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Lucia Granelli, Martin Habets, Guergana Stanoeva, Gaetano D'Adamo and Robert Gampfer

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Puzzles in Non-Financial Corporate Sector Savings across the G20

By Lucia Granelli, Martin Habets[1], Guergana Stanoeva, Gaetano D'Adamo and Robert Gampfer

Abstract

This Economic Brief provides a contribution to the better understanding of excess corporate savings identified as one of the factors underlying global imbalances by G20 Finance Ministers and Central Bank Governors in their June 2019 meeting Communiqué.

This Brief confirms that non-financial corporations' (NFCs) savings play an important role in the determination of current account balances. It presents some stylised facts on saving and investment dynamics, suggesting that gross saving, rather than investment, have dominated recent dynamics in non-financial corporate sector's net lending. It also looks at the macroeconomic factors that have been identified by the economic literature as the main drivers of non-financial corporate gross saving. It then complements this analysis with an assessment of corporate firm behaviour, which focuses on how firms allocate their savings in excess of investment across different types of assets, and discusses the tight relationship between corporate savings and cash holdings. The last two sections of the Brief look in more detail at the cases of China, the US and Germany, concluding with some policy recommendations, encompassing both national and international initiatives.

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Contact: Lucia Granelli, European Commission, Directorate-General for Economic and Financial Affairs, International economic and financial relations, global governance, ECFIN.D3 - IMF and G-Groups, lucia.granelli@ec.europa.eu.

[1] M. Habets was a blue book intern in the European Commission at the time of writing of this article.

Introduction

In June 2019, G20 Finance Ministers and Central Bank Governors identified high corporate savings as one of the main factors explaining continuously high current account imbalances in some regions of the world, and called for calibrated macroeconomic and structural policies tailored to country-specific circumstances to address this issue. Within the EU, for example, concerns about macroeconomic imbalances have been reflected in the Macroeconomic Imbalances Procedure[2] and in the European Semester, through the euro area recommendation and the country-specific recommendations.[3]

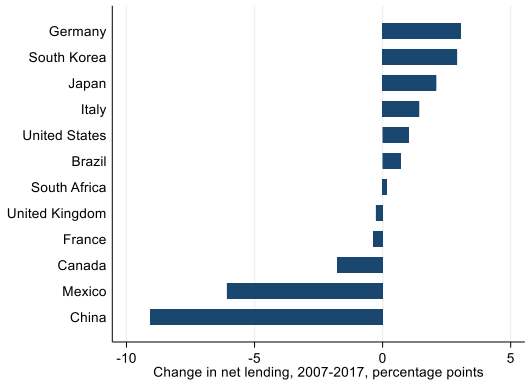
This Economic Brief assesses long-term trends in corporate savings. These trends originated in the 1990s and did not disappear after the 2008 crisis (Figure 1). Only in two countries - China and Mexico – borrowing by non-financial corporations increased significantly in the years following 2010, while non-financial corporation net lending increased in the majority of the countries analysed in this paper.

Non-financial gross corporate saving has risen globally from below 10 percent of global GDP around 1980 to nearly 15 percent in the 2010s. This increase has taken place in most industries and in the large majority of countries (Chen, Karabarbounis, & Neiman, 2017). It has been especially pronounced in a subset of advanced economies that already had large and persistent surpluses including Germany (although it nuanced there since 2016), Japan and Korea, thus contributing to the widening of global imbalances (IMF, 2019a). In this Economic Brief, we look at the G20 countries for which data are available. This sample of countries includes both advanced economies (Canada, France, Germany, Italy, UK, and USA), and emerging countries (Brazil, China, Mexico, South Africa, South Korea).

This Economic Brief is structured as follows. Section 1 shows that non-financial corporations' (NFCs) savings play an important role in the determination of current account balances. It also presents some stylised facts on saving and investment dynamics and concludes that gross saving is the main factor explaining net lending dynamics. In Section 2, gross saving is decomposed into its various sources, while Section 3 looks at how firms allocate the savings they have in excess of investment across different types of assets and discusses the tight relationship between corporate savings and cash holdings. Section 4 then adopts a country perspective and looks in more detail at the cases of China, the United States, and Germany. Finally, Section 5 concludes and offers some policy recommendations.

