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Citation: Baines, J. & Hager, S. B. (2021). The Great Debt Divergence and its Implications for the Covid-19 Crisis: Mapping Corporate Leverage as Power. *New Political Economy*, 26(5), pp. 885-901. doi: 10.1080/13563467.2020.1865900

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Link to published version: <https://doi.org/10.1080/13563467.2020.1865900>

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The Great Debt Divergence and its Implications for the Covid-19 Crisis: Mapping Corporate Leverage as Power

Joseph Baines

Department of European and International Studies, King's College London, London, United Kingdom

Sandy Brian Hager

*Department of International Politics, City, University of London, London, United Kingdom,
Sandy.Hager@city.ac.uk*

This is a pre-preprint of an article accepted for publication in *New Political Economy*
<https://doi.org/10.1080/13563467.2020.1865900>

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ABSTRACT

The COVID-19 pandemic has amplified longstanding concerns about mounting levels of corporate debt in the United States. This article places the current conjuncture in its historical context, analysing corporate indebtedness against the backdrop of increasing corporate concentration. Theorising leverage as a form of power, we find that the leverage of large non-financial firms increased in recent decades, while their debt servicing burdens decreased. At the same time, smaller firms experienced sharp deleveraging alongside increasing debt servicing costs. Crucially, smaller corporations also registered severe losses over this period, while large corporations remained profitable, and in fact doubled their net profit margins from the early-1990s to the present. Taken together, the results from our mapping exercise uncover a series of dramatic changes in the financial fortunes of large versus smaller firms in recent decades, a phenomenon we refer to as the *great debt divergence*. We explain this divergence with reference to the dynamics of power in the era of ‘shareholder capitalism,’ and we argue that the US political economy in the post-COVID 19 world is likely to resemble the pre-COVID 19 one, only with more market turmoil, more concentration, more inequality, and even less investment.

Keywords: corporate debt; leverage; concentration; power; shareholder value; COVID-19 crisis

I am the king of debt. I do love debt. I love debt. I love playing with it.
(Donald Trump as cited in Harrison 2016, p. A5).

Introduction

Long before the COVID-19 virus shook the world, concerns had been rising across the major economies over mounting corporate debt (Banerjee and Hoffman 2018, Çelik *et al.* 2019, IMF 2019, Lund *et al.* 2018). In the United States, observers were particularly concerned about the non-financial corporate sector, which saw its debt burden more than double from \$3.2 trillion in 2007 to \$6.6 trillion in 2019 (Federal Reserve 2020). Some claimed that corporate debt was a giant bubble eerily similar to the subprime mortgage market in 2007-8 (Cohan 2018, Wigglesworth 2019). In this increasingly perilous situation, they warned, a sudden shock was all that was needed to pop the bubble, setting off a wave of corporate defaults which would put the global financial system at risk of another meltdown.

That sudden shock has now come in the form of a global pandemic. The relentless spread of COVID-19 has left the global economy teetering on the brink of collapse. In an effort to contain the cataclysmic effects of the pandemic, the US federal government has implemented historically unprecedented stimulus measures (Cochrane and Fandos 2020). Meanwhile the Federal Reserve, in a move that would have been unthinkable to many in the pre-Covid world,

has announced its intentions to purchase billions of dollars-worth of corporate bonds, from investment grade to junk, in order to prevent the seizing up of credit markets (Smialek 2020).

The current situation is fluid and uncertain, making even short-term projections about the consequences of the pandemic tenuous at best. In this article, we take a step back from the immediate tumult and situate the current conjuncture within its historical context. In particular, we examine the massive build up in debt against the backdrop of what we consider to be one of the most fundamental transformations of the US political economy in recent decades: increasing corporate concentration (see Hager and Baines 2020). With the largest corporations taking in greater shares of assets, revenues, and profits, we think it is worthwhile to map the disaggregate pattern of corporate indebtedness for firms of different sizes. Put simply, how do the debt burdens of large corporations compare to their smaller counterparts? Do large corporations use debt financing to magnify their clout? Or is borrowing a sign of weakness, a recourse for smaller firms trying to compensate for the competitive disadvantages associated with their diminutive size?

Though existing theoretical approaches timelessly equate debt with either strength or weakness, our aim is to develop a framework that can account for changes in the relationship between debt and power over time. To the extent that leverage boosts profitability, we claim that it also augments the power of the borrower. As a distinct form of power, leverage is about binding the fate of others to the borrower's success, but more importantly it is about moving markets, 'gearing' them toward the borrower's expectations, in ways that defy neoclassical economic expectations regarding the role of corporate debt in a system animated by competition between atomistic firms (Sgambati 2019, p. 292). Our empirical exploration of the power underpinnings of leverage builds on the capital-as-power approach propounded by Jonathan Nitzan and Shimshon Bichler (2009). Specifically, we use one of Nitzan and Bichler's quantitative proxies for the concentration of power, which draws on Michał Kalecki's (1938) work on the 'degree of monopoly.' As a measure of net profit margins (i.e. net profit to sales), fluctuations in the degree of monopoly register changes in power over time. Thus, we expect leverage, as a form of power, to increase in step with profit margins. It is important to stress that power in this approach is inherently relative. Our key prediction is that firms able to increase their leverage at relatively low borrowing costs simultaneously increase their power, as registered by their degree of monopoly.

In mapping the indebtedness of listed non-financial corporations disaggregated by size, our analysis yields some stunning results. What we find is that the leverage ratios, interest expenses, and effective interest rates of three categories of firms (large, medium-sized, small) increased steadily in the post-World War II period through the 1970s. Yet in recent decades, the financial structures of firms have moved in radically different directions. The leverage ratios of large and medium-sized firms increased from the mid-1980s to the present, while smaller firms have experienced sharp deleveraging over roughly the same period. Our analysis also shows that increasing leverage for large firms has been accompanied by decreasing debt servicing burdens, while decreasing leverage for smaller firms has gone hand in hand with increasing debt servicing burdens. Crucially, we find that during the postwar period, there was little to

distinguish firms of different sizes in terms of their net profit margins. But a dramatic change ensues around 1980, as smaller corporations begin to register severe losses, while large corporations remain profitable, and in fact, double their net profit margins from the mid-1980s to the present. In relative terms, our analysis indicates a rapid concentration of power in favour of large firms. Taken together, the results from our mapping exercise uncover what we refer to as the *great debt divergence*, a series of dramatic changes in the financial fortunes of large versus smaller corporations in recent decades.

How do we explain the debt divergence? We argue that any answer to this question must be attentive to the dynamics of power and concentration as they have unfolded in the era of ‘shareholder capitalism’ (Davis 2013, Krippner 2011). One of the hallmarks of the current era has been the rise of ‘shareholder primacy’ or ‘shareholder value maximization,’ which entails a shift in corporate governance away from retaining and reinvesting earnings to downsizing and distributing earnings (Lazonick and O’Sullivan 2000). Our research indicates that all firms regardless of their size are subject to pressures from financial markets to distribute earnings to shareholders in the form of dividend payments and stock buybacks. But because of concentration and oligopolistic market structures, small firms must constantly expand their productive capacity in order to compete with larger firms, while large firms can use their existing advantages to avoid such investment commitments and have indeed increasingly outsourced operations that do not fall within their core competencies. In short, there has been a tendency for large corporations to downsize and distribute and for smaller corporations to distribute but not to downsize. This dual imperative to satisfy shareholders and maintain investment has pushed firms in the bottom half of the US corporate hierarchy into acute financial vulnerability, as reflected in their rising interest expenses and consistently negative profit margins. The concentration of profits at the top of the corporate hierarchy and the growing financial distress of firms at the bottom are therefore two dimensions of the same transformation of power.

The rest of the article is organized as follows. In the first section, we review existing disaggregate approaches to corporate indebtedness. In the second section, we outline our own approach based on the notion of leverage as power. We then present evidence for the great debt divergence in the third section, mapping the long-term pattern of leverage ratios, interest expenses, interest rates, and net profit margins, for large, medium-sized and small firms. Our discussion in the fourth section relates the debt divergence to the dynamics of concentration in the era of shareholder capitalism. In the concluding section we consider the implications of our findings in light of the COVID-19 crisis.

