm is seen as a battlefield of contending interests between shareholders, workers, management, investments, the wider society, and the environment, instances when profits decline, when resources are scarce bring this conflict between stakeholders to a climax. During those crisis moments, shareholders are able to keep their spoils - and thus vastly increase them as proportion to depressed firm income. Those instances of ratchet behaviour clearly reaffirm the position of shareholders at the top of the stakeholders' foodchain and epitomise the concept of SVO. Since the demise (Rabinovich, 2018; Soener, 2021) of the financial rentierization hypothesis which blamed financial investments for crowding out capital expenditures - it likely is ratchet behaviour that causes the consequences financalization scholars associate with it, such as rising indebtedness and falling investment rates. It could at least constitute an important step in the direction of substantiating the causal claims made by the literature, because keeping payouts steady during a downturn would not only cause a mechanical surge in the payout ratio but likely also imply cutting back on other spending (investments or debt repayments, for instance) or would require additional cash from the sale of assets or new debt, which in turn would have consequences down the road.

2.4 Hypothesis: ratchet behaviour causes persistently higher payout ratios

The core proposition of this paper is thus that SVO in practice is ratchet behaviour, that it is specifically during rainy days that the pressure for returns exerted by shareholders manifests and causes the observations associated with corporate financialization and SVO. To validate this proposition I need to show that the key observation associated with SVO - rising payout ratios - does indeed stem from ratchet behaviour and thus that ratchet behaviour has persistent consequences for the payout ratio at the firm level. Therefore I will propose an operational hypothesis, develop it theoretically and support it empirically in Sections 3 and 4.

The core operational hypothesis is that it is ratchet behaviour that causes the rise over time of the payout ratio at the firm - and therefore aggregate - level and thus that ratchet events persistently - i.e. not only in the short but also in the longer run - push up the firm-level payout ratio. This persistence can be driven by four not mutually exclusive reasons:

1. Profits recover slowly after a negative shock, which means that keeping payouts steady implies a higher payout ratio for as long as profits have not fully recovered.

2. Payouts tend to fractionally adjust upwards as profits increase, as shown by Figure 2. This means that during the recovery, a fraction of that recovery is allocated to shareholders, such that even with a swift recovery, the payout ratio will stay higher for longer.

3. Ratchet events have consequences that are dynamic. If the gap in cash created by ratchet events is covered by increasing debts, the sale of assets or the reduction of investments, the ratchet event reduces future potential profits, decelerates trend growth rates, and - ceteribus paribus - keeps the payout ratio at persistently higher levels.

4. Firm profits are subject to heavy fluctuations and a ratchet event is no singularity. If a firm - for whatever reason - feels compelled to ratchet during profit troughs, ratchet events can an do occur multiple times. Given the slow reversal of the payout ratio after each ratchet decision, each consecutive ratchet event pushes the ratio to new highs.

The next section illustrates how ratchet behaviour operates at the firm level, how it aggregates to the population of firms and how it structures aggregate payout ratios along the lines of the frequency of ratchet behaviour.

3 An illustration, a simulation and the aggregate data

The idea is thus that firms tend to display downward sticky payouts in the face of falling profits, and that it is precisely those episodes of falling profits

coinciding with downward rigid payouts that drive up the firm-level - and thus also aggregate - payout ratios. Not simply mechanically during the year that profits fall, but persistently over the subsequent years.

3.1 How ratchet behaviour can cause rising payout ratios: a static and stochastric approach

Figure 3 illustrates how this works. It depicts the evolution of profits and payouts of a fictional company. The firm's profits are characterized by a general upward trend, but are subjected to shocks leading to fluctuations. The share of profits allocated to shareholders, the payouts, reacts to profits in two ways.

First, shareholder remunerations increase as profits rise, but always less so than the rise in profits. Not only in absolute amounts, but also relatively, which implies that each occurrence of rising profits effectively reduces the payout ratio. This reflects the fact that this is the most common behaviour of firms as shown in Figure 2. As a firm would want to use those additional funds to expand capacity by investing, to build a safety net by retaining cash or to get rid of the historical debt burden by repaying existing debts, it would be unwise to distribute all additional gains to shareholders, certainly given the fact that the firm's future profits are subject to fundamental uncertainty. Under this rule, any rise in profits is accompanied by a falling payout ratio. A firm exhibiting a continuous rise in profit would thus be characterized by a steady fall of the payout ratio. The second behavioural rule of the payout response is downward stickiness in the face of falling profits, payouts do not budge when profits have taken a temporary hit. The firm thus displays ratchet behaviour, i.e. upward adjustment in good times accompanied by a reluctance to cut back its shareholder payments during bad times.

The resulting payout ratio inherits a general and quite pronounced upward trend from these two behavioural rules but the rise of the payout ratio stems not from the exuberance of rising profits, but precisely - and in this case solely - from the downward rigidity of shareholder payouts, from the firm's ratchet behaviour. Points one through four in the enumeration above apply here. Not only is not every recovery immediate, but clearly, part of every recovery is captured by shareholders, effectively meaning that a return to pre-shock profits coincides with a higher payout ratio. The strong rise certainly is also attributable to repeated ratchet behaviour induced by the volatility of profits. And finally, the trend growth rate of profits decelerates over time, reflecting that repeated ratchet behaviour might come at the cost of lower investments and higher indebtedness. This deceleration slows down the reversal of the payout ratio after each negative shock, implying that the ratchet events relatively weigh more heavily on the payout ratio. A combination of profit volatility, downward rigidity and dynamic consequences is thus a sufficient - and I argue a necessary - condition for rising payout ratios over time.

The illustration above can be generalized by a stochastic process - a toy model of firm behaviour based on ratchet behaviour. This model simulates data of firms whose profits are driven by a strong upward trend but subjected

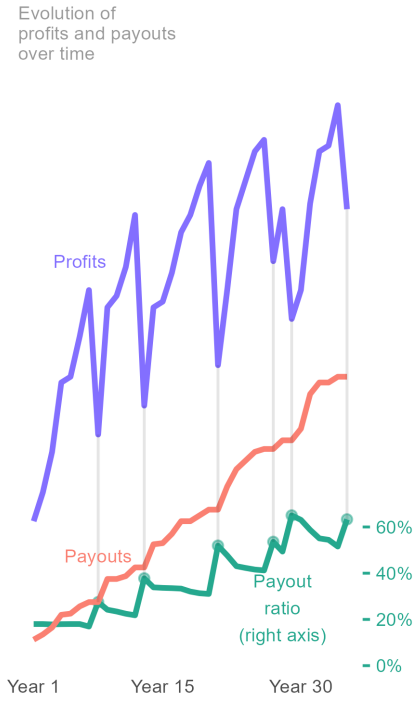

Figure 3: How ratchet behaviour alone can lead to rising payout ratios
Notes : This figure represents a model firm characterized by a rising trend with year on year volatility in profits, and downward rigidity in payouts. Payouts rise when profits rise, but always at a slower rate and payouts do not budge when profits fall. This effectively means that the payout ratio rises over time solely due to ratchet behaviour.

to fluctuations, positive and negative stochastic shocks. These fluctuations - which disappear at the aggregate due to their symmetric nature - will make sure that despite generally growing profits the payout ratio inherits an upward trend from the behavioural heuristic, ratchet behavior, at the core of the toy model. For more information on this simple toy model I refer the reader to the appendix and the reproducible code on GitHub, but Figure 4 illustrates this tension between firm-level and aggregate dynamics and shows that profit fluctuations combined with downward rigidity of payouts are sufficient to create aggregate *adverse financialization* dynamics as conceptualized by Baines and Hager (2023). On aggregate, a smooth upward trend in both profits and payout ratios emerge, despite the fact that on the disaggregated level, payout ratios almost solely rise when profits fall. Aggregate smoothness hides underlying fluctuations around a certain trend. It is precisely those fluctations in profits that induce the upward trend in the aggregate payout ratio. Despite the fact that the shocks to the system are symmetric around zero - and thus on aggregate disappear leaving only the smooth upward trend - and that payout ratios fall

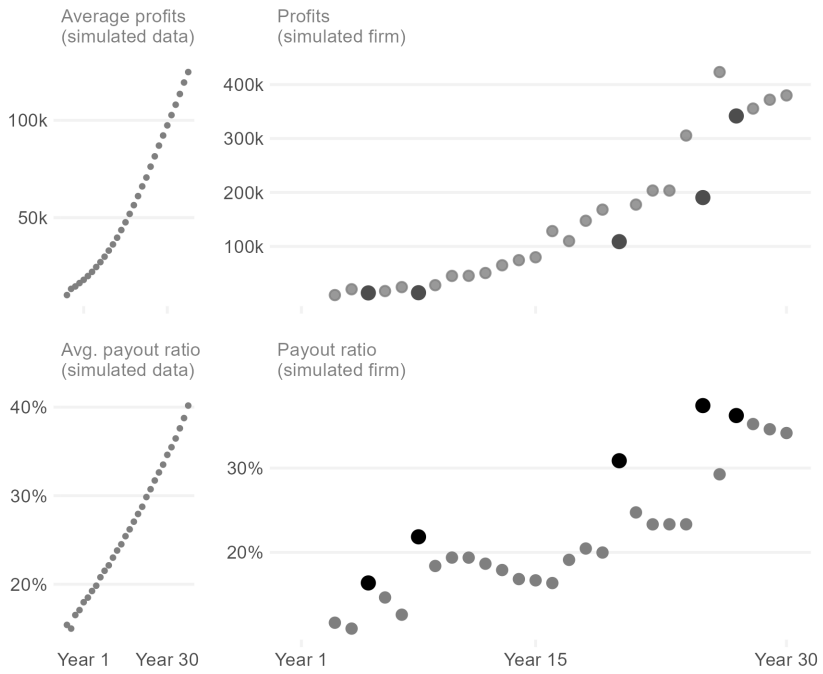

Figure 4: Simulated aggregate data and individual firm
Notes : This figure shows the evolution of profits and payout ratios of firms created by the toy model. On the one hand the aggregate view, averaging across all 50.000 simulated firms, and on the other one example of those firms, with in black occurrences of ratchet behaviour. Crucially, both the aggregate payout ratio and aggregate profits can rise over time despite the fact that rising profits lead to falling payout ratios. The occurrence of micro-level fluctuations of profits and downward rigidity of absolute payouts is sufficient to cause a rising aggregate trend in the payout ratio.

whenever profits rise, the resulting payout ratio inherits a strong upward trend from the occasional negative shocks. Each negative shock accompanied by the unwillingness of shareholders to yield ground ratchets up the payout ratio persistently. The heavier the firm-level fluctuations, in amplitude or frequency, the higher the payout ratio tends to be. This toy model illustrates the counterintuitive proposition central to this paper: that payout ratios rise almost exclusively due to downward rigidity - when profits fall - and that despite profits generally increasing, payout ratios increase as well due to periodic shocks and slow mean reversal. This important insight connects very well to Baines and hager's idea of *adverse financialization* driven by a combination of falling profit margins and higher financial payouts. But the idea of ratchet behaviour, and this toy model in particular, shows that a firm does not need to be in decline per se, but simply that its profit margin needs to undergo fluctuations. Adverse profit shocks, despite them being on an upward growth path, will lastingly redistribute from

other stakeholders to shareholders due to ratchet behaviour and will thus lead to *adverse financialization*.