Due to data availability constraints (data after 2018 are not yet available for most of the countries under analysis), this Economic Brief cannot assess how non-financial corporations are using their eventual excess savings to face the drop in income caused by the COVID-19 pandemic. As shown in a recent BIS note on the basis of a sample of 40 000 listed and large unlisted non-financial firms across 26 advanced and emerging economies, the COVID-19 shock is placing important strains on corporate cash buffers.

Figure 1: Change in net lending/net borrowing position (i.e. gross saving – investment) of non-financial corporations, before and after the 2008 financial crisis



Source: AMECO, Eurostat, author's own calculations.

In the face of high uncertainty as in the current crisis, it is likely that the incentives for

[2] For information concerning the Macroeconomic Imbalance Procedure see:

https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/macroeconomic-imbalance-procedure_en.

[3] Information concerning the European Semester, the Euro area and country-specific recommendations are available at:

https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/european-semester_en.

companies to hoard liquidity and cut investment increase, until the uncertainty will dissolve.[4] The question of persistently high non-financial corporate savings hence deserves attention and merits to be considered within a medium and long-term perspective.

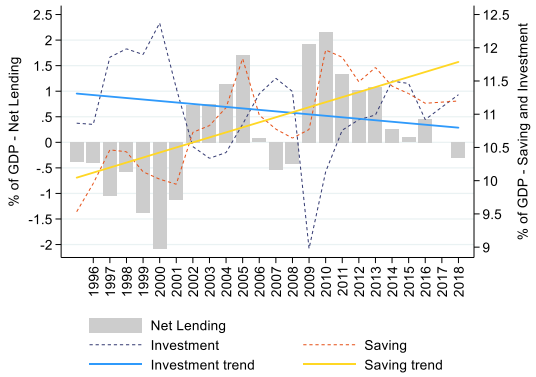
1. Corporate saving trends and global current account imbalances

The rise in non-financial corporate saving has attracted the attention of policy makers as it is argued to be quantitatively relevant in explaining global imbalances.

To illustrate this fact, current account balances can be broken down into sectoral contributions (Allen, 2019). Typically, the NFC sector is expected to be in a net borrowing position (i.e. to borrow in order to fund investment), the household sector to be in a net lending position (i.e. to be a net saver for life-cycle or precautionary reasons), and the financial corporation sector to intermediate the funds. In the aftermath of the global financial crisis, there was a large contraction in the NFC's net borrowing balances, which was especially visible in countries with current account deficits. In addition, larger net lending balances of the NFC tended to go hand in hand with larger current account surpluses. This holds true also for the government sector, while there exists no such correlation pattern in relation to the financial and household sectors. These trends confirm that NFC net lending is playing an important role in recent trends in current account balances and hence that looking further into NFC net lending can be highly relevant.

In advanced economies, stagnating or slowly decreasing investment expenditure coupled with rising savings led the non-financial corporate sector to increasingly become a net lender to the rest of the economy. This trend implies a contradiction with NFC's traditional role as net borrower (Cesaroni, De Bonis, & Infante, 2018). Figure 2 shows the aggregate net saving for the advanced countries in the G7 and confirms this trend. While the NFC sector had been a net borrower to the economy until the early 2000's, it has since then swung to being a net lender. By decomposing the NFC sector net lending/net borrowing aggregated across advanced economies into its two main components - gross saving and investment[5] - Figure 2 shows that the trend towards a net lending position is mainly driven by a long-term upward trend in saving, accompanied by weakening investment, notably in those countries having their current account in surplus.[6]

Figure 2: Net lending/net borrowing position of NFCs aggregated across advanced economies, 1996-2018



Source: AMECO, Eurostat, author's own calculations.