Disaggregating Corporate Debt: A Review

Before presenting our own theoretical and empirical analysis, we start with a brief review of the existing literature on the disaggregate dynamics of corporate indebtedness. Some of the earliest thinking on this topic can be traced back to the turn of the twentieth century. At that time, although developing distinctive approaches in different geographical contexts, Rudolf Hilferding (1910) and Thorstein Veblen (1904, 1905, 1923) came to more or less the same

conclusion: namely, that credit intensifies concentration by conferring a differential advantage on those firms that could access it. For Hilferding, the main advantage of credit is that it enables firms to expand productive capacity, lower prices, and increase their profit shares. For Veblen, firms do not borrow to expand productive capacity but to shorten turnover time and sell their products ahead of competitors (see also Forges Davanzati and Pacella 2014, p. 1057). Hilferding and Veblen both argued that firms with the ability to borrow grow larger and gain market shares, while smaller firms without access to credit are driven out through acquisition or bankruptcy. Eventually, this competitive struggle culminates in the formation of monopolistic market structures. In key sectors, a few giant firms coordinate and collude with each other and with their creditors, curtailing investment, engaging in monopoly pricing and securing high profits.

Hilferding and Veblen did not have at their disposal reliable data that would allow them to empirically substantiate their arguments about the role of corporate borrowing in fuelling concentration. But a couple of decades later Josef Steindl (1945, 1952) would add crucial insights by making use of newly available firm-level data. Critiquing the Marshallian theory of the firm from a Monopoly Capital perspective, Steindl maintained that small firms are at a competitive disadvantage in a capitalist system based on large-scale production. To stay afloat in these inhospitable conditions, small firms are forced to access credit, but precisely because of lower and more volatile profits, the borrowing costs of small firms are considerably higher than for large firms. Small firms are therefore faced with an impossible dilemma. They try to overcome the technical disadvantages of small size with debt, yet those same technical disadvantages make borrowing costly, as small firms ‘...are driven to supplement their own capital by extensive short term borrowing at unfavourable terms’ (Steindl 1945, p. 21). At the same time, due to their monopoly positions, large firms enjoy high and stable profit margins, allowing them to avoid borrowing (Steindl 1952, p. xv, Karwowski 2014, p. 93). Thus, in contrast to Hilferding and Veblen, Steindl maintained that borrowing is a desperate recourse for small firms, rather than a tool that facilitates the market dominance of large firms. To support these arguments, Steindl cites snapshots of data from the 1930s. With these data, Steindl was able to establish that assets and profits are concentrated in favour of large firms, while loss-making and mortality rates are much higher for small firms. Most importantly, Steindl also shows that the leverage or ‘gearing’ ratio (assets-to-equity) decreases with firm size, and that borrowing costs decrease with the total amount of debt being issued.

The next significant breakthrough in research on disaggregate dynamics of corporate debt came from an unlikely source: the mainstream corporate finance literature. In the 1970s what became known as the ‘business risk hypothesis’ emerged as an addendum to the famous theorem of Franco Modigliani and Merton Miller (1958). In their original formulation, Modigliani and Miller (1958, p. 268) proposed that the market value of a firm is independent of its capital structure, or its precise mix of debt and equity. This suggests that it is impossible for firms to use debt financing as a way of bolstering their market value. So long as we assume Marshallian (i.e. perfect) competition and efficient financial markets, the price mechanism, operating through investor arbitrage, will always eliminate any temporary advantage derived from the use of leverage (see also Baskin and Miranti Jr. 1997, p. 16, Pollin 1986, p. 210). Put simply,

when atomistic firms increase their leverage (i.e. their debt relative to equity), the price of shares is expected to fall relative to bonds, investors will then switch to buying equities, bringing debt back into line with equity.

Proponents of the business risk hypothesis argued that the market power of large firms invalidates the restrictive assumptions of the Modigliani-Miller theorem (Gale 1972, Hurdle 1974).¹ According to the hypothesis, large firms have higher and less volatile profits and therefore lower risk in terms of the business environment in which they operate (Bowring 1990, pp. 140-1). Lower business risk enables large firms to take on more financial risk in the form of leverage. In contrast, small firms face lower and more volatile profits and therefore must compensate for increased business risk with lower levels of financially risky leverage. Once market power enters the picture, Modigliani and Miller's assertions about the unimportance of leverage are called into question. Yet as Bowring (*Ibid.*, p. 140) documents, empirical evidence relating to the business risk hypothesis is ambiguous (see also Showalter 1999, p. 232). Using regression analysis, some studies have found a positive association between market power and leverage (Bowring 1990; Gale 1972), others a negative association (Hurdle 1974, Sullivan 1974), and still others no association at all (Melicher *et al.* 1976).²

The work of Hyman Minsky (1982, 1986) represents another advance in thinking about corporate indebtedness. In his 'financial instability hypothesis' (FIH), Minsky emphasized the importance of the financing decisions of the non-financial corporate sector to explain fluctuations in the business cycle (Pedrosa 2019, p. 1501). Countering neoclassical dogma, Minsky (1982, p. 19) famously asserted that '...instability results from the normal functioning of a capitalist economy,' and followed Keynes in emphasizing the role of investor expectations in driving this de-stabilizing tendency (Pollin 1986, p. 217). For non-financial corporations, an upswing in the business cycle brings sustained profits, which fuel optimism regarding future profits and, in turn, lead to a debt-financed investment boom. At the height of the investment frenzy, more firms resort to Ponzi financing regimes as their cash inflows are not sufficient to cover interest payments or principal.³ The build-up of risk in the financial system eventually reaches a limit, Ponzi firms are forced into default, precipitating a debt-deflationary crisis.

Despite the growing popularity of Minsky's ideas since the global financial crisis, there have been only a few firm-level empirical studies that have explored the validity of the FIH. A recent study by Leila Davis *et al.* (2019) employs Minsky's tripartite classification of financing regimes (hedge, speculative, and Ponzi) to assess the evolution of financial fragility within the US non-financial corporate sector. They find that the share of firms classified as Ponzi has been increasing since the 1970s and that the incidence of Ponzi financing regimes is concentrated among smaller firms (see also Davis 2016, 2018). Another exception to the paucity of empirical research on the FIH is a study by Ítalo Pedrosa (2019), which also focuses on the US non-financial sector. Like Davis *et al.*, Pedrosa finds that the incidence of Ponzi finance is concentrated among small firms. Crucially, Pedrosa also reports that small firms have been deleveraging even as their debt servicing costs increase, and that large firms have been increasing their leverage and decreasing their debt servicing costs.

These studies put Minsky's tripartite classification of financing regimes to effective use, but as the authors acknowledge, their main findings in fact run counter to the predictions of the FIH. Davis *et al.* (2019, p. 558) note that increasing financial fragility since the 1970s (as proxied by the increasing prevalence of Ponzi finance) has been accompanied, in the aggregate, by a *slowdown of investment*, not an investment boom as the FIH predicts. Pedrosa (2019, p. 1520) points out that while the FIH assumes that increasing leverage will lead to a deterioration of financing regimes, his own analysis shows that in the case of large firms the opposite is true. Put simply, Minsky's FIH cannot account for the disaggregate findings of these studies. This should not surprise us. In modelling financial stability on the assumption of the 'representative firm,' the FIH assumes away any differences between firms, including differences in their size (Pedrosa 2019, Toporowski 2008, 2012).

To recap, the existing literature presents us with two different views. On the one hand, Steindl drew on data from the 1930s to argue that small firms resort to credit as a way of compensating for their competitive disadvantages. On the other hand, Hilferding and Veblen, as well as proponents of the business risk hypothesis, claim that debt is used by large firms to assert their dominance, a view that aligns with the findings of recent studies that employ Minsky's tripartite classification of financing regimes. The tension arises from conflicting conceptions of the relationship between debt and profit. For those that see debt as weakness, high and stable profits allow large firms to shield themselves from the risks of leverage, while for those that see debt as strength, high and stable profits allow large firms to neutralize certain risks to enable debt financing. What is lacking in existing theorizations is a clear specification of the conditions under which these assumptions hold, and crucially, whether these conditions might change over time. Existing theories timelessly equate debt with either weakness or strength without considering whether the relationship between debt and power might itself be subject to transformation. Before presenting our disaggregate mapping of corporate debt, we clarify these issues by developing our own understanding of the linkages between debt, leverage, profit, and power.

Debt as Leverage, Leverage as Power

In developing our own conceptual framework, we begin by defining some key terms, starting with debt and leverage. Though these two terms are often used interchangeably, it is worth considering whether it is possible to differentiate them. In a critical evaluation of theories of banking, Stefano Sgambati (2019) offers some general criteria for distinguishing debt from leverage. According to his schema, debt is borrowing for the payment of expenditures and the settling of obligations, while leverage is borrowing to invest in assets with the aim of making profits in the future. These definitions have intuitive appeal and can be illustrated with simple examples. A person who owns nothing but the ability to work and uses credit cards to make ends meet is, by these criteria, indebted. But a person who borrows to buy several residential properties, live off the rental income and 'flip' the properties for a higher price in the future, is engaged in leveraging. Just a small step is required to link this conceptual distinction to power: debt is a burden and therefore a weakness, while leverage empowers the borrower, in Sgambati's (2019, p. 292) words, '...to gear the market towards meeting our expectations.'