Although it is now clear that ratchet behaviour *can* be the cause of rising aggregate payout ratios - and that it represents the behavioural embodiment of SVO - it remains unclear how well this concept of ratchet behaviour reflects reality.

3.2 The frequency of ratchet behaviour determines the slope and level of payout ratios

A first look at the real data shown in Figure 5 already suggests that ratchet behaviour - and thus the downward rigidity of shareholder payouts - might indeed be the behavioural embodiment of SVO. Panel A in Figure 5 groups the - real - firms according to the frequency they display (full) ratchet behaviour and shows each group's aggregate payout ratio over time. What is immediately clear is the strong stratification in the payout ratio based on the frequency a company displays ratchet behaviour. The more often it does so, the higher the payout ratio tends to be. This stratification pattern with respect to ratchet behaviour keeps clearly emerging when splitting the population in groups based on size, age, sector, or geographical region of the firms (see the Appendix), which is a first indication that ratchet behaviour is a more fundamental feature of rising payout ratios than these firm characteristics.

Panel A of Figure 5 is a static representation of the ratchet effect, it calculates the ex post frequency of ratchet behaviour, constructs groups on the basis of the ex post number of ratchet occurrences, and then calculates the evolution of payout ratios within each group. This shows only part of the picture. A more dynamic measure of ratchet behaviour would help understand the developments in the payout ratio as each additional ratchet event occurs. Panel B of Figure 5 does precisely that. Each firm starts in the "never" category and only switches to the next category on the year it exhibits ratchet behaviour. Then it stays in that category until the moment it undergoes an additional ratchet event, at which point it switches to the next category. For example, a company that in panel A is categorized as "seven or more", will first have to pass through all other categories in panel B. Note the sharp differences between the two panels of Figure 5. While the underlying data is strictly the same, the outcome is vastly different during all years but the last - which by definition yields the same results in both panels. One can clearly see in Figure 5) that each ratchet occurrence shifts the payout ratio upwards. While the stratification in panel A might be coincidence, panel B shows that in all likeliness, it is indeed ratchet behaviour that drives the upward shift in the payout ratio.

Interestingly, this ratchet-induced stratification emerges across firm characteristics such as size, region or sector (shown in Appendix 2.3). This means that within each group based on a certain firm characteristic, it is the frequency of ratchet behaviour that drives the level and growth of the payout ratio over time. The fact that the pattern shown in Figure 5 emerges across all these categories

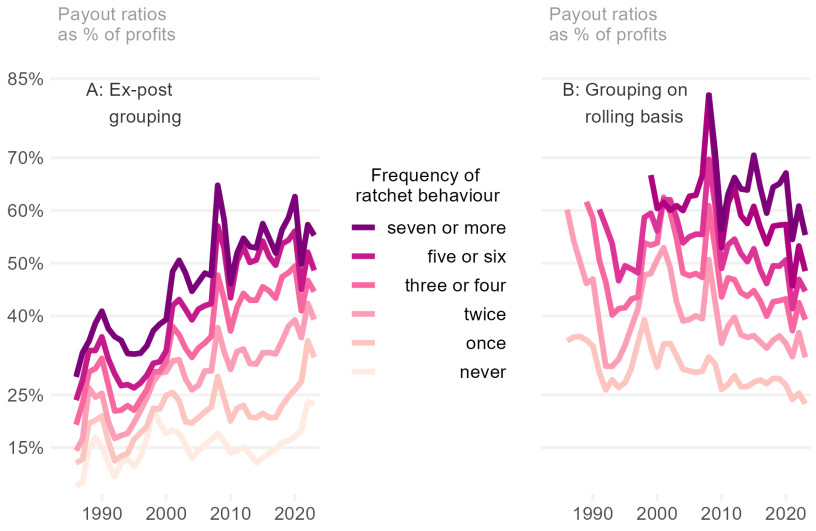

Figure 5: The frequency of ratchet behaviour coincides with higher payout ratios
Notes : In panel A the groups are determined on the basis of the ex-post frequency of ratchet behaviour. In panel B, each time a company displays ratchet behaviour, the company moves one place up in the ratchet hierarchy. For example, a company that will display ratchet behaviour seven times in total, the first in 2004 and the last in 2019, will appear in group "seven or more" during its entire existence in panel A, while only from 2019 onwards in panel B. The same patterns emerge across sectors, regions and firm sizes (see Appendix 2.3). Note finally that each category in panel B is only displayed from the moment it contains at least 50 constituents, in order to ensure visual clarity of the figure.

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.

Still, while compelling, an aggregate view might not reflect the behaviour of individual firms. For the hypothesis to be true, this aggregate observation needs to stem from individual firm behaviour. At the firm level, each ratchet event should not only cause a temporary surge in the payout ratio, but also cause it to stay more elevated in the ensuing years. This firm level persistence - as shown in Figures 3 and 4 - is the key to showing that SVO indeed manifests as ratchet behaviour.

4 Ten years of higher payout ratios at the firm level

To answer the question of whether ratchet events have lasting consequences for firm-level payout ratios, I implement a (staggered) difference-in-differences (DID) econometric methodology.

4.1 Methodology

When a firm displays ratchet behaviour it makes the discrete decision to keep payouts steady in the face of falling profits. The implication that other decisions can be made and are indeed made allows for a quasi-experimental econometric design, in which some firms are treated with a ratchet decision and others are not. This econometric design allows us to exploit the differences in the outcomes of treated versus untreated firms - i.e. the ratcheting firms versus those that do not - in order to infer what the impact of the treatment is on the outcome variable. In this case, we want to know what happens over time to the payout ratio of firms that have undergone the treatment, i.e. the ratchet event.

The ratchet event

First I need to define a ratchet event. The idea is simple, falling profits accompanied by steady or rising payouts, but in order to capture the conscious decision of management and shareholders to keep payouts steady in the face of a decline in profits, the definition needs to be narrowed down further. The profit decline must be sizeable and not simply reflect a minor glitch in an otherwise steady profit outlook. Therefore, only a profit decrease of at least 15% with respect to a three year rolling average of profits is considered. This way we make sure the ratchet decision is a conscious one, made in the face of really bad profit results. Of course, the company must have had payouts in the year of the event, so that steady payouts at zero are not included. Firms need to have been mature enough to start remunerating shareholders and be at least five years old.

This event definition results in 30.151 firms in the treated group - firms that at one point in time undergo the event - and 22.288 firms in the never treated group - firms that do have payouts but never ratchet. In total, counting only firms that already have started remunerating their shareholders, there are 399.303 observations that are never treated or not yet treated and 320.255 observations that have already been treated.

The parallel trends assumption

One problem with the *quasi* in quasi-experimental is that we actually observe only one of both potential outcomes. A firm either decides to ratchet or it does not. In order to measure the impact of ratcheting we would need to compare the payout ratio after a ratchet event with the outcome when that same firm did not display downward stickiness. In a real-world setting this is not possible, as the first potential outcome is observable, but the second is merely hypothetical. DID estimators overcome this by "implicitly imputing the counterfactual outcomes of treatment units using outcomes for the control units" (Baker et al., 2022, p. 372). However, this requires the assumption that treatment and control units display parallel trends in the outcome variable, i.e. that the treated firm would behave similarly to the untreated firm in the hypothetical scenario that the treated firm would not have been treated. Note that it is not the level, but the change over time that needs to be similar. Finally, this assumption required

that there are enough never treated units, which is clearly the case here (over 22.000 firms in the never treated group).

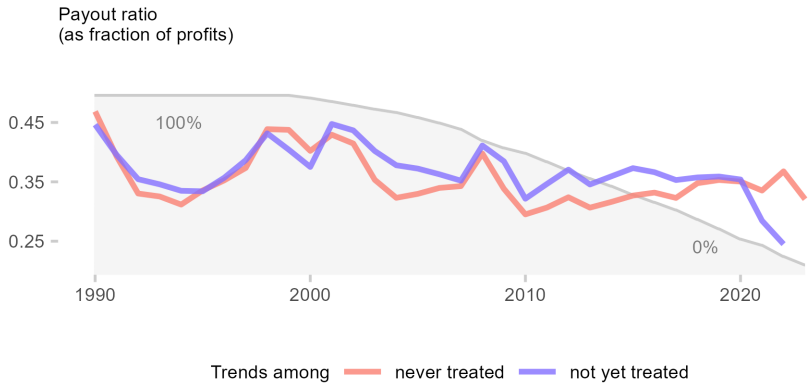

Figure 6: Parallel trends in payout ratios
Notes : The co-movement of the payout ratio in the control group with that of the treatment group before being subjected to the treatment suggests that the PT assumption holds. Only firms mature enough to have started paying out cash to shareholders are considered. As group sizes can become quit small in the early nineties (or by the end of the period in the case of the not yet treated, by definition), the figure only displays lines whenever there are at least 50 group constituents. This figures excludes all firms from the moment they undergo a ratchet event. Trivially, if it did not do so, the divergence between treatment and control group would widen over time.