Note: The series are computed as the GDP-weighted average of the US, UK, Canada, Japan, Germany, Italy, and France. 2018 data are not available for Japan and the USA, and replaced by 2017 data.

Figure 3 expands the sample of countries and the time span under analysis, considering the net lending position up to 2018 for a sample of G20 countries (G7 countries, Brazil, China, Mexico, South Africa and South Korea). In this period, Brazil, Germany, Italy, Japan and South Korea have experienced an upward trend in net lending since the mid-1990s, driven by a rise in corporate savings. Some of these countries, such as Brazil and Germany, have recently started to reduce their NFC savings.

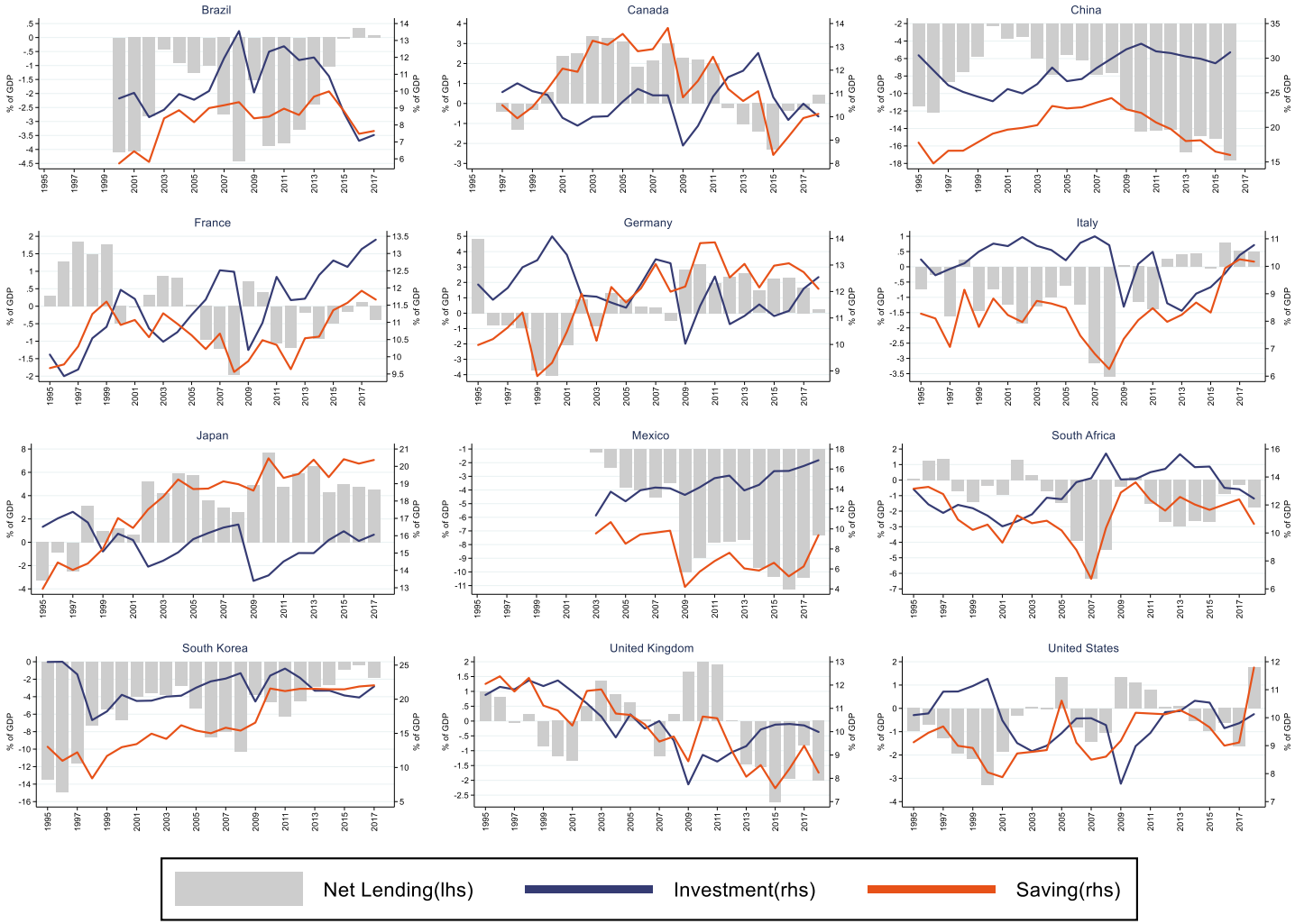
In France, South Africa, the United States, Canada, and the United Kingdom, the net lending position is more cyclical. While in France, South Africa, and the United States it is less clearly determined by corporate saving, there is still an