Returning to our previous example, leverage may allow the investor to corner the market in residential property so that they can raise rents, sell the property at inflated prices, and bolster their negotiating position with creditors in the event of a market downturn.

In this framework, debt is distinguished from leverage based on the intent of the borrower. The credit card debtor borrows with the clear intention of making a payment and the property tycoon of making a profit. When dealing with abstract examples involving individuals these differences in intent are clear. But in practice the precise intentions behind borrowing become harder to pin down, especially when dealing with complex entities like corporations. For one thing, companies borrow with the intent of both covering expenses *and* investing in assets. In a company's financial statement, there is no clear way of parsing these motives and delineating which segments of debt have been incurred for the day-to-day running of the company, and which have been incurred for 'gearing' markets towards meeting the company's expectations of future profitability. More fundamentally, the overarching goal of any capitalist entity is to make a profit. Since the incurrence of operating expenses is a necessary part of realizing this goal, and since the generation of profit from investments is never assured, any form of borrowing can be taken *ex ante* to be a source of potential vulnerability (debt) or a source of potential power (leverage).

Building on the capital-as-power (CasP) framework propounded by Jonathan Nitzan and Shimshon Bichler (2009, p.312), we suggest that leverage can only be understood in terms of its effects. Accordingly, in our empirical analysis we shift away from the *ex ante* intentions behind borrowing and instead focus on its *ex post* outcomes. Put simply, all corporations borrow with the ultimate intention of making profits, but leverage constitutes a form of power only insofar as its use results in enhanced profitability. In other words, to the extent that leverage boosts profitability relative to other companies it also augments the power of the borrowing entity. And one of the most effective ways to use leverage in the service of profitability is to increase borrowing while at the same time keeping debt servicing (i.e. interest) expenses comparatively low. The ability to expand leverage at a minimal cost is something of a holy grail for those seeking to use debt financing to bolster their bottom line.

One of the quantitative proxies Nitzan and Bichler (2002, p. 339) develop to measure the concentration of corporate power draws on Michał Kalecki's (1938) work on the 'degree of monopoly' (see also Bichler and Nitzan 2006, pp. 54-55, Hager and Baines 2020, pp. 283-285, Nitzan and Bichler 2009, pp. 50-1). As a measure of net profit margins (i.e. net profit to sales), the degree of monopoly gives us a quantitative proxy for the relative power of corporations. Put simply, the higher the relative degree of monopoly, the greater the implied relative power. Fluctuations in the degree of monopoly register changes in power over time, and thus, if leverage is indeed a form of power, we should expect it to increase in step with relative profit margins. Note that we are not making any definitive claims about the causal relationship between leverage and profit margins. In our view, leverage *is* power only insofar as it is associated with enhanced net profit margins, and so the relationship between the two is necessarily co-constitutive. Leverage enables firms to boost profits and gain market shares, just as high profits and market shares enable firms to borrow on favourable terms in order to

increase their leverage. While it is true that a firm can enjoy healthy profit margins without leverage, it is nonetheless difficult for a firm to engage in leveraging, at least in any significant way for a sustained period of time, without healthy profit margins.

Some recent literature on banking offers clues as to how we can think about the relationship between leverage and power in the non-financial corporate sector. One approach emphasizes the structural aspects of this power, through which leverage entails binding the fate of others to your own financial success, as in the case of ‘too big to fail’ banks (Konings 2018). Another approach is agency-centred, analyzing the ways in which leverage allows borrowers to actively shape market outcomes (Knafo 2020, pp. 92-3). This agency-centred approach is reflected in Sgambati’s (2019, p. 292) aforementioned analysis of how leverage can be used to gear markets toward our expectations by helping a firm increase market share, buy up competitors, affect market prices and boost rates of return (see also Di Muzio and Robbins 2015). Leverage in this sense is, as Hilferding and Veblen recognized long ago, about gaining an advantage over rivals in order to assert dominance within the market. Under competitive conditions, we might expect non-financial firms to borrow only when lacking the internal funds needed to expand their productive capacity. But the use of leverage as power defies these expectations. A classic example of a powerful company leveraging in this way is Apple Inc., which has billions in cash piles but has nonetheless borrowed billions in financial markets over the past decade, not for productive investment, but in order to boost its share price through dividend payments and stock buybacks (see Foroohar 2017, pp. 1-3).

Finally, it is important to stress that our definition of leverage as power is figurative (Nitzan and Bichler 2009, pp. 312-3). Sympathetic critiques of the CasP framework note that it tends to privilege quantitative metrics of power in ways that abstract from the concrete practices of power and how these vary across time and space (Knafo *et al.* 2013). Thus, in order to determine whether leverage is power, we must examine not only its association with net profit margins, but also its specific articulations within different institutional, regulatory and policy contexts. Establishing these linkages is an inherently speculative exercise, and its validity hinges on our abilities to tell a ‘scientific story – a systematic historical analysis that convincingly ties the quantities and qualities of capitalist power’ (Nitzan and Bichler 2009, p. 313). Space constraints compel us to privilege the quantitative side of this story-telling endeavour. We nonetheless think that our mapping exercise complements existing accounts of the qualitative history of leverage as power in the non-financial corporate sector (see Knafo and Dutta 2016). The disaggregated findings of this study may also serve as a starting point for further in-depth investigations of the complex social and institutional manifestations of leverage as power. With these conceptual claims in mind, we now turn to our empirical mapping of the pattern of indebtedness for firms of different sizes.

The Debt Divergence

Our analysis relies on Compustat, a comprehensive database of financial information on listed companies. In the accompanying appendix, we discuss the filtering procedures followed to obtain our sample of firms. Here we preface our analysis by addressing an important question:

to what extent does an examination of firms listed on the stock market actually allow us to capture meaningful differences in firm size (see also Hager and Baines 2020)? After all, going public is normally associated with large corporations, and so our Compustat sample does not encompass the millions of smaller businesses not listed on the stock market. The exclusion of unlisted firms from our sample means that we are unable to disaggregate the pattern of indebtedness for the business sector as a whole.

Despite these limitations, we maintain that Compustat data is useful because the variation in the size of listed corporations is much greater than often assumed. To illustrate, in response to the COVID-19 crisis, the Federal Reserve has introduced emergency lending facilities, dubbed the Main Street Facilities, aimed at small and medium-sized companies. In order to qualify for assistance under the Main Street Facilities, a company must have revenues in 2019 of less than \$5 billion (Labonte 2020). By this yardstick, 84 per cent of the firms in our Compustat sample would qualify as small and medium-sized. More restrictive criteria for defining small businesses are offered by the U.S. Small Business Administration (SBA). The maximum amount of annual revenues a company can have to be considered small by SBA (2019) standards varies from sector to sector and ranges from \$1 million to \$41.5 million. In our Compustat sample for 2019, 14 per cent of companies had revenues of less than \$1 million and over a quarter had revenues of less than \$41.5 million. The main point we want to stress is that our analysis of listed companies does not just compare very large firms to giant ones.

With this in mind, Panel A in Figure 1 presents a standard measure of corporate leverage, the debt-to-capital ratio (Graham *et al.* 2015; Welch 2011), for three categories of US firms ranked by annual revenues. Specifically, the figure shows leverage ratios for the top 10 per cent, a proxy for large firms, those in the fifth to ninth decile, a proxy for medium-sized firms, and the bottom 50 per cent, a proxy for small firms. From the mid-1950s to the late-1970s we see that the leverage of all three categories steadily increases. The leverage ratio of the bottom 50 per cent peaks at 0.50 in 1978. Small firms then begin to deleverage from 1979 to the present, though their average debt-to-capital ratio has increased slightly since 2004. In the 1980s, leverage ratios of the top 10 per cent and fifth to ninth decile move sideways before surging to their peak in the early 1990s. Since then, the leverage ratios of large and medium-sized firms have moved sideways, both hovering at around 0.5.

In addition to leverage, we disaggregate debt servicing costs. Panel B in Figure 1 shows interest expenses as a percentage of revenues for our three categories of firms. Here we see that interest expenses climb for firms of all sizes from the mid-1950s to the early 1990s. Yet over the most recent three decades, the interest expenses of firms of different sizes have diverged markedly. Large firms have seen their interest expenses fall dramatically from 3.9 per cent of revenues in 1991 to 1.9 per cent in 2019. Medium-sized firms have also seen their interest expenses fall, though not nearly as much as for large firms. What is remarkable is that the interest expenses of small firms have been increasing over the same period, reaching 5.9 per cent of revenues in 2019, over triple the debt servicing burden of large firms.