This parallel trends (PT) assumption is not directly testable. What can be done is to visually inspect whether the assumption is likely to hold. Therefore, Figure 6 displays the outcome variable of both the never treated - the control group - and the firms in the treatment group *that are not yet treated*. To be clear, the not yet treated are those firms that will at some point in the future undergo a ratchet event, but have not done so yet in the specific year under consideration. In addition, the shaded area reflects the proportion of those treated firms that are not yet treated, thus that have not yet undergone a ratchet event. Evidently, this proportion starts at 100% and ends at zero. Lines are only displayed as soon as there are at least 50 group constituents - year, region, treatment.

One can see that the PT assumption does indeed seem to hold in the data. The co-movement of the payout ratio of the not yet treated and the never treated is remarkable, which likely follows from the fact that ratchet behaviour is widespread among firms, and not at all restricted to large multinational corporations.

In the Appendix, I further disaggregate the population of firms into regions, sectors and firm sizes and reconstruct Figure 6 for each subcategory, which shows that even at lower levels of aggregation, thus controlling for covariates, the PT assumption generally seems to hold. Only the bottom 30% size category

likely is problematic as it contains many firms frequently or perpetually making losses. Subsequently, I remove this group from the population of firms when applying the did methodologies below.

Note furthermore how the rising trend over time completely disappears when discounting those firms that already have exhibited ratchet behaviour. This is the case on aggregate as well as in most of the subcategories - except in the USA, which I will come back to. Trivially, constructing the same graph including all treated firms, irrespective of whether they already experienced a ratchet event or not, the divergence between treated and control groups widens over time, suggesting that ratchet events do indeed push up the payout ratio. Worded more strongly, without ratchet behaviour there is no upward trend in payout ratios over time.

Finally, to further control for the PT assumption I also conduct an estimation (reported in the Appendix) where the not yet treated are part of the control group. That the differences in outcome between both strategies are minimal provides further evidence in favour of accepting the PT assumption.

Another important assumption is that firms do not anticipate the treatment in advance. It is unlikely that a firm in year $t-1$ anticipates a strong decrease in profits in year t and already decides in advance that it will hold its payouts steady during that negative profit shock, certainly because most shareholder payments for year t are actually made in the early quarters of year $t+1$. Such anticipation would require a lot of foresight in the workings of the global economy and imply that the amount of cash distributed to shareholders is determined years in advance. Both hypotheses are very unlikely to hold from which I derive that ratchet events are not generally anticipated in the year let alone years prior to the event. Even if there would be anticipation of ratchet events, it is virtually impossible that it would extend to two years prior the ratchet event. In the Appendix, I also report the results of an estimation strategy that can account for anticipation of the treatment.

4.1.1 New literature on staggered adoption

In essence, a DID methodology boils down to the estimation of the two way fixed effects (TWFE) equation:

$$Y_{it} = \theta_t + \eta_i + \beta D_{it} + \epsilon_{it},$$

where θ_t and η_i are time and unit fixed effects and D_{it} is a dummy variable that is 1 when the unit is treated and thereafter and zero when it is not.

However, as ratchet behaviour is not coordinated, the treatment time differs from firm to firm, leading to staggered adoption of the treatment, hence, a staggered difference in differences methodology. However, this staggered adoption renders the standard two-way fixed effects DiD estimator potentially severely biased (Goodman-Bacon, 2019; de Chaisemartin & D'Haultfoeuille, 2020). Moreover, as stated earlier, our hypothesis is that ratchet events have lasting but diminishing effects on the payout ratio. This means that the treatment has a different effect on the outcome over time, i.e. a time-varying affect. Specifically,

as stated earlier, I expect the payout ratio to (mechanically) rise on the time of treatment and then slowly revert back during the years following the treatment. This time induced heterogeneity in treatment effects can also lead to severe bias in standard (staggered) DID estimators (Baker et al., 2022). The econometric literature (Sun & Abraham, 2021; Callaway & Sant'anna, 2021) has developed ways to circumvent this bias, as "each [alternative] estimator modifies the units that can act as effective comparison units to avoid comparing treatment units to inappropriate controls" (Baker et al., 2022, p. 383).

The methodologies developed in both these papers, Sun and Abraham (2021) and Callaway and Sant'anna (2021), allow for both time and effect heterogeneity and only compares treated firms with the never treated. The Sun and Abraham estimator is implemented using the *fixest* package by Laurent Berge, while the Callaway and Sant'anna estimator is implemented (in the Appendix) using their *did* package. Their papers provide the mathematical equations and substantiations of the basic explanation laid down here, specifically the way the group-time *Average Treatment Effect* can be aggregated.

As advocated by the literature I do not include time-varying covariates, but only time and unit fixed effects. Standard errors are clustered at the unit level. Note that time can be constructed in two ways. The first is historical time, which means that the results will compare the treated firms to their untreated counterfactual while controlling for year fixed effects. The second way to conceive time is based on the age of the firm, with time running from birth to death, which means the comparison happens across similar age groups of firms. Both time dimensions will be shown, and although the magnitude and persistence of the effect is different, the outcome is qualitatively very similar.

As a robustness check, the appendix also reports on the results using the alternative Callaway and Sant'anna (2021) estimator, which also allows for both time and effect heterogeneity. Additionally, the appendix will also report the results of a model where the control group also contains the not yet treated firms. As will be shown, the differences are negligible.

4.2 Results

The hypothesis that ratchet behaviour has lasting consequences for the firm-level payout ratio seems to be vindicated by Figure 7. This figure represents the results - including error bars representing standard errors clustered at unit level robust to serial correlation - for all firms in the world. This average effect conceals heterogeneity across regions, firm sizes and sectors, which I will expand on hereunder and in the Appendix.

Figure 7 first shows that indeed the ratchet event pushes the payout ratio upwards mechanically - and thus trivially - during the year of the event. Note the strength of the effect, which can be interpreted as the average percentage point deviation among ratcheting firms with respect to non ratcheting firms, while taking firm and time fixed effects. The initial strength of the effect probably explains the spikes in the aggregate payout ratio observed during crisis years in Figure 2, years where more firms ratchet than average. However, this strong

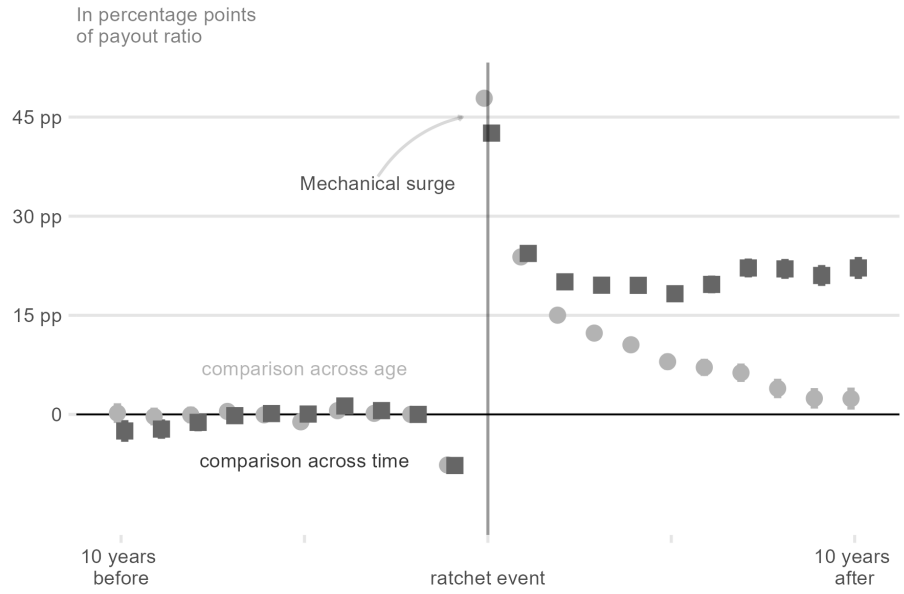

Figure 7: Ratchet events cause the firm level payout ratio to remain elevated for over a decade

Notes : The estimates show the difference between the treatment and the control group, caused by the treatment. The adjusted R squared for both models - with time based on years versus time based on age - is respectively 36.6% and 38.6%. Each specification includes fixed effects for firm and time (being age or year). The figure also includes 95% confidence intervals, but these are so small to be invisible.

initial effect does not last. As per our hypothesis, the payout ratio reverts, which means the effect of the ratchet event is decreasing over time (hence our use of an estimator robust to heterogeneous and time-varying effects). But crucially, the payout ratio of firms that decided to ratchet stays significantly higher relative to non-ratcheting firms for at least a *decade*. The interpretation of the results is fairly straightforward. For example, an estimate of close to 0.15 in year $t+2$ effectively means that if the average payout ratio among non-ratcheting firms of a particular age is 35%, the average among ratcheting firms of that same age will be 15 percentage points higher, around 50%. When discarding age and looking at historical time, the effect is even stronger and more persistent. A point estimate of 0.20 at $t+5$ means that a firm that displayed ratchet behaviour 5 years prior will have - on average - a payout ratio 20 percentage point higher than its peers in that same year that did not undergo an ratchet event. This is a quite sizeable effect, and it remains positive and significant for a long time. This means that the payout ratio among firms that do exhibit ratchet behaviour does not simply jump higher on the year of the ratchet event, but that it remains higher than their non-ratcheting peers for close to a decade. This econometric design can thus answer the question whether ratchet behaviour has persistent

effects on the firm-level payout ratio.

The effect over historical time is clearly stronger than that over firm age, which is comprehensible, given that firm age is an important determinant of payout ratios (Mertens, 2024). Over historical time the comparison group consists of both young and old firms, while over age-based time the control group consists of firms of similar age. The fact that the effect remains when considering age-based time lends even more strength to the argument that it is through ratchet behaviour that payout ratios rise over time.

One last thing needs to be mentioned, however. In the year directly prior to the ratchet event, ratcheting firms tend to display a puzzlingly lower payout ratio as compared to non-ratcheting firms, as shown by the significantly below zero black point estimate in year $t-1$. This behaviour is unanticipated but is due to windfall profits that push down the ratio. These windfall profits can cause the ratchet event, as a subsequent decrease (normalization) in profits is categorized as a more than 15% loss, while it is the windfall profits that constituted the abnormal event, and not per se the ratchet event as such. In order to correct for this, I add an additional requirement to the baseline definition of the ratchet event, such that ratchet events following windfall profits are not considered as such (see appendix for details about this alternative definition). The results of the same model but with a stricter event definition are shown in Figure 8. For a more detailed interpretation of the differences between the results of the two models I refer to the appendix, but qualitatively, both event definitions have the same outcome. One key difference, however, stands out. The point estimate just prior to the event turns out to be far less negative, which indicates that windfall gains do indeed induce some of the ratchet events.