[4] See also Rodriguez-Palenzuela and Dees (2016).

[5] Where gross saving stands for the amount of firms' aggregate net income that are not distributed to shareholders, and investment refers to firms' aggregate investment in physical capital.

[6] Even if some economists argue that investment is the main culprit (e.g. Saibene, 2019), it may be important to note here that investment can be endogenous and depends on share buy-backs (e.g. Gutierrez and Philippon, 2018).

Figure 3: Net lending/net borrowing position (i.e. gross saving – investment) of NFCs of selected G20 countries, 1996-2018



Source: AMECO, Eurostat, author's own calculations.

upward trend in gross savings. In these three countries, the global financial crisis provoked a swing in NFC saving, leading to a net lending position during the Great Recession. This does not hold true for Canada and the United Kingdom, where gross savings are on a decreasing trend.

Finally, in Mexico and China, the NFC sector has been traditionally in a net borrowing position. In China, the household sector tends to be the main source of savings in the economy, whereas the NFC sector is a net borrower for financing their investments, as typically expected in standard economic theory for emerging market economies. In Mexico, the situation is similar and the NFC sector is increasing its net borrowing position.

The trends in NFC savings across the G20 members are overall puzzling. The economic literature has reached little consensus on the underlying sources of the shift of the NFC sector towards becoming a net lender to the economy. Thus, the following sections of this Economic Brief revisit the root causes of the increase in the net lending position of the non-financial corporate sector in selected G20 countries.

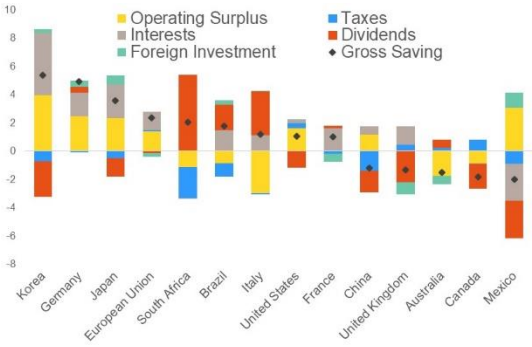
2. The macroeconomic drivers of corporate net lending

In the previous section, the NFC net lending has been decomposed into gross saving and investment, as set out below (see equation (1)). Overall, the long term upward trend in gross savings, accompanied by weakening investments, has been used to provide a first explanation of the behaviour in net lending. To get a clearer picture of the driving forces behind the rise in firms' net lending positions, in this section gross saving is decomposed further into its main components (Box 1). This allows the examination of whether the increase in gross savings is due to a rise in firms' profitability, a decline in the average tax rate, interest payments or revenue from foreign investment, a falling share of dividends, a decrease in labour share or a combination of all of these factors.

$$Net\ Lending = Gross\ Saving - Investment \quad (1)$$

Figure 4 decomposes the changes in gross saving into changes of operational surplus, taxes and interest payments, dividend pay-outs, and revenues from foreign investments in G20 countries where data are available over the period 2000 to 2017. The countries in which NFC gross saving has increased over the period are Korea, Germany, Japan, South Africa, Brazil, Italy, the United States, and France. Gross saving has also increased in the European Union as a whole.