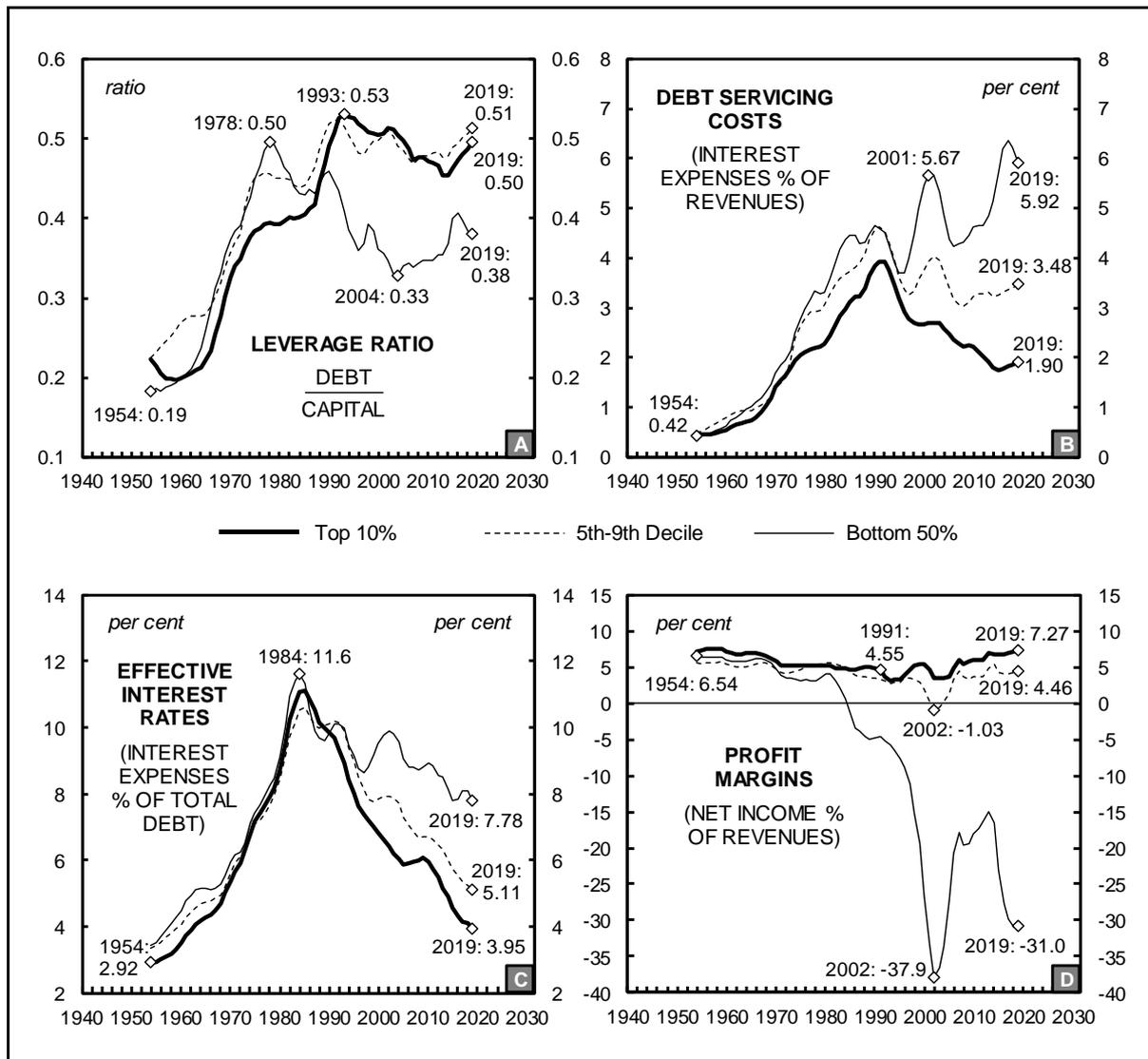


Figure 1. Leverage, Indebtedness and Profitability among US Non-Financial Firms

Note: Data are presented as 5-year trailing averages. Capital is calculated as the sum of total debt and shareholders' equity. Total debt is calculated as the sum of long-term debt and debt in current liabilities. Shareholders' equity is calculated by subtracting total liabilities from total assets.

Source: Authors' elaboration of data from Compustat through WRDS.

Another way of assessing costs is to look at the interest rate on firms' existing stock of debt. Panel C in Figure 1 shows the effective interest rate for our three company categories. Again, we see a familiar pattern, with synchronicity in the post-World War II era giving way to divergence in recent decades. Interest rates climb steadily for all firms from around three per cent in the mid-1950s to a peak of around 11 per cent in the mid-1980s. From the mid-1980s to the present, interest rates fall for all firms, but the rate of decrease has been highly differential. Large firms see their cost of borrowing fall to 3.9 per cent, medium-size firms to 5.1 per cent, and small firms to 7.8 per cent. The onset of the dramatic divergence in the financial structures of large and small firms coincides with the 'Volcker Shock,' a decisive event in the history of US monetary policy, which saw then Federal Reserve chair Paul Volcker engage in an

inflation-fighting crusade by raising prime lending rates above 20 per cent in the early 1980s (Hager 2012). The Volcker Shock is often portrayed as precipitating a shift in the balance of class forces in the neoliberal era, empowering capital over labour, and financial corporations over non-financial corporations (Duménil and Lévy 2004, 2011, Panitch and Gindin 2012). What gets lost in these aggregated accounts of capital is the fact that the sharp spike and subsequent decline in interest rates also ushered in a profound shift in fortunes within the non-financial corporate sector. As debt servicing costs continue to rise for small firms, the only thing that appears to be keeping them afloat is the wall of cheap money that has become an endemic feature of our crisis-ridden era.

Taken together, these data in Panels A-C bring to light what we refer to as the *great debt divergence*: a dramatic shift in the disaggregate pattern of corporate indebtedness in recent decades. In the postwar period there was little to distinguish small, medium-sized, and large firms in terms of their usage of debt financing. From the 1950s through the 1970s, leverage ratios, interest expenses, and interest rates climb for all three categories of firms. But in recent decades the fortunes of these firms have diverged. The data indicate a particularly striking advantage for large firms. Though their leverage ratio has increased over the past few decades, large firms have seen their debt servicing costs and effective interest rate plummet. Medium-sized firms have also managed to combine persistently high leverage ratios with falling debt servicing costs and interest rates, though their cost advantage is not as great as that of large firms. Meanwhile, small firms, in spite of rapid deleveraging and modest decreases in effective interest rates, have seen borrowing costs soar as a percentage of their revenues.

How does the debt divergence relate to the degree of monopoly as expressed in net profit margins? Panel D in Figure 1 shows the net profit-to-revenues ratio for our three categories of firms. As we can see, during the postwar period there was again little to distinguish firms of different sizes in terms of their net profit margins. But we see a dramatic change around 1980, one that roughly coincides with the debt divergence. Smaller corporations see their profit margins dip consistently into negative territory. The scaling of the graph required to display the severe losses within the bottom 50 per cent obscures the solid performance of the top 10 per cent. For large corporations, increasing leverage ratios and falling interest expenses have been coupled with net profit margins increasing more than twofold, from just over 3.1 per cent in the early-1990s to 7.3 per cent in 2019. In relative terms, power is being rapidly concentrated in favour of large firms since the early 1980s.

Small firms appear to be caught in a vicious circle. The fact that the debt servicing burdens of small firms have increased sharply despite deleveraging and falling interest rates points toward a severe contraction in their total revenues. To make matters worse, the collapse of small firm revenues has been combined with severe losses as measured in the net profit-to-revenues ratio. Small firms might be tempted to take advantage of falling interest rates on borrowing in an effort to increase their revenues and profits. But in relative terms, the cost of borrowing for smaller firms is considerably higher than medium-sized and large firms, putting them at a considerable disadvantage. For large firms, on the other hand, the circle is virtuous: high and

stable profit margins validate low interest rates, and low interest rates reinforce high and stable profit margins.

How do we explain the debt divergence? In other words, how did the US end up in a situation whereby the balance sheets of its largest corporations are increasingly robust at the same time as its smaller firms have been pushed into acute financial distress? The answer to these questions, as we argue in the next section, lies in understanding the dynamics of power and concentration as they have unfolded in the era of shareholder capitalism.

Who Distributes, Who Downsizes?