When splitting the population into regions, it is clear from Figure 9 that in some regions ratchet events have stronger and longer lasting effects than in others. Interestingly, firms in the USA and China seem to experience the strongest effect of ratchet behaviour, which coincides with the generally higher payout ratios observed in those regions. The point estimates in those regions not only are significantly higher than in others, the effect seems more persistent across specifications. In Africa or Other Asia on the other hand, the already much weaker effect dissipates after two to five years depending on the specification. Still, even in those regions where it is weaker or less persistent, ratchet behaviour significantly pushes up the payout ratio for at least a few years. Given that such ratchet behaviour is spread out over time, even these few years of effect can drive the aggregate view of that particular region.

The combination of these results with the observations in Figure 6, where the evolution of the payout ratio is depicted without or before the occurrence of ratchet behaviour, can yield further insights. In all but one region, the payout ratio without ratchet behaviour among firms mature enough to distribute cash to shareholders is perfectly stable or even decreasing over time. There, it is the strength and persistence of ratchet behaviour that will determine whether on aggregate payout ratios display a rising trend over time or not.

In the USA for instance, not only is ratchet behaviour stronger and more persistent than in other regions, the payout ratio also seems to retain a slightly

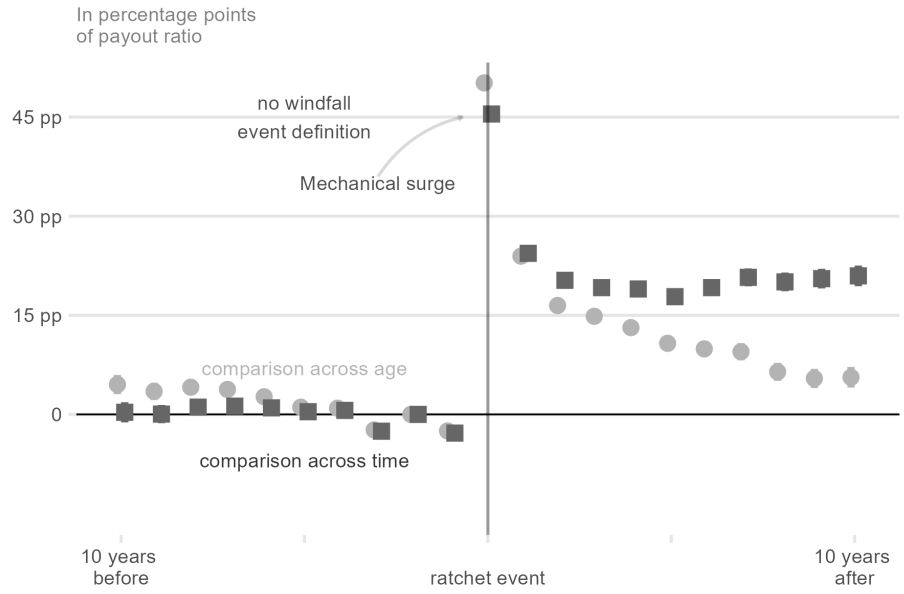

Figure 8: Excluding events induced by prior windfall gains.
Notes : The estimates show the difference between the treatment and the control group, caused by the treatment which is here more narrowly defined. The adjusted R squared for both models - with time based on years versus time based on age - is respectively 36.2% and 37.5%. Each specification includes fixed effects for firm and time (being age or year). The figure also includes 95% confidence intervals.

upward trend when discounting ratchet events (see Figure 6. From this and the fact that share repurchases are - certainly since the financial crisis of 2008 - an almost uniquely US phenomenon, I suggest two ideas with respect to share repurchases. First, that share repurchases are - in contrast to what their proponents say - not at all more flexible than dividends. The US uses far more repurchases and displays even stronger downward rigidity of payouts in the face of falling profits than other regions. Second is that the use of share repurchases in the USA might add another layer of exuberance on top of ratchet behaviour.

This econometric design can thus give us further evidence in favour of our research hypothesis that ratchet behaviour persistently raises the payout ratio of ratcheting firms relative to their non-ratcheting peers. This section has demonstrated that indeed payouts are downward sticky in the face of a fall in profits and that this stickiness reverbates over *a decade* after the ratchet event. Although differences across reions, sectors or firm sizes are important and should be further investigated - along with other firm characteristics - the effect of ratchet behaviour seems to be qualitatively similar across these characteristics.

It is thus clear that one key reason why payout ratios have trended upwards over time is because shareholders refuse downward adjustments of their remuneration in the face of falling profits. This not only nominal but real downward

rigidity of shareholder payouts is the embodiment of shareholder value orientation and the behaviour that drives the payout ratio in the longer run. It is thus not rising payouts that drive the upward trend of the payout ratio but precisely their reticence to fall.

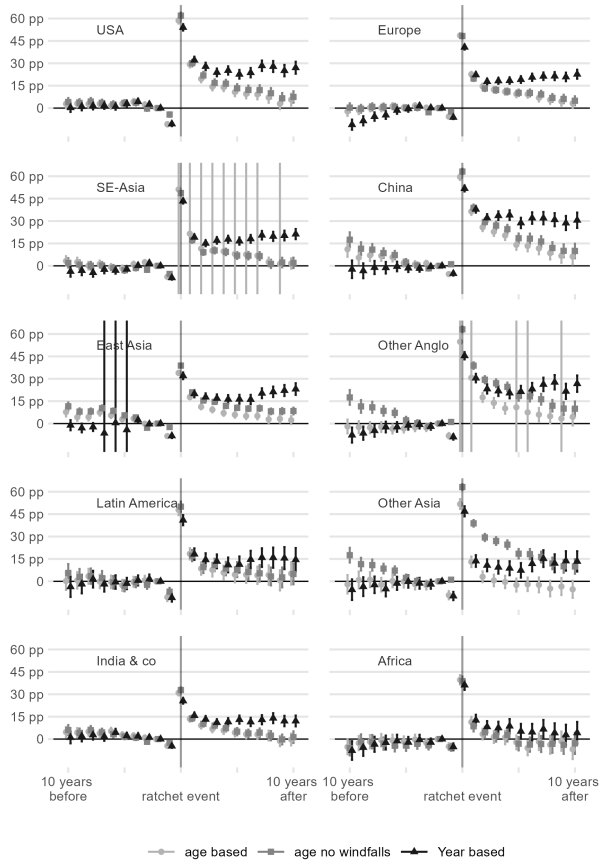

Figure 9: The effect of ratchet events split by region.
Notes : The estimates show the difference between the treatment and the control group, caused by the treatment split by world region. The three specifications described in previous figures are shown. Each specification includes fixed effects for firm and time (being age or year). The figure also includes 95% confidence intervals. In the time as age specification, sample sizes can become quite small in some regions and some age groups, which explains the wider confidence bands.

5 Conclusions and further research

The corporate financialization literature has put forward shareholder value orientation (SVO) - a form of corporate governance placing shareholders' interests above all else's - as the culprit for the growing extraction of firm income by shareholders - rising payout ratios among stock listed firms. However, it failed to connect the institution to the outcome, i.e. how does SVO as a form of corporate governance translate into its consequences? This paper answers this question by uncovering the actual firm behaviour associated with SVO that effectively leads to rising payout ratios. It thus grounds the macro process of financialization into its micro foundations and therefore connects it – theoretically and empirically – to its implied outcomes.

I find that it is not rising payouts that lead to rising payout ratios, but precisely their inability to fall. I show that SVO constrains the firm in its decision space through the downward rigidity of shareholder remunerations during negative shocks, i.e. through ratchet behaviour. Firms seem to be constrained to keep their payouts steady in the face of falling profits such that each negative profit shock is increasingly met with payouts that do not budge. A stochastic model of ratchet behaviour illustrates this point. I show that at the aggregate level, both profits and payout ratios can experience a strong upward trend even though rising profit imply falling payout ratios. The underlying micro-level fluctuations of profits are the fuel and ratchet behaviour is the engine that together generate the upward motion in aggregate payout ratios over time. Rather than declining margins, the intertwinement of fluctuations in profits and downward rigidity in payouts seems to be a necessary and sufficient condition for the advent of what Baines and Hager call *adverse financialization* (2023, p. 13).

Using data on all stock-listed firms in the world, I not only show that this behaviour is very common among stock-listed firms but also that the payout ratio is structured along the lines of the frequency of ratchet behaviour, across firm characteristics such as firm size, sector or region. Moreover, the outcome similarity between a model where ratchet behaviour is known to cause it and reality where it is suspect to do so, strongly suggests that it is indeed the downward rigidity of shareholder remunerations - or sticky payouts - that cause payout ratios to rise over time. This hypothesis is then formally tested using a staggered difference in differences methodology that allows for effect and time heterogeneity. Across different specifications, this methodology shows that instances where profits decline but shareholders do not share in the losses – ratchet events - push up the payout ratio of ratcheting firms vis-à-vis their nonratcheting peers. At the firm level, ratchet behaviour causes the payout ratio to be significantly higher than the nonratcheting counterfactual for close to a decade. The strength and persistence of the effect varies across regions, sectors and frims sizes, but qualitatively, the results are similar across firm characteristics. It is precisely when resources become scarce that shareholder power - or primacy - kicks in.

Uncovering the mechanism through which SVO operates in practice is a key step that has been overlooked by the literature. Not only does it give solid

form to a central concept of heterodox economics and helps understand the toll SVO extracts from firms and economies, it also allows researchers to better investigate its causes and consequences more rigorously. Just as Rabinovich and Reddy (2024) have argued, there is a need for more rigorous empirical substantiation of causal claims. As the central claim of corporate financialization is that the increased redistribution towards shareholders negatively affects other firm stakeholders and the wider economy, the identification of ratchet behaviour as the cause of this redistribution enables a new exploration of these causal pathways. Ratchet events are by definition redistributive and if profits decline and payouts remain stable, something else needs to be cut or indebtedness needs to increase. A higher load of unproductive debt will then induce firms to cut back on investments, R&D expenditures or labour costs. These consequences - for investments, labour, the environment, etc. - of the unwillingness of shareholders to share in the cost of falling profits will be the object of the first stream of follow-up research. Just like the nominal downward rigidity in wages, the real downward rigidity of shareholder payouts likely has real consequences for the economy.