Figure 4: Decomposing changes in NFC gross saving from 2000 to 2017 into sources (in percent of GDP)



Source: OECD Sectoral National Accounts, IMF WEO, author's own calculation.

Note: as data used stopped in 2017, the European Union aggregate includes the United Kingdom.

Four main factors lie behind the increase of NFC gross savings over the last 20 years:

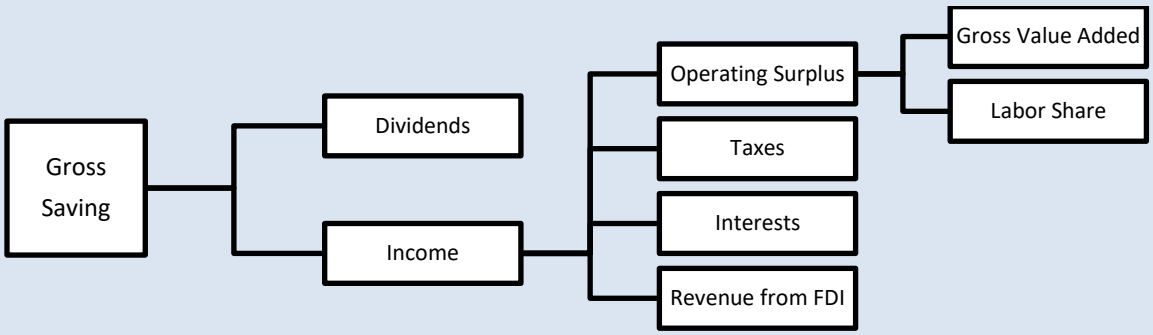
1) an increase in gross profits (both from domestic operations – operating surplus – and from real or financial investments abroad – revenue from foreign investment),

2) a decline in corporate income taxes (relative to GDP), which might be due, among other reason, to profit shifting:
   a. instead of rising proportionately with profits, tax payments have declined in almost all advanced economies shown,
   b. in Japan and Korea, where tax payments have increased, they did so by much less than corporate profits,

3) a decline in interest payments in almost every country,

4) a decrease in dividend payout (Germany, Italy), or an increase (Korea, Japan and US) that is much smaller than the increase in corporate income.

Box 1: **DECOMPOSITION OF GROSS SAVING**



In a simplified and stylised framework, gross saving can be defined as the income of a firm that is not distributed to shareholders, so as to determine whether the rise in firms' savings is driven by a rise in firms' incomes or by a fall in distributed dividends:

$$Gross\ Saving\ =\ Income\ -\ Dividends \tag{2}$$

Further decomposing the variable '*Income'* figuring in equation (2) allows to connect the dynamics of gross savings with the underlying trends in terms of gross operating surplus ('*Operating Surplus'*), corporate income taxes('*Taxes'*), interests payments ('*Interests'*), and net revenues from foreign investments ('*Foreign Investment'*):

$$\begin{aligned} Gross\ Saving\ =\ & Operating\ Surplus - Taxes \\ & - Interests\ - Foreign\ Investment - Dividends \end{aligned} \tag{3}$$

Dividing the gross operating surplus into its gross value added (*'Gross Value Added'*) and its labour share (*'Labour'*) component, equation (3) can be further specified as:

$$\begin{aligned} Gross\ Saving = & \ Gross\ Value\ Added\ -\ Labor\ -\ Taxes \\ & - Interest - Foreign\ Investment - \ Dividends \end{aligned} \tag{4}$$

The first factor, i.e. an increase in gross profits, can be further broken down. The increase in profitability can be related to a change in the labour share and gross value added (GVA) share of income. **Error! Reference source not found.**5 plots the change in operating surplus shares against the changes in the value added or labour share. It shows that higher operating surpluses have been accompanied by higher value added (left side panel) and lower labour share (right side panel). This goes in line with the findings of the recent literature (see for example Behringer, 2019; Akcigit and Ates, 2020) in which the decline in the labour share in recent years – and its other side of the coin, the increase in the profit share – have been associated to increasing market concentration and mark-ups and, in turn, lower business dynamism and investment.