The onset of the debt divergence coincides with a profound transformation in corporate strategy brought by the rise of shareholder value norms. William Lazonick and Mary O’Sullivan (2000) note how in the post-World War II period corporate strategy was geared toward retaining earnings and reinvesting them in productive capacity. But from the 1980s onwards the predominant strategy has been to downsize operations and distribute earnings to shareholders in the form of dividend payments and stock buybacks. Much has already been said about the origins of the shareholder value revolution (Heilbron *et al.* 2014, Knafo and Dutta 2020), with some of the most prominent studies linking it to changing patterns of accumulation and structural shifts in the global political economy (Duménil and Levy 2004, Milberg and Winkler 2013, Stockhammer 2004), the rise of ‘agency theory’ within financial economics (Fligstein 2001), as well as transformations in government policy and regulation (Davis 2009, Krippner 2011). While rich in theoretical insights and historical-empirical details, what is often neglected in this literature is the disaggregate perspective. Thus, our purpose here is to contribute to the small body of research examining the degree to which firms of different sizes have embraced shareholder value norms (Davis 2016, 2018, Orhangazi 2008). Disaggregating key metrics on shareholder value maximization, we argue, offers insights that help us to account for the great debt divergence.

Panel A in Figure 2 looks at the ‘distribute’ side of shareholder primacy. It shows shareholder payouts, dividend payments and stock buybacks as a percentage of revenues, for our three categories of firms. The data lend support to Lazonick and O’Sullivan’s claims regarding the shift in corporate strategy since the 1980s. As we see, during the postwar period, shareholder payouts for the top 10 per cent decline significantly, only to begin a rapid ascent from the 1980s onwards. In fact, distributions to the shareholders in large firms have tripled from 2.6 per cent of revenues in 1980 to 7.8 per cent in 2019. What we also see in the figure is that the experiences of medium and small firms are generally in line with those of large firms. Though large corporations appear to be leading the charge, there has been a secular rise in distributions to shareholders for all firms over the past few decades.

What about the ‘downsizing’ side of shareholder primacy? Panel B in Figure 2 shows capital expenditures as a percentage of revenues, an inverse proxy for the degree of downsizing for our three categories of firms. As we see, companies in the top decile have clearly reduced their commitments to capital expenditures, a finding that aligns with Lazonick and O’Sullivan’s

claims about the shift in corporate strategy. From 9.5 per cent of revenues in 1980, the top decile has scaled back fixed investment to 6.8 per cent in 2019. Medium-sized firms also engaged in downsizing, reducing capital expenditures from 10.5 per cent of revenues in 1980 to 7.5 per cent in 2006. Since that time, however, the capital expenditures of medium-sized firms have rebounded to 10.4 per cent of revenues in 2019. In stark contrast to the experience of their large counterparts, small firms have seen their capital expenditures as a percentage of revenues increase greatly, from 9.5 per cent of revenues in 1980 to 15.5 per cent in 2019.

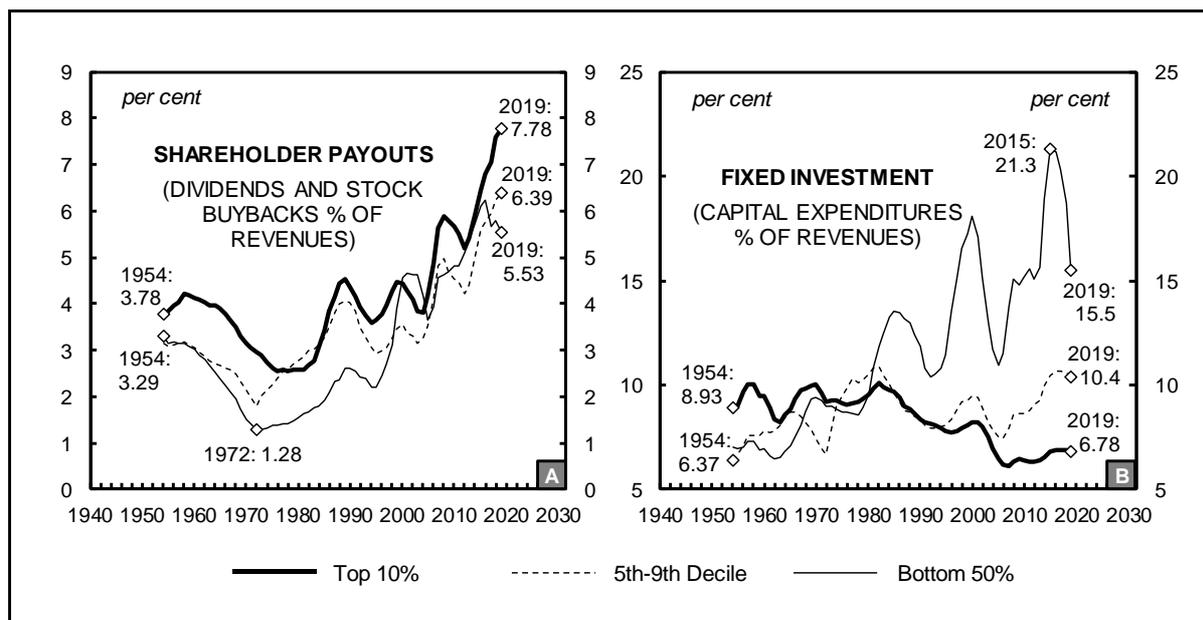


Figure 2. Shareholder Distributions and Fixed Investment among US Non-Financial Firms

Note: Data are presented as 5-year trailing averages.

Source: Authors' elaboration of data from Compustat through WRDS.

Our analysis indicates that firms of all sizes are more or less equally committed to distributing earnings to shareholders, but only the largest corporations have embraced the downsizing side of shareholder value norms. In short, large corporations have been engaging in downsize and distribute, while small corporations have been distributing at the same time as they have been expanding productive capacity. Our findings thus suggest that the distribute side of shareholder value norms are generalizable to the entire nonfinancial corporate sector. No matter what their relative size, our data suggest that all firms are subject to competitive pressures from financial markets to maintain decent returns for their shareholders. Yet diverging patterns of productive investment by firms of different sizes indicate that claims made about the downsizing side of shareholder value cannot be generalized.

These diverging patterns should be understood in the context of the growing power of large firms in recent decades. Firms in the top decile tend to dominate the sectors in which they operate and are therefore shielded from pressures to increase capital expenditures as a way of maintaining their supremacy. Our findings are thus in line with a growing number of studies

that demonstrate that increasing concentration goes hand in hand with outsized profit margins and decreasing investment for top firms (De Loecker *et al.* 2020, Díez *et al.* 2018, Gutiérrez and Philippon 2018, Kopp *et al.* 2019, Philippon 2019, cf. Davis and Orhangazi 2020). Part of this process is attributable to the cumulative build-up of capacity by the very largest companies, which means that they have grown to ‘maturity’ in the business life-cycle. Recast in terms of power, at this stage these firms have built enough idle capacity in their core competencies to deter potential upstarts from market entry and to prompt closer coordination with other lead firms wary of market gluts (Bulow *et al.* 1985, Uzunca and Cassiman 2020). Another part of this process is the rapid ascent of leading tech and pharmaceutical firms and the concomitant entrenchment of an intellectual property rights regime which safeguards their intangible assets for extended periods (Durand and Milberg 2020). As these intangible assets do not physically depreciate like tangible assets, and as they are protected by patent thickets, leading knowledge-intensive firms are not subject to significant pressure to expand productive capacity (Schwartz 2016). In contrast, firms in the bottom 50 per cent not only have to establish themselves through large-scale capital investment irrespective of the sector in which operate, they also have to appease shareholders who are continually demanding higher returns on their own investments.

This exploration of the dynamics of shareholder capitalism helps us make sense of the acute financial distress small firms have been experiencing. Disaggregating our data by sector would ideally be the next step in our analysis, but it lies beyond the scope of this article. Nonetheless, what we have shown is that small firms, despite deleveraging and reduced borrowing costs, have seen interest expenses eat into their meagre revenues. Competitive pressures mean that small firms are further strained by the dual imperative to satisfy shareholders and invest in productive capacity. These forces combine to push small firms to consistently register severe losses, as expressed in net profit margins, since the early 1980s. In the same period, large firms have enjoyed a fortuitous combination of increasing leverage, rapidly falling effective interest rates, and decreasing interest expenses. Large firms have been able to use leverage to reinforce their dominance in financial markets through outsized shareholder payouts while curtailing their productive investment. This virtuous circle has translated into an increasing degree of monopoly for large firms as registered in their net profit margins. Our research therefore suggests that the concentration of profits at the top of the US corporate hierarchy and the growing financial distress of firms at the bottom are two dimensions of the same transformation of power.

Conclusion: COVID-19 and the Great Debt Divergence

We began collecting and analyzing data on the disaggregate pattern of corporate indebtedness in the summer of 2019, and like other researchers, we now find ourselves reevaluating our key claims in light of the COVID-19 crisis. It seems only fitting, then, to conclude the analysis with some tentative thoughts on what the pandemic means for the great debt divergence. In our estimation, the way that the crisis and the government response have unfolded only served to reinforce and amplify the trends we have identified here.