On the other hand, the precise identification of behaviour allows researchers to pinpoint *why* some firms do and others do not exhibit this behaviour. Having identified firm behaviour as SVO in practice, one can empirically establish what firm characteristic, institution or power configuration catalyze financialization by exploiting variations in these across time and space. For instance, shareholder characteristics, manager remuneration practices and contagion effects, all constitute potential drivers of ratchet behaviour whose identification would allow for the critical assessment of some longstanding hypotheses of the financialization literature. Also the role of the fall of labour as countervailing power (Stansbury & Summers, 2020; Stockhammer, 2009) can be better appraised once the exact behaviour of SVO is identified. Exploiting variation across and change within firms with respect to union strength or board representation might clearly emphasize the role of unions as countervailing power, which would not only provide fruitful academic insights but also political ones, in uncovering pathways of potential *definancialization*.

Although this paper raises more questions than it answers, it provides evidence that shareholder value orientation translates into ratchet behaviour, that shareholders exert a rigid and asymmetric influence on firms by demanding moderately increasing payouts when times are good, but refusing to yield ground when times are bad. The downward rigidity of their payout expectations constrains the firm in its decision space precisely in those moments the firm is hit by an adverse shock. Both on the firm level and on the aggregate this ratchet behaviour drives up the payout ratio persistently. This likely has consequences not only for the firm itself, but also for the wider economy, potentially through lower investments, financial instability, increased inequalities, reduced aggregate demand and inhibited future growth potential. Finally, the identification of ratchet behaviour as the prime behavioural expression of SVO helps further our collective understanding of both the causes and consequences of corporate financialization.

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Appendix

February 21, 2025

1 Data and additional figures

1.1 Extraction and selection

Our data consists of all the world's stock-listed firms in the Refinitiv database, from 1985 until 2023. This results - after basic cleaning - in 76.533 companies and 1.076.565 company-year observations. Basic cleaning entails the removal of firms on which Refinitiv has no time varying information, and of observations where the year or revenues variable is missing. The table below gives a regional breakdown of the number of observations and unique firms that will be effectively used definition. Finally, analyses of this paper.

Region	Firms	Observations
USA	15.891	220.094
Europe	13.051	171.424
SE-Asia	7.942	123.283
Other Anglo	10.804	122.994
China	8.327	113.552
East Asia	5.119	104.645
Other Asia	5.975	90.072
India & co	5.764	73.930
Latin America	2.096	33.078
Africa	1.564	23.493
Total	**76.533**	**1.076.565**

Table 1: Regional breakdown of stock-listed firms in the world
Notes : This table gives a regional breakdown of the number of observations and unique firms used in this paper. 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.

As we will attempt to identify events characterized by a specific direction in the year over year change in income and payout variables, all income, cash flow and balance sheet information is extracted in native currency as to not distort time-variance due to ex-post exchange rate fluctuations. Whenever a common unit of measurement is required, all currencies are converted to dollars using the corresponding year's average exchange rate. Moreover, the data consists of

annual entries, counted in fiscal years and not calendar years. As many firms remunerate their shareholders only in the first quarter of the next calendar year, the use of fiscal years allows us to attribute these payments to the actual year they are based on, i.e. the previous one.

1.2 Construction of the payout ratio

We refer to AUTHOR (2024) for a deeper explanation of the data wrangling process, but we want to attract special attention to the way our key variable of interest is constructed.

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 AUTHOR (2024).

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. AUTHOR (2024) shows that this is increasingly prevalent. Moreover, as is the point of this paper, 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 wide swings from year to year, this variability is smoothed out by calculating its forward rolling median (see Figure 1).

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, mostly to accommodate the East Asian case, where payout ratios are generally very low and the 95th percentile never surpasses this minimum threshold, essentially meaning that a cap of 1 is binding throughout the period.

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

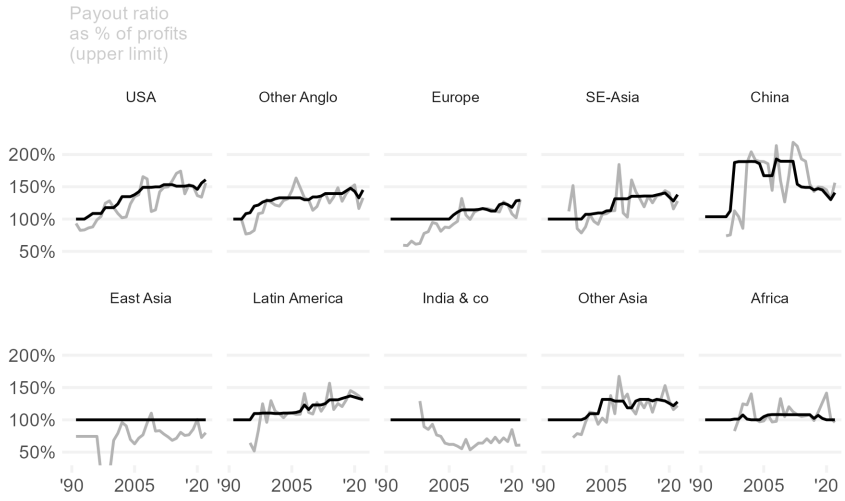

Figure 1: Time varying upper limit of the payout ratio by region
Notes : Each group is only shown from the moment it has at least 50 constituents.

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 AUTHOR (2024) 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 (AUTHOR, 2024), 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 AUTHOR (2024). To illustrate this methodology Figure 2 shows the evolution of payout ratios for each region and each size group. 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.

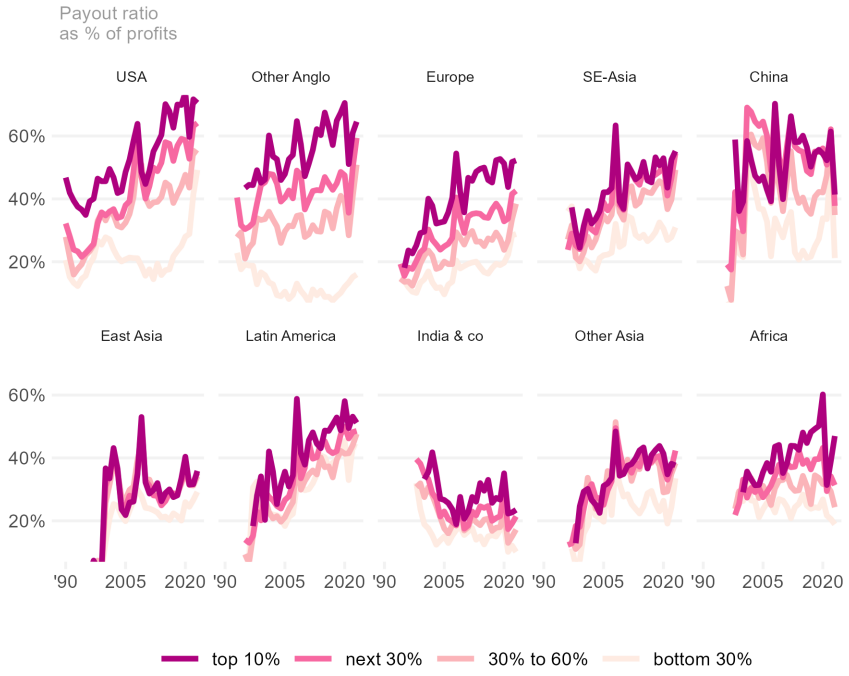

Figure 2: Evolution of payout ratios by region and firm size
Notes : This figure shows an aggregate view of the payout ratio used in this research paper. It corresponds to the unweighted corrected measure described in AUTHOR (2024) and the procedure is described above.

2 Model explanation, illustration and additional figures

The toy model developed here does not claim to replicate real firm fundamentals in any way. The idea is to simulate firms that *are* indeed governed by the logic of ratchet behaviour and see whether the outcomes we obtain resemble in any way to the payout behaviour of actual firms. For the full code I refer to GitHub, but here I briefly explain the toy ratchet model.

2.1 Toy ratchet model

It is a very simple model that stochastically generates data based on two behavioural heuristics: the payout response to changes in profits is asymmetrical: downward rigid when profits decline and fractional upward adjustment when profits increase. What is left of profits after shareholder have been remunerated - retained earnings - serves as a proxy for investments and positively influences the trend growth rate of profits. Profits deviate from trend due to stochas-

tically generated shocks drawn from a normal distribution symmetric around zero. Every firm comes in to existence at some point over the course of the period, meaning that some firms are older than others. When coming into existence, the firm is allocated a random amount of profits (drawn from a normal distribution around a given amount) of which a random fraction is allocated to shareholders (drawn from a normal distribution with mean 0.15 and standard deviation of 0.05, adjusted with a size factor).

From the birth of the company onwards, profits are determined as described by the equation hereunder. Given that profits will be subjected to shocks, the purpose of this equation is to ensure that a shock - positive or negative - remains an outlier and is not fully part of the path of profits. The shock will however have an effect on the trend growth rate g_t as this last one will be determined by the interplay between profits and payouts.

$$\begin{cases} Profit_{t-1} * (1 + g_t) & shock_{t-1} = 0 \\ 0.75 * Max(Profit_{t-1,t-2}) + 0.25 * Min(Profit_{t,t-1}) * (1 + g_t) & shock_{t-1} < 0 \\ 0.75 * Min(Profit_{t-1,t-2}) + 0.25 * Max(Profit_{t,t-1}) * (1 + g_t) & shock_{t-1} > 0 \end{cases}$$

As stated before this yearly determination of profits based on the trend growth rate will be randomly (one chance in two) subjected to a shock symmetric around and averaging zero and in proportion to previous values of the firm's profits. Although shocks are frequent, the zero mean ensures that most of them are simple noise around the trend growth rate. The standard deviation is the key variable of interest here, set at 0.5. The higher that standard deviation is, the stronger the fluctuation of profits - both positive and negative - the stronger the influence of ratchet behaviour in our model and the higher the payout ratio will tend to be, even though on aggregate these fluctuations cancel out due to their symmetry around zero. It is the micro-level fluctuation that will cause the firm to ratchet, the payout ratio to jump persistently, which then on aggregate translates into smoothly rising payout ratios over time. Figure 3 shows the aggregate evolution of profits and payout ratios versus that of a single firm. As a side note, whenever a firm experiences two periods of negative profits - due to bad luck or lackluster growth - the firm dies.