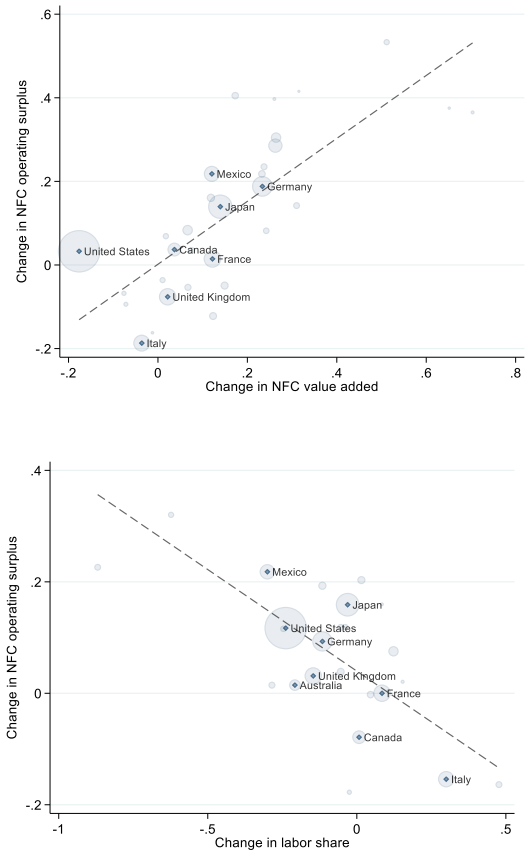
Globalisation-driven phenomena and operations of 'footloose' entities, such as multinational enterprises (MNEs) and/or Special Purpose Entities (SPEs), distort the external statistics of several countries. This distortion affects the current account (CA) and the net international investment position (NIIP).[7]

In brief, the positive trend observed in NFC net lending between 2009 and 2017, especially in Korea, Germany and Japan, has been driven by a combination of rising gross saving and falling investment. Among countries with the most significant increase in gross saving (e.g. Korea),

[7] See Di Nino et al. (2020) for additional analysis of the implications of multinational enterprises (MNEs) and financial centres on the external balance of the euro area, and European Commission (2020).

this trend was mostly driven by a rise in gross profitability - reflecting forces that give rise to the increased ability of firms to extract operating surpluses - accompanied by a fall in labour share. Besides gross profitability, rising operating surpluses have been supported by lower interest payments and by the taxes and dividends paid, which decreased in some countries and increased less than the rise in operating surpluses in other countries.

Figure 5: Changes in operating surplus vs. value added and labour shares



Source: OECD Sectoral National Accounts, IMF WEO, ILO, authors' own calculations.

Note: Changes are yearly averages, covering the period 1995-2017 for the top panel and 2004-2017 for the bottom panel. Units are in percent of GDP. Circle sizes are proportional to GDP in USD.

3. A microeconomic view on corporate net lending

The previous two sections have documented the trend in rising corporate net lending and its dominant sources. This section assesses how firms allocate the saving they have in excess of investment across different types of assets on their balance sheets and reviews firms' characteristics that are correlated with their balance sheet decisions. While at the aggregate level this excess in savings is referred to as "net lending", in this section, as a firm-level perspective is adopted, the term "excess saving" is used. As shown in **Error! Reference source not found.**6, firms can decide how to allocate the income they neither distribute to shareholders nor invest in physical capital – i.e. excess savings – into a combination of increase in equity buybacks net of issuances, debt repayment, and accumulation of cash and liquid assets.[8]

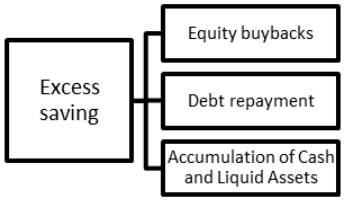
The accumulation of cash balances has been found to be the most salient use of firms' excess saving. Notably, Dao & Maggi (2018) have shown that between 1995 and 2014, cash ratios have increased for firms of all sizes in most countries and industries, with the exceptions of Japan — where cash holdings of the largest firms have somewhat decreased (from very high levels) — and Italy — where smaller and medium-size firms have shown some reduction in cash stocks as well.