On Sunday 16 March 2020, the Federal Reserve responded to growing fears of a pandemic-induced recession by implementing policies largely reminiscent of its response to the global financial crisis in 2008. The central bank slashed the target federal funds rate to 0-0.25 per cent, the second emergency rate cut in as many weeks, and announced a new round of quantitative easing (QE), pledging to purchase \$700 billion of Treasury and mortgage-backed securities. These measures did little to calm the nerves of investors, and when markets opened the following day, the S&P 500 slid 12 per cent, its worst performance since the ‘Black Monday’ crash of 1987 (Lockett *et al.* 2020). To exacerbate matters, unemployment skyrocketed, with weekly initial jobless claims shattering all records since the federal government started collecting these data back in 1967. Corporate borrowing costs, even for investment-grade debt, began to soar in response to the turmoil, stoking fears of an imminent wave of defaults (Rennison and Platt 2020). It was becoming apparent that the crisis of 2020 was very different from 2008 and would require entirely new strategies.

Just a week after the near-zero rate cut, the Fed pledged to do whatever necessary to shore up ailing financial markets, including unprecedented support for the non-financial corporate sector in the form of grants, loans, and direct bond purchases. As part of the Coronavirus Aid, Relief, and Economic Security (CARES) Act signed on 27 March 2020, the federal government backed the Fed’s efforts, earmarking \$454 billion as an equity stake for the Fed’s emergency lending facilities. The Fed would then be able to lever the Treasury’s backstop to the tune of over \$4 trillion, providing targeted support to small and large businesses alike (Wiggins 2020). Of the various lending facilities established since the enactment of the CARES Act, two are especially relevant to our analysis: the Main Street Facilities (MSF), comprising \$600 billion in loans for small and medium-sized companies with less than \$5 billion in revenues and 15,000 employees or fewer in 2019, and the Corporate Credit Facilities (CCF), with \$750 billion to support the bond and syndicate loan issuance of large investment grade companies (as well as recent ‘fallen angels’) in primary and secondary markets (Smith and Fox 2020). Its initial interest rate cut and QE plan fell flat, but the Fed’s subsequent corporate rescue through the CARES Act was a major boon to ailing financial markets. Though unemployment remains stubbornly high, stock markets have rebounded and on average corporate borrowing costs have plummeted (Rennison *et al.* 2020, Rennison 2020a).

The Fed’s large-scale intervention may have saved the financial system from collapse, but critics argue that the rescue package, though delivered under the guise of neutrality, has been heavily biased toward the largest corporations (Brenner 2020, Dayen 2020, Judge 2020).⁴ In response to the Fed’s pledge to support bond markets, large corporations have taken advantage of low interest rates and gone on a borrowing spree (Lynch 2020). In the first five months of 2020, US corporations managed to borrow one trillion dollars, nearly as much as they normally do in a whole year (Gross and Rennison 2020). Investment-grade companies rushed to fill up their war chests with billions in newly issued debt to ride out the pandemic storm, and they were able to do so even before the Fed had purchased a single bond through the CCF. Apple Inc. was able to issue some of its cheapest bonds in years, which it used to fund dividends and stock buybacks (Duguid and Franklin 2020). Food-service giant Sysco issued \$4 billion in new

debt and then proceeded to lay off more than 20,000 workers, one-third of its total workforce, at the same time as it announced a dividend payment (Ivry *et al.* 2020).

While large investment-grade companies have issued record amounts of debt, their smaller counterparts have been struggling to raise funds, a sign that investors have been shying away from companies that had the weakest balance sheets entering into the COVID-19 crisis (Noonan 2020). This widening gap in access to credit was something that the MSF was supposed to address but it has thus far failed to do so. The main problem with the MSF is that distressed companies most in need of emergency lending do not qualify because of its strict cap on leverage.⁵ Even if companies do qualify for MSF, many have found the administrative burden of accessing it too costly (Noonan *et al.* 2020). There has been limited interest in the MSF, especially for the small loans on offer, and according to Lauren Anderson (cited in Noonan *et al.* 2020) of the Banking Policy Institute, this is due to the fact that banks have found it hard to find borrowers ‘...who met the programme’s requirements of being creditworthy enough to receive loans, but not creditworthy enough to secure loans in the commercial market.’

Our view is that the COVID-19 crisis represents a missed opportunity for policymakers. Rather than use their fiscal and monetary power to build a more stable and equitable financial system, the Fed and Treasury have instead decided to prop up a highly dysfunctional one. Thanks to the Fed’s pledge to support the market for investment-grade debt at any cost, the largest corporations continue to use leverage as power, borrowing at low cost. As has become commonplace in the era of shareholder capitalism, the largest corporations use leverage not to invest in productive capacity or to expand their workforces, but to enrich shareholders through dividends and buybacks. At the same time, smaller corporations, already distressed before the onset of the pandemic, now find themselves stuck between a rock and a hard place, not creditworthy enough to access debt markets nor to receive emergency financing from the Fed. The rating agencies are forecasting a wave of defaults (Rennison 2020b). Unless there is a radical departure from the current policy regime, the US political economy in the post-COVID 19 world is likely to resemble the pre-COVID 19 one, only with more market turmoil, more concentration, more inequality, and even less investment.

Notes

1. The original theorem also assumed there were no corporate income taxes. In a later paper, Modigliani and Miller (1963) incorporate corporate taxes into their model to demonstrate how interest deductibility can make debt more attractive than equity. Yet it is not entirely clear whether interest deductibility is a primary motive for engaging in debt finance. As we will see later on in our own research, small firms have seen their interest expenses soar and their net (after-tax) profits plummet in recent decades. In the aggregate, the corporate tax system may favour debt over equity. But in the disaggregate, it appears that smaller firms do not engage in as sophisticated tax planning as large firms (including the use of offshore finance), and therefore tend to be unable to take full advantage of the tax incentives that come with indebtedness (see Dallari *et al.* 2018, p. 7).
2. Although not framed in terms of the ‘business risk hypothesis,’ an empirical study by Graham *et al.* (2015) examines the leverage ratios (debt-to-capital) for different firms based on size of assets from 1920-2010. Across a range of samples, they find that the leverage of large firms is consistently higher than for small and medium-sized ones.

3. Minsky (1986, pp. 230-8) outlines three financing regimes, listed here from most to least unstable: ‘Ponzi,’ in which cash inflows do not cover interest payments or principal, ‘speculative,’ in which cash inflows cover interest but not principal, and ‘hedge,’ in which cash inflows cover interest and principal.
4. It is worth pointing out that large corporations have not been mere passive recipients of this assistance. In fact, the pandemic has unleashed a ‘lobbying frenzy,’ with corporate lobbyists trying to secure government aid for the firms in the sectors they represent (Politi *et al.* 2020). This response is reminiscent of the lobbying efforts of banks over the crafting of the bailout measures of 2008 (Abramson 2020).
5. The MSF calculates leverage as debt-to-earnings before interest, taxes, depreciation and amortisation (EBITDA). Depending on the type of loan, companies must limit their leverage to either four or six times EBITDA to qualify (Armstrong 2020).

Acknowledgements

Earlier versions of this article were presented at the fourth workshop of the Politics of Money Research Network, University of Amsterdam, 5-6 December 2019; the first workshop of the Ethics of Debt Network, University of York, 29 May 2020; the Department of European and International Studies Seminar Series, King’s College London, 7 October 2020; and the Department of International Politics Research Seminar, City, University of London, 14 October 2020. We would like to thank the participants at these workshops and seminars for their helpful feedback. Thanks are also due to Leah Downey, Rana Foroohar, Karsten Kohler, Etienne Lepers, Mike McCarthy, Amin Samman and Stefano Sgambati, as well as two anonymous referees, for reading and commenting on earlier drafts. Finally, we are grateful to Xuying Jiang for guidance on processing the data. Any mistakes or shortcomings are ours alone.

References

- Abramson, A. 2020. ‘No lessons have been learned.’ Why the trillion-dollar coronavirus bailout benefited the rich. *Time*, 18 June, Available from: <https://time.com/5845116/coronavirus-bailout-rich-richer/> [accessed 27 October 2020]
- Armstrong, R., 2020. Wall Street warns US rescue scheme will exclude many mid-sized companies. *Financial Times*, 28 April, p. 8.
- Banerjee, R. and Hoffman, B., 2018. The rise of zombie firms: Causes and consequences. *BIS Quarterly Review*, September, 67–78.
- Baskin, J.B. and Miranti Jr., P.J., 1997. *A history of corporate finance*, Cambridge: Cambridge University Press.
- Bichler, S. and Nitzan, J., 2006. New imperialism or new capitalism? *Review: A Journal of the Fernand Braudel Center*, 29(1): 1–86.
- Bowring, J., 1990. *Competition in a dual economy*, Princeton: Princeton University Press.
- Brenner, R., 2020. Escalating plunder. *New Left Review*, 123: 5–22.