Payouts respond asymmetrically to changes in profits, staying steady when profits fall, increasing fractionally when profits rise. In practice, the fractional adjustments amounts to 10% of the increase in profits, such that if profits increase by 10 units, payouts increase by - on average - 1 unit. This ensures that almost every rise in the payout ratio is attributable to falling profits and not rising ones. These are the key beavioural heuristics that introduce ratchet behaviour in our model. These heuristics are however not completely rigid. When a firm is in dire straits - for example when it experiences a falling trend in profits due to bad luck or endogenously falling trend growth rates, it can adjust its payouts downwards in order to free up cash for investments and therefore kickstart its growth trajectory. This ensures firms can recover when in a lethargic

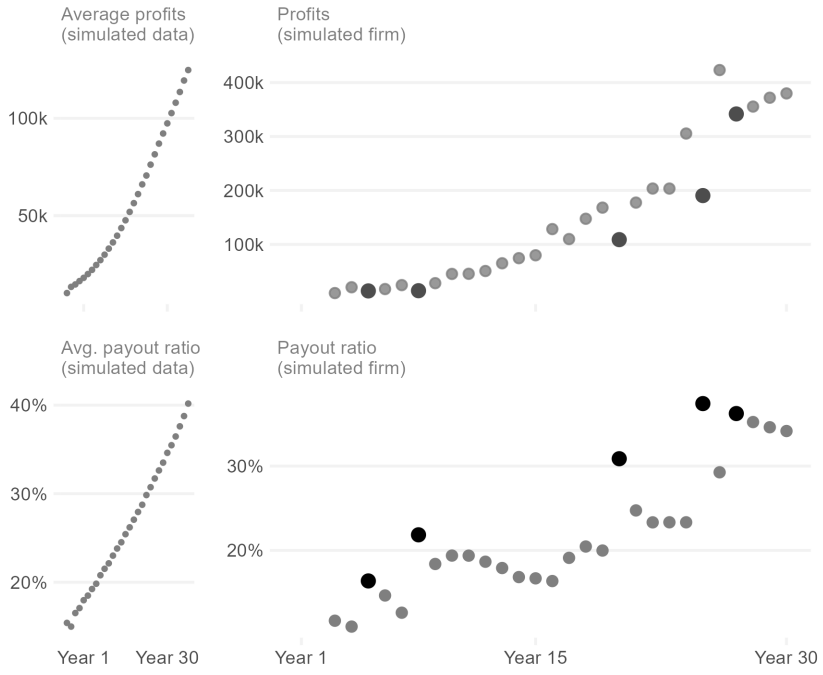

Figure 3: Simulated aggregate data and individual firm
Notes : This figure shows the evolution of profits and payout ratios of firms created by te toy model. On the one hand the aggregate view, averaging across all 50.000 simulated firms, and on the other one of those firms, with in black occurrences of ratchet behaviour.

state by deciding payouts need to be cut in order to invest.

Finally, the interplay between profits and payouts determines the trend growth rate in a very simple way. Retained earnings of the last three years (with decreasing weight) are invested and these investments generate growth at a rate slightly decreasing with the age of firms, to reflect the lower capacity to expand of old firms. This endogenously determined yearly trend growth rate averages 15% per annum over the full population of firm-time observations.

2.2 Simulation recreates patterns in data

When recreating the figure 5 using simulated data - as in Figure 4, we get a strikingly similar picture. The fact that *we know* it is ratchet behaviour that drives the payout ratio in the simulated data suggests the same could be true for the real data. At least, while theory and Figure 4 indicate that ratchet behaviour *can* be the culprit for rising payout ratios, and Figure 5 in the main text suggests the possibility of this being true in reality, the juxtaposition of simulation and real data really amplifies the likelihood that SVO indeed

manifests as the unwillingness of shareholders to yield ground during bad times, as the reluctance of shareholders to partake in the costs of falling profits, as ratchet behaviour.

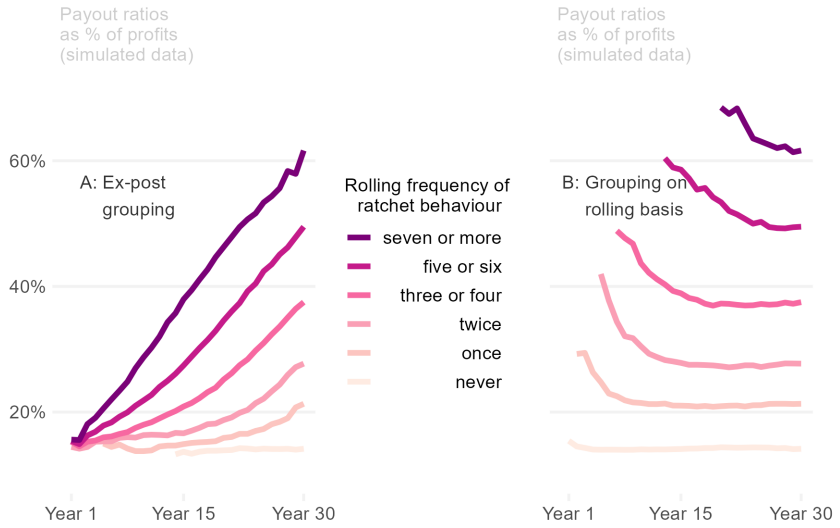

Figure 4: Recreating reality with a simulation based on stochastic ratchet behaviour

Notes : This figure recreates Figure 5 using data on 50.000 simulated firms governed by stochastic ratchet behaviour (the model is explained in the Appendix). Despite a strong and smooth aggregate rise of profits (see additional figures in he Appendix) and notwithstanding that payout ratios rise almost exclusively when profits fall, aggregate payout ratios rise strongly and stratify along the lines of the frequency of ratchet behaviour. This shows that using a simulation of firms behaving along the lines of this paper's hypothesized, one obtains results very similar to figures based on actual data.

2.3 Stratification pattern along frequency of ratchet behaviour

Thanks to the application of the procedure described in Section 1.2 above, depicted payout ratios are never dominated by a handful of giant companies, nor by false negatives or positive outliers. This ensures that the patterns we uncover through figures throughout this paper actually reflect the behaviour of the average stock-listed firm in the non-mathematical sens of the word. Figure 5 for example shows that the stratification of the payout ratio based on the frequency of ratchet behaviour is not a gimmick driven by a few companies, but that this pattern resurfaces within all firm size groups. Moreover, the pattern appears just as strong when the firms are split in groups of regions or sectors. From this it should be clear that it is indeed the frequency of ratchet behaviour

that drives the payout ratio and not some other type of firm characteristic. This does not mean that ratchet behaviour happens as frequently in every type of firm characteristic - such as region, size or sector - but that the stratification along the lines of those firms that do or do not ratchet is similar across all groups.

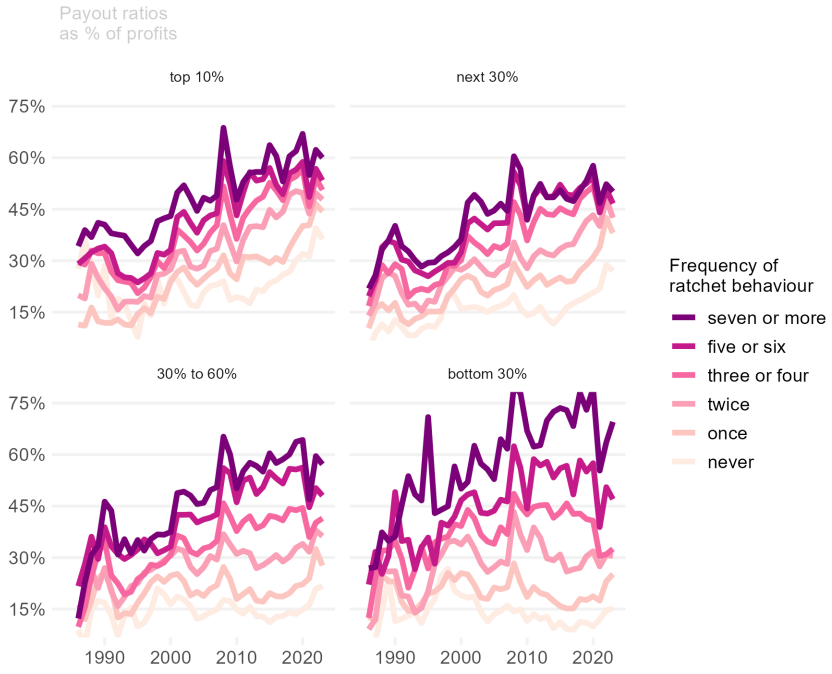

Figure 5: Frequency of ratchet behaviour and payout ratios by size
Notes : The same stratification emerges when splitting groups by size, region or sector. Furthermore the same applies to the rolling variant of this figure (panel B of Figure 3)

Note that ratchet events are only counted from 1990 onwards, which can explain why the "seven or more" category starts off with a higher level, as they might have undergone ratchet events in years prior to 1990.

Figures 6, 7 and 8 further show that the stratification pattern emerges irrespective of firm characteristics such as, respectively, size, region and sector. This does not mean that these characteristics do not matter, but it suggests that *within each characteristic* it is the frequency of ratchet behaviour that matters.