Changes in the cash ratio (that is, cash as a percentage of total financial assets) have been strongly and positively associated with higher corporate excess saving in each of the countries under analysis, implying that firms that have been accumulating excess savings have boosted their cash holdings at the same time (Dao & Maggi, 2018). In addition, recent studies have shown that, although equity buybacks do represent a common use of corporate excess saving, they cannot account for the bulk of the rise in corporate net lending in OECD countries (e.g. Chen et al., 2017). Similarly, debt repayment cannot be the major driver of excess savings, given that the level of debt has increased in all countries, with the exception of Italy and Japan. Firms have not used their excess savings to pay back debt in a systematic way. Rather, data suggest that firms have been increasing both their overall financial assets and their debt, but they have been using their excess saving to increase their overall asset position more than increasing debt (Dao & Maggi, 2018).[9]

[8] Throughout this note, for simplicity, the term "cash" refers to very liquid assets, such as currency, deposits and short-term debt.

[9] As the relevant literature has already found that excess savings transform mainly in cash holdings while they do not influence much firms' decision of holding

Figure 6: Uses of excess saving by an individual firm



Source: Dao & Maggi (2018).

Given the strict relation between excess savings and cash holdings, the determinants of the latter can also explain most of the variation of the former within and across firms. The finance literature in particular has established a widely-used empirical framework to estimate drivers of corporate cash holding across firms, underpinned by various theoretical motives for cash holding, namely transaction, precautionary, agency, and tax motives (see e.g. Bates et al., 2009; Pinkowitz et al., 2016).

In brief, the transaction motive of cash holding states that firms with more volatile cash flows tend to hold more cash reserves to avoid having to sell other assets and incur in transaction costs. The precautionary motive of cash holding on the other hand predicts that firms facing more uncertainty from various sources should hold more cash for self-insurance. Firms with lower dividends can also have a higher cash ratio, consistent with the agency motive according to which differences in shareholder protection rights can influence the dividend pay-out ratio (Dittmar, Mahrt-Smith, & Servaes, 2003). Finally, according to the tax motive, firms residing in high corporate tax countries but having income abroad tend to keep higher cash ratios. This behaviour aims at avoiding repatriating and paying taxes in the home country under a worldwide corporate income tax system.

Looking at variations within firms, econometric research has provided consistent evidence that rising profits and asset sizes, lower effective tax rates and increasing spending on R&D are strongly correlated with higher corporate saving and cash holdings within firms. In other words, firms that save much more than they invest tend to be larger and more profitable, engage strongly in R&D, and have low effective tax rates as they are more likely to exploit complex international tax strategies.

In particular, the change in cash holdings is positively related to an increase in firms' size and R&D intensity, given that firms that expect to have higher R&D spending in the short to medium term increase their retained earnings ahead of time (Dao & Maggi, 2018). This relationship seems to be working in the same way across all major advanced economies (similar to findings in Pinkowitz et al., 2016). Digging deeper in the channels through which R&D affects cash and saving, there is an emerging literature that has proposed different hypotheses for why intangible capital (accumulated among others through innovation) can imply higher cash demand. For example, Falato, Kadyrzhanova & Sim (2013) argue that the lack of 'collateralisability' of intangible capital reduces external debt capacity of financially constrained firms, prompting higher cash holdings to finance future investment opportunities. The nature of intangible capital in terms of its financing profile or its 'capitalisability' can also have implications for cash holdings of the innovating firms (see Döttling, Ladika, & Perotti, 2018; Ma, Mello, & Wu, 2014). Furthermore, there is a rapidly evolving literature on the impact of globalisation on innovation activity (Adler, Ahn, & Dao, 2019; Adler et al., 2019; Autor, Dorn, Hanson, Pisano, & Shu, 2016) which shows that globalisation, by boosting incentives to engage in risk-enhancing innovation, can jointly raise innovation activity and cash holding particularly among export-oriented firms.