- Bulow, J.I., *et al.*, 1985. Multimarket oligopoly: Strategic substitutes and complements. *Journal of Political Economy*, 93(3): 488–511.
- Çelik, S., *et al.*, 2019. Corporate bond markets in a time of unconventional monetary policy. *OECD Capital Markets Series*, Paris: OECD.
- Cochrane, E., and Fandos, N., 2020. Senate approves \$2 trillion virus response. *New York Times*, 26 March, p. A1.
- Cohan, W.D., 2018. The big, dangerous corporate debt bubble. *New York Times*, 11 August, p. A19.
- Dallari, P., *et al.*, 2018. Pouring oil on fire: Interest deductibility and corporate debt. *IMF Working Paper Series*, WP/18/257: 1–42.
- Davis, G.F., 2009. *Managed by the markets: How finance re-shaped America*, Oxford; Oxford University Press.
- Davis, G.F., 2013. After the corporation. *Politics & Society*, 41(2): 283–308.
- Davis, L.E., 2016. Identifying the “financialization” of the nonfinancial corporation in the US economy: A decomposition of firm-level balance sheets. *Journal of Post Keynesian Economics*, 39(1): 115–141.
- Davis, L.E., 2018. Financialization and the non-financial corporation: An investigation of firm-level investment behavior in the United States. *Metroeconomica*, 69(1): 270–307.
- Davis, L. and Orhangazi, Ö., 2020. Competition and monopoly in the US economy: What do the industrial concentration data show? *Competition & Change*, OnlineFirst, 1–20.
- Davis, L.E., *et al.*, 2019. An empirical analysis of Minsky regimes in the US economy. *Cambridge Journal of Economics*, 43(3): 541–584.
- Dayen, D., 2020. Corporate rescue: How the Fed bailed out the investor class without spending a cent. *The Intercept*, 27 May, Available from: <https://theintercept.com/2020/05/27/federal-reserve-corporate-debt-coronavirus/> [accessed 27 October 2020].
- De Loecker, J., *et al.*, 2020. The rise of market power and the macroeconomic implications. *Quarterly Journal of Economics*, 135(2): 561–644.
- Díez, M.F., *et al.*, 2018. Global market power and its macroeconomic implications. *IMF Working Paper*, WP/18/137: 1–41.
- Di Muzio, T. and Robbins, R.H., 2015. *Debt as power*, London: Bloomsbury Academic.
- Duguid, K. and Franklin, J., 2020. Apple borrows on the cheap to fund buybacks, dividends, *Reuters*, 5 May, Available from: <https://www.reuters.com/article/us-apple-debt/apple-borrows-on-the-cheap-to-fund-buybacks-dividends-idUSKBN22H001> [accessed 27 October 2020].

- Duménil, G. and Lévy, D., 2004. *Capital resurgent: Roots of the neoliberal revolution*, Cambridge MA: Harvard University Press.
- Duménil, G. and Lévy, D., 2011. *The crisis of neoliberalism*, Cambridge MA: Harvard University Press.
- Durand, C. and Milberg, W., 2020. Intellectual monopoly in global value chains. *Review of International Political Economy*, 27(2): 404–429.
- Federal Reserve. 2020. Nonfinancial corporate business; Debt securities; Liability, Level [NCBDBIQ027S]. *FRED: Federal Reserve Bank of St. Louis*. Available from <https://fred.stlouisfed.org/series/NCBDBIQ027S> [accessed 27 October 2020].
- Fligstein, N., 2001. *The architecture of markets*, Princeton: Princeton University Press.
- Forges Davanzati, G. and Pacella, A., 2014. Thorstein Veblen on credit and economic crises. *Cambridge Journal of Economics*, 38(5): 1043-1061.
- Foroohar, R., 2017. *Makers and takers: How Wall Street destroyed Main Street*, New York: Crown Business.
- Gale, B.T., 1972. Market share and rate of return. *Review of Economics and Statistics*, 54(4): 412–423.
- Graham, J.R., *et al.*, 2015. A century of capital structure: The leveraging of corporate America. *Journal of Financial Economics*, 118(3): 658–683.
- Gross, A. and Rennison, J., 2020. Top-rated companies fill war chests for battle ahead by raising \$1tn in 5 months. *Financial Times*, 26 May, p. 1.
- Gutiérrez, G. and Philippon, T., 2018. Ownership, concentration, and investment. *AEA Papers and Proceedings*, 108: 432–437.
- Hager, S.B., 2012. Investment bank power and neoliberal regulation: From the Volcker Shock to the Volcker Rule. In H. Overbeek and B. van Apeldoorn, eds. *Neoliberalism in Crisis*, Basingstoke: Palgrave Macmillan, pp. 68-92
- Hager, S.B. and Baines, J., 2020. The tax advantage of big business: How the structure of corporate taxation fuels concentration and inequality. *Politics & Society*, 48(2): 275–305.
- Harrison, D., 2016. U.S. watch: Election 2016. *Wall Street Journal*, Europe Edition, 6 May, p. A5.
- Heilbron, J., *et al.*, 2014. The origins and early diffusion of ‘shareholder value’ in the United States. *Theory and Society*, 43(1): 1–22.
- Hilferding, R., 1910 [1981]. *Finance capital: A study of the latest phase of capitalist development*, London: Routledge.

Hurdle, G.J., 1974. Leverage, risk, market structure and profitability. *Review of Economics and Statistics*, 56(4): 478–485.

International Monetary Fund. 2019. *Global financial stability report: Lower for longer*, October, Washington D.C.: IMF.

Ivry, B., *et al.*, 2020. Fed vow boosts debt binge as borrowers cut thousands of jobs. *Bloomberg Quint*, 5 June, Available from: <https://www.bloombergquint.com/global-economics/fed-vow-boosts-debt-binge-while-borrowers-cut-thousands-of-jobs> [accessed 27 October 2020].

Judge, K., 2020. The Fed can do more for small businesses, but it needs help. *Forbes*, 13 July, Available from: <https://www.forbes.com/sites/kathrynjudge/2020/07/13/the-fed-can-do-more/#29434a22666f> [accessed 27 October 2020].

Kalecki, M., 1938. The determinants of distribution of the national income. *Econometrica*, 6(2): 97–112.

Karwowski, E., 2014. The dynamics of competition. In R. Bellofiore, E. Karwowski and J. Toporowski, eds. *Economic crisis and political economy: Volume 2 of essays in honour of Tadeusz Kowalik*, Basingstoke: Palgrave Macmillan.

Knafo, S., 2020. Macro-finance and the financialisation of economic policy. *Finance and Society*, 6(1): 87–94.

Knafo, S. and Dutta, S.J., 2016. Patient capital in the age of financialized managerialism. *Socio-Economic Review*, 14(4): 771–788.

Knafo, S. and Dutta, S.J., 2020. The myth of the shareholder revolution and the financialization of the firm. *Review of International Political Economy*, 27(3): 476–499.

Knafo, S. *et al.*, 2013. Differential accumulation and the political economy of power. In: T. Di Muzio, ed. *The capitalist mode of power: Critical engagements with the power theory of value*. London: Routledge, 134–151.

Konings, M. 2018. *Capital and time: for a new critique of neoliberal reason*, Stanford: Stanford University Press.

Kopp, E., *et al.*, 2019. US investment since the tax cuts and jobs act of 2017. *IMF Working Paper*, WP/19/120: 1–37.

Krippner, G.R., 2011. *Capitalizing on crisis: The political origins of the rise of finance*. Cambridge MA: Harvard University Press.

Labonte, M., 2020. Federal Reserve: Emergency lending in response to COVID-19. *Congressional Research Service Insight*, 15 June, Available from: <https://crsreports.congress.gov/product/pdf/IN/IN11327> [accessed 27 October 2020].

Lazonick, W. and O’Sullivan, M., 2000. Maximizing shareholder value: A new ideology for corporate governance. *Economy and Society*, 29(1): 13–35.