3 Defining ratchet events

3.1 Baseline event definition

As we want the ratchet event to reflect the conscious and discrete decision by the firm to keep payouts steady in the face of a significantly negative evolution

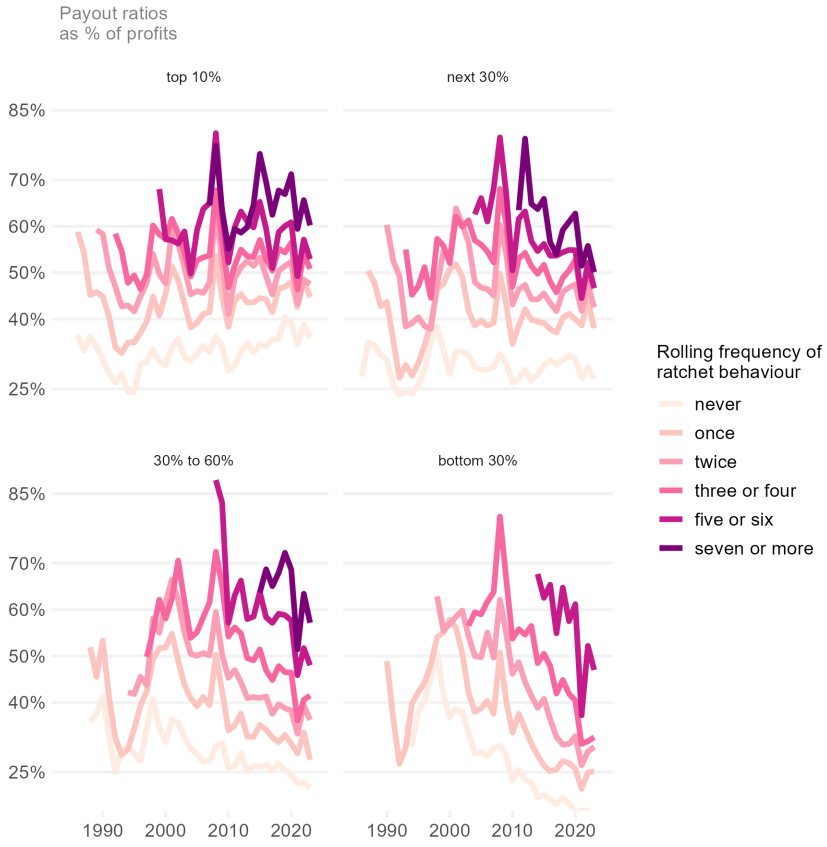

Figure 6: Size, rolling ratchet behaviour and the stratification of the payout ratio.

Notes : The same stratification emerges when splitting groups by size, region or sector. Here the rolling variant is depicted (panel B of Figure 5).

of profits, we cannot consider any year on year decrease of profits together with steady payouts as a ratchet event. First and foremost, and trivially, payouts should be nonzero in the year of the event and should be non decreasing with respect to the previous year. Profits must be in year on year decline, but I additionally introduce an arbitrary threshold of 15% decline in profits with respect to a lagged three year rolling average in order to move beyond profit glitches in an otherwise steady evolution of profits. The choice of 15% is arbitrary, but it nicely splits the sample in comparable treated ad untreated observations. Robustness checks with a different threshold (10% and 20%) yield very similar results. Finally, firms must be mature enough to already have started remunerating shareholders at some point in the past and be at least 5 years old in order to have a sufficient pre-event window.

Figure 7: Region, rolling ratchet behaviour and the stratification of the payout ratio.
Notes : The same stratification emerges when splitting groups by size, region or sector. Here the rolling variant is depicted (panel B of Figure 5).

3.2 no windfalls event definition

As explained in the main text, we wanted to capture the discrete behaviour of firms under financial distress. Our measure of financial distress intends to capture an at least 15% drop of profits with respect to a three year average. However, such a decrease in profits could happen following a windfall gain, such that the negative shock we measure might simply correspond to a return to trend. Under those circumstances it is expected that the firm does not adjust its payouts downwards and that this does not constitute a ratchet event. To exclude these false negative shocks due to windfall gains in the previous year, we simply require that the previous year's profits do not constitute over half of the three year average of profits.

Although applying this correction for ratchet events induced by windfall gains reduces the total number of events by 30%, this event definition still results in 25.385 firms in the treated group - firms that at one point in time undergo the event - and 27.054 firms in the never treated group - firms that do have payouts but never ratchet. In total, counting only firms that already have

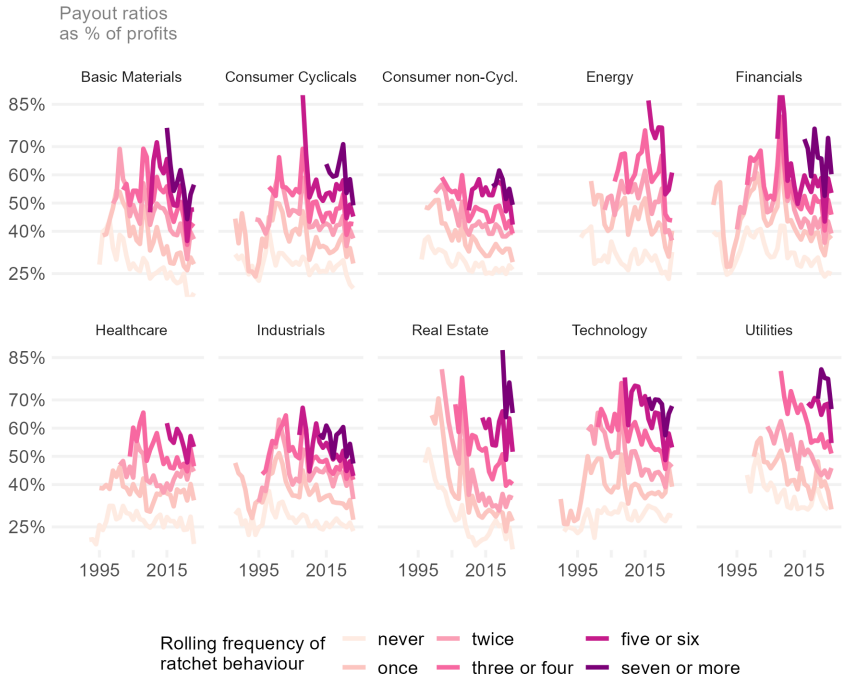

Figure 8: Sector, rolling ratchet behaviour and the stratification of the payout ratio.
Notes : The same stratification emerges when splitting groups by size, region or sector. Here the rolling variant is depicted (panel B of Figure 5).

started remunerating their shareholders, there are 457.843 observations that are never treated or not yet treated and 261.715 observations that have already been treated. So we are left with a still quite sizeable group when applying this more strict event definition.

3.3 Parallel Trends among subcategories

Figures 9, 10 and 11 display the outcome variable of both the never treated - the control group - and the firms in the treatment group *that are not yet treated* at a lower level of aggregation, respectively subdivided in groups based on regions, firm sizes and sectors. This constituted a more robust test of the PT assumption than is strictly required or usual. But except for one, in all these subdivisions, the PT assumption seems to be holding quite nicely.

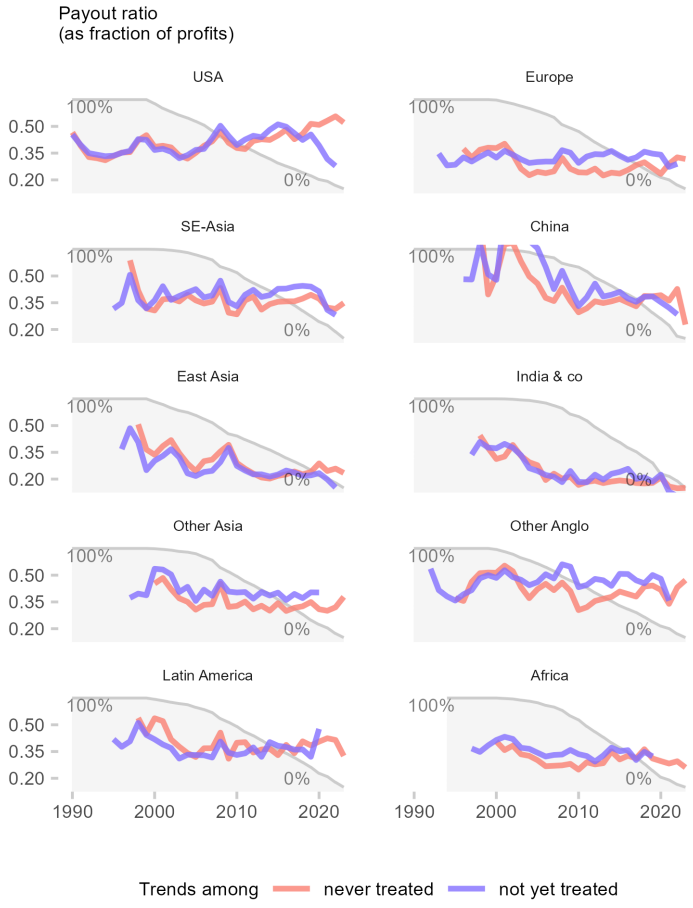

Figure 9: Parallel trends in payout ratios - by region.
Notes : The co-movement of the payout ratio in the control group with that of the treatment group before being subjected to the treatment suggests that the PT assumption holds. Only firms mature enough to have started paying out cash to shareholders are considered. As group sizes can become quit small in the early nineties (or by the end of the period in the case of the not yet treated, by definition), the figure only displays lines whenever there are at least 50 group constituents. This figures excludes all firms from the moment they undergo a ratchet event. Trivially, if it did not do so, the divergence between treatment and control group would widen over time.

The evolution of the never treated and the not yet treated seems to be very similar in all ten different world regions. At least there is no region where the PT assumption seems particularly far fetched. Note how only the USA retains an upward trend in payout ratios when removing the influence of ratchet events. Bear in mind however, that ratchet event are only considered as such if the decline in profits is sizeable enough.

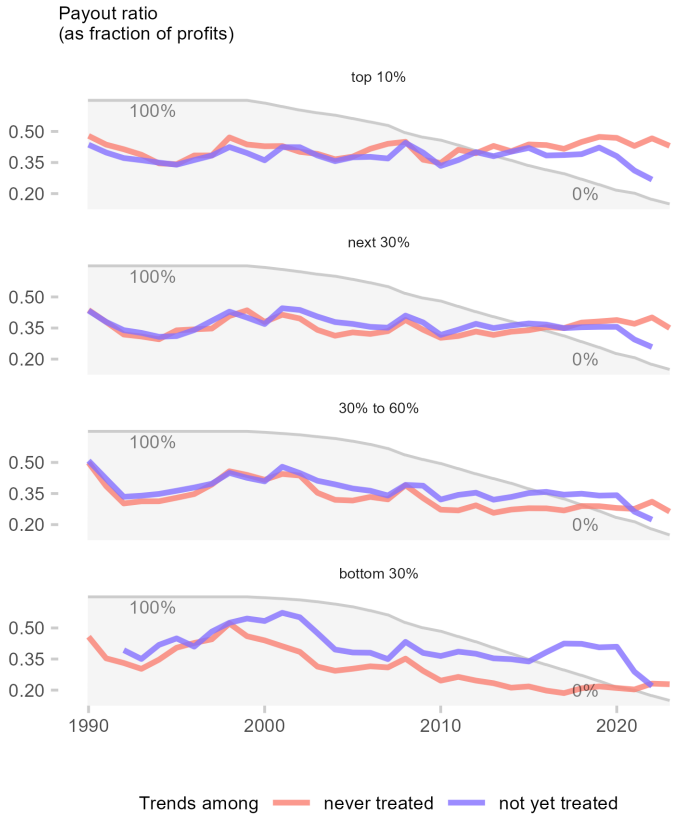

Figure 10: Parallel trends in payout ratios - by size.
Notes : The co-movement of the payout ratio in the control group with that of the treatment group before being subjected to the treatment suggests that the PT assumption holds, except for the smallest firms. Only firms mature enough to have started paying out cash to shareholders are considered. As group sizes can become quit small in the early nineties (or by the end of the period in the case of the not yet treated, by definition), the figure only displays lines whenever there are at least 50 group constituents. This figures excludes all firms from the moment they undergo a ratchet event. Trivially, if it did not do so, the divergence between treatment and control group would widen over time.