- Lockett, H., *et al.* 2020. US stocks fall 12% in worst day since 1987. *Financial Times*, 16 March, Available from: <https://www.ft.com/content/82c5c2ca-670e-11ea-800d-da70cff6e4d3> [accessed 27 October 2020].
- Lund, S., *et al.*, 2018. Rising corporate debt: Peril or promise? *McKinsey Global Institute Discussion Paper*, June, Washington D.C.: McKinsey & Co.
- Lynch, D.J., 2020. Encouraged by the Fed, corporations accelerate debt binge. *Washington Post*, 14 May, p. A18.
- Melicher, R.W., *et al.*, 1976. Industry concentration, financial structure, and profitability. *Financial Management*, 5(3): 48–53.
- Milberg, W. and Winkler, D., 2013. *Outsourcing economics: Global value chains in capitalist development*. Cambridge: Cambridge University Press.
- Minsky, H., 1982. The financial-instability hypothesis: Capitalist processes and the behaviour of the economy. In C.P. Kindleberger and J.P. Laffargue, eds. *Financial Crises: Theory, History, and Crises*, Cambridge: Cambridge University Press, pp. 13-37.
- Minsky, H., 1986 [2008]. *Stabilizing an unstable economy*, New York: McGraw-Hill.
- Modigliani, F. and Miller, M.H., 1958. The cost of capital, corporation finance and the theory of investment. *American Economic Review*, 48(3): 261-297.
- Modigliani, F. and Miller, M.H., 1963. Corporate income taxes and the cost of capital: A correction. *American Economic Review*, 53(3): 433–443.
- Nitzan, J. and Bichler, S., 2002. *The global political economy of Israel: From war profits to peace dividends*, London: Pluto Press.
- Nitzan, J. and Bichler, S., 2009. *Capital as power: A study of order and crederorder*. London: Routledge.
- Noonan, L., 2020. Bankers warn over support scheme. *Financial Times*, 11 April, p. 11.
- Noonan, L., *et al.*, 2020. Main Street loan facility draws little interest. *Financial Times*, 2 July, p. 4.
- Orhangazi, Ö., 2008. Financialisation and capital accumulation in the non-financial corporate sector: A theoretical and empirical investigation on the US economy: 1973–2003. *Cambridge Journal of Economics*, 32(6): 863–886.
- Panitch, L. and Gindin, S., 2012. *The making of global capitalism: The political economy of American empire*, London: Verso Books.
- Pedrosa, Í., 2019. Firms' leverage ratio and the financial instability hypothesis: An empirical investigation for the US economy (1970–2014). *Cambridge Journal of Economics*, 43(6): 1499–1523.

- Philippon, T., 2019. *The great reversal: How America gave up on free markets*. Cambridge MA: Harvard University Press.
- Politi, J. *et al.*, 2020. Washington besieged by pleas for federal aid. *Financial Times*, 14 April, p. 4.
- Pollin, R. 1986. Alternative perspectives on the rise of corporate debt dependency: The US postwar experience. *Review of Radical Political Economics*, 18(1-2): 205-235.
- Rennison, J., 2020a. US corporate borrowing costs sink to record low. *Financial Times*, 20 June, p. 13.
- Rennison, J., 2020b. Riskiest US companies left behind in rush to buy debt. *Financial Times*, 27 June, p. 13.
- Rennison, J. and Platt, E., 2020. Corporate borrowing costs soar amid default fears. *Financial Times*, 21 March, Available from: <https://www.ft.com/content/2602d57c-6ad4-11ea-800d-da70cff6e4d3> [accessed 27 October 2020].
- Rennison, J., *et al.*, 2020. Fed balance sheet shrinks as use of emergency facilities levels out. *Financial Times*, 17 June, p. 8.
- Schwartz, H.M., 2016. Wealth and secular stagnation: The role of industrial organization and intellectual property rights. *The Russell Sage Foundation Journal of the Social Sciences*, 2(6): 226–249.
- Sgambati, S., 2019. The art of leverage: a study of bank power, money-making and debt finance. *Review of International Political Economy*, 26(2): 287–312.
- Showalter, D., 1999. Strategic debt: Evidence in manufacturing. *International Journal of Industrial Organization*, 17(3): 319–333.
- Small Business Association, 2019. Table of size standards. Available from: <https://www.sba.gov/document/support--table-size-standards> [accessed 27 October 2020].
- Smialek, J., 2020. Fed succeeds in reviving corporate debt market before buying anything. *New York Times*, 13 May, p. 13.
- Smith, C. and Fox, B., 2020. Fed balance sheet shrinks as use of emergency facilities levels out. *Financial Times*, 27 June, p. 13.
- Steindl, J., 1945. *Small and big business*. Oxford: Basil Blackwell.
- Steindl, J., 1952 [1976]. *Maturity and stagnation in American capitalism*, New York: Monthly Review Press.
- Stockhammer, E., 2004. Financialisation and the slowdown of accumulation. *Cambridge Journal of Economics*, 28(5): 719–741.

Sullivan, T.G., 1974. Market power, profitability, and financial leverage. *Journal of Finance*, 29(5): 1407–1414.

Toporowski, J. 2008. Minsky's 'Induced investment and business cycles'. *Cambridge Journal of Economics*, 32(5): 725–737.

Toporowski, J. 2012. Corporate liquidity and financial fragility: The role of investment, debt and interest. *SOAS Working Paper Series*, No. 169: 1–14.

Uzunca, B. and Cassiman, B., 2020. Entry diversion: Deterrence by diverting submarket entry. *Strategic Management Journal*, Early View: 1–37.

Veblen, T., 1904 [1978]. *The theory of business enterprise*, New York: Routledge.

Veblen, T., 1905. Credit and prices. *Journal of Political Economy*, 13(3): 460-472.

Veblen, T., 1923. *Absentee ownership and business enterprise in recent times: The case of America*, London: George Allen & Unwin.

Welch, I., 2011. Two common problems in capital structure research: The financial-debt-to-asset ratio and issuing activity versus leverage changes. *International Review of Finance*, 11(1): 1–17.

Wiggins, R.Z., 2020. CARES Act \$454 billion emergency fund could add up to much more for businesses, states and municipalities. *Yale School of Management Program on Financial Stability Systemic Risk Blog*, 1 April, Available from: <https://som.yale.edu/blog/cares-act-454-billion-emergency-fund-could-add-up-to-much-more-for-businesses-states-and-municipalities> [27 October 2020].

Wigglesworth, R., 2019. Non-bank lending surge stirs painful subprime memories. *Financial Times*, 5 February, p. 19.

Appendix

Our total sample from Compustat comprises 272,406 firm-year observations for non-financial corporations headquartered in the US over the period from 1950 to 2019. To arrive at this number of firm-year observations, we have followed a strict filtering procedure, one that aims to eliminate problematic entries while at the same time maximizing the sample size. To filter out the financial sector, we have excluded all firms with a Standard Industrial Classification (SIC) code starting with ‘6’. Furthermore, to filter out all foreign corporations we have only included firms with an ISO country code for their headquarters (LOC) of ‘USA’ and with a company currency code (CURCD) of ‘USD’. As shown in Table A1, to remove problematic entries, we have excised all observations for a firm in any given year that records negative values for any of our variables other than net income, and we have dropped all firm-year observations with missing data for any of our variables other than dividends and share repurchases. The number of blank entries for the dividend and share repurchase variables is considerable, and we have therefore imputed zeros for these blank observations. Having cross-checked firm-year observations with corresponding entries on the Orbis and Zephyr databases, we are confident that blanks registered by companies for both dividends and stock buybacks are in fact zeros.

Table A1. Description of Variables

Data Item (mnemonic)	Remove all data of a firm in a given year if variable observation missing, or impute zero to the variable?
Assets – Total (at)	Remove
Capital Expenditures (capx)	Remove
Debt in Current Liabilities (dlc)	Remove
Dividends – Total (dvt)	Impute zero
Interest and Related Expense (xint)	Remove
Liabilities – Total (lt)	Remove
Long-term Debt (dltt)	Remove
Net Income (ni)	Remove
Purchase of Common and Preferred Stock (prstk)	Impute zero
Revenue (revt)	Remove

As shown in Table A2, our sample size fluctuates over time. The small number of firms in an average year for the 1950s and 1960s mean that the data for those decades should be approached with caution. But we do not think that fluctuations in the number of firms in the sample has a significant distorting effect on the trends identified in our analysis.

Table A2. Number of Firms in the Sample per Year (Decennial Averages)

	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-19
Average annual no. of firms in sample	411	1312	4344	5498	6477	5229	4000

As our empirical mapping exercise consistently shows, the great debt divergence can be traced to the 1980s and 1990s. If the divergence had coincided with a massive uptick in the number of firms, then there would be a risk that what we have captured is not divergence per se, but merely an inclusion of greater numbers of smaller firms in the sample. Yet as we see in Table A2, our sample size is fairly large in the 1970s, and as our data show, there is little to differentiate large and smaller firms by many measures during that decade. And even though the sample shrinks considerably in the 2010s, many of the trends of divergence that started in the 1980s and 1990s continue into the most recent decade. We therefore are confident that our dataset captures meaningful divergence over the past few decades, which cannot simply be reduced to changes in sample size.