As stated in the main text, the category of the smallest firms is likely problematic as the PT assumption here seems a bit of a stretch. Across all other size groups, the PT assumption seems to be holding.

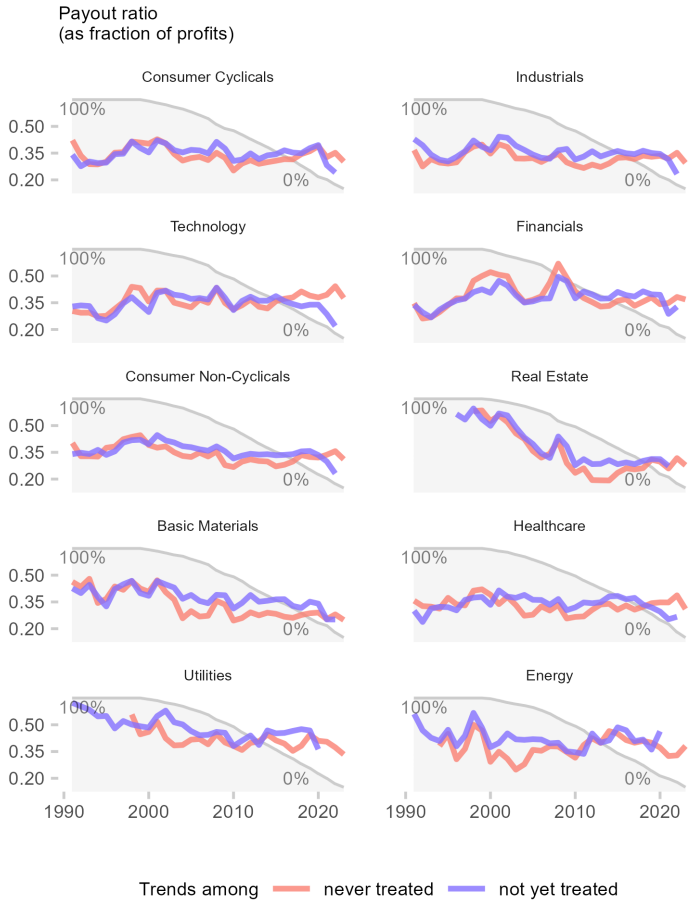

Figure 11: Parallel trends in payout ratios - by sector.
Notes : The co-movement of the payout ratio in the control group with that of the treatment group before being subjected to the treatment suggests that the PT assumption holds. Only firms mature enough to have started paying out cash to shareholders are considered. As group sizes can become quit small in the early nineties (or by the end of the period in the case of the not yet treated, by definition), the figure only displays lines whenever there are at least 50 group constituents. This figures excludes all firms from the moment they undergo a ratchet event. Trivially, if it did not do so, the divergence between treatment and control group would widen over time.

A sectoral decomposition does not yield serious problems either. Only among Utility and Energy companies does the PT assumption show cracks during a couple years in the early 2000s, in my opinion however, not enough to warrant their removal.

4 Econometrics & alternative specifications

4.1 Staggered DID split by firm size

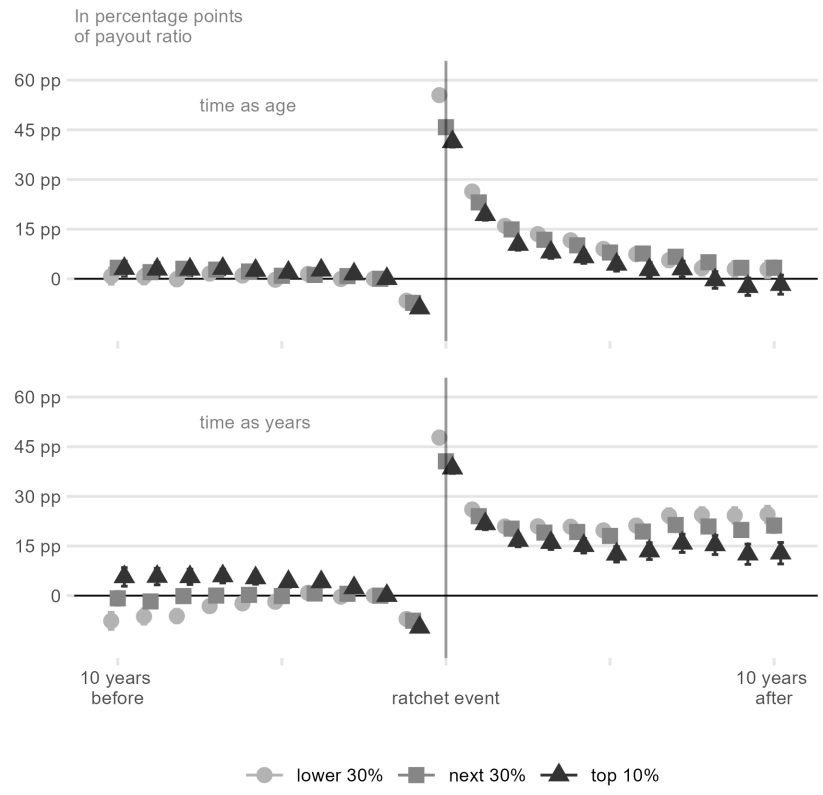

Figure 12: Effect persists across firm size groups.
Notes : Note that the absolute smallest (in terms of revenues) companies of the world already had been removed from the sample due to doubts about the PT assumption. Moreover, the number of firms within this group that already started remunerating its shareholders is quite small and therefore less useful to our econometric design. The "lower 30%" in this figure thus represents the group of firms in between the 30th and 60th percentiles of the world.

4.2 results from the baseline versus no-windfall event definition

First, as opposed to our baseline definition, the estimate for the year prior to the event - year $t-1$ - looses its statistical significance, indicating that indeed the pre-event slight dip in the payout ratio is attributable to windfall profits in

year $t-1$ that are categorized as ratchet events in year t when profits return to pre-windfall levels. A windfall profit gain in year $t-1$ almost by definition implies a lower payout ratio due to the increase in the denominator and the fact that exuberance - as shown in Figure 1 in the main document - is not common.

Second, and most interestingly, this stricter definition that excludes windfall induced ratchet events leads to a slightly higher persistence in the longer run. This likely is attributable of the dynamic consequences of ratchet behaviour explored in ensuing work. As these firms cannot draw on the buffers created by pre-event windfall gains, the negative consequences down the road - higher indebtedness and lower investments - are likely more pronounced. And as these consequences dampen future profit making abilities, the persistence of the effect on payout ratios is enhanced.

4.3 Alternative estimator - Callaway and Sant'anna and allowing for anticipation

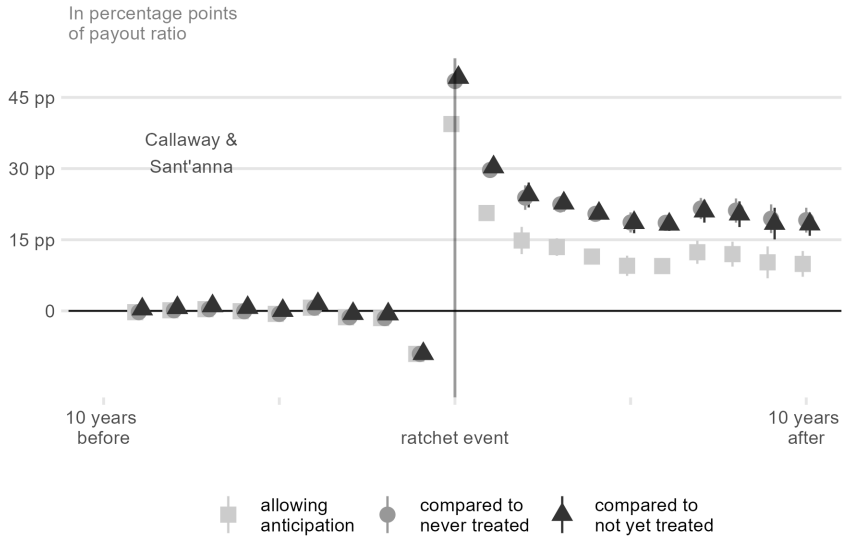

Figure 13: Callaway & Sant'anna estimator yields similar results, even when allowing for anticipation.
Notes : The Callaway & Sant'anna estimator can construct the control group from the never treated only, or from both the never treated and the not yet treated. Both models include year and unit fixed effects. Results barely change between these two specifications. Their estimation strategy also allows for anticipation of the treatment. Firms can thus anticipate in year $t-1$ that they will ratchet in year t, and thus both that they will make losses and that they will keep payouts steady despite those loses. Qualitatively, the results do not change, although the strength of the effect is diminished.

The Callaway & Sant'anna (2021) estimator can construct the control group from the never treated only, or from both the never treated and the not yet

treated. Both models include year and unit fixed effects and are shown in Figure 13. Results barely change between these two specifications, indicating robustness across control groups.

Moreover, their estimation strategy also allows for anticipation of the treatment. Firms can thus anticipate in year $t-1$ that they will ratchet in year t, and thus both that they will make losses and that they will keep payouts steady despite those loses. Qualitatively, the results do not change, although the strength of the effect is somewhat diminished.

5 References

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