Equally, the fact that size is strongly correlated with excess saving rates and cash holding is consistent with the emerging evidence that profit shares have increased together with firms' size and industrial concentration (Autor, Dorn, Katz, Patterson, & Van Reenen, 2017; Barkai, 2020; Behringer, 2019; Behringer & van Treeck, 2018). This literature can explain why increased corporate profits and retained earnings can be sustained over a prolonged period by firms and not be contested by new entrants.

Summing up, some firm-level characteristics are found to be associated with rising saving rates and cash positions. Most notably, firms that register the strongest increase in both cash and savings also saw the largest gains in profitability

debt or equities, it is difficult to say that firms' excessive savings are due to a change in risk attitudes. If that was the case, there should have been a change also in firms' decision of holding debt or equities.

and R&D spending. At the same time, these firms limit dividend pay-out in favour of share buybacks and manage to reduce their effective tax rates. Microeconomic empirical evidence points to a number of potential causes for rising corporate saving and cash holdings, with technology, corporate governance, labour market institutions, access to credit, firms' market power and tax management strategies playing a role.

4. Evidence from country specific cases

This section focuses on the specific case of three G20 members, namely China, Germany and the US, to show how the sources and uses of net lending/net borrowing highlighted in the previous sections - using both an aggregate and firm-level point of view - have developed in these countries.

4.1 China

The net borrowing position in China and the fall in corporate saving levels after 2008 stand in contrast with the general net lending positions and upward savings trend among non-financial corporates documented for most of the other G20 countries (Figure 3). In the 1990s, China's corporate savings were relatively low and comparable to the global average. They surged in the early 2000s, to reach 24% of GDP in 2008 (Figure 3). Since then, Chinese corporate savings decreased while investment remained very high, leading China's corporate sector to a position of net borrowing and thus partially addressing global imbalances built up at the beginning of the 2000s.

The evolution of gross savings among Chinese NFCs can be related to two main factors. The first one is China's entry in the WTO that, coupled with changes in the valuation of the Chinese currency, has led to a significant increase in the gross corporate savings rate up to 2008; between 2005 and 2008 in particular, the undervaluation of the Renminbi contributed to an export boom and large corporate savings for the export-oriented private sector, driving the net borrowing position of the corporate sector well below 10% of GDP before the outbreak of the global financial crisis. The second factor derives from the structure of the Chinese economy. As shown by Zhang et al. (2018), state-owned enterprises (SOEs) have lower gross savings than private firms, due to a weaker average productivity not fully compensated by a lower average dividend payout ratio.[10] Indeed, Lam, Rodlauer, & Schipke (2017) have found that SOEs' average productivity is about 25 percent lower than that of private firms, while the average dividend payout ratio is only about 10 percentage points below that of private firms and the global average.

Looking at the future prospects for savings in China, corporate savings are likely to fall further due to lower capital returns and rising labour income shares. Corporate saving levels in China are now comparable to the rest of the world, but the Chinese national saving rate, accounting for all sectors (government, households and corporates), is one of the highest in the world. As corporate savings have decreased household savings have been moving upwards.[11] As a result, structural forces and policy support could lead to a continued decline in national savings-to-GDP ratio by 4.5 percentage points by 2022, and by close to 10 percentage points by 2030, although this would still remain higher than the average in advanced economies (Zhang et al., 2018). This could further contribute to redress the global imbalances accumulated over the last 20 years.

4.2 Germany

The difference between the saving and the investment of all sectors of the economy (i.e. the net lending of all domestic sectors) in Germany increased by more than 9 percentage points of GDP between 1999 and 2016. The largest contribution came from the NFC sector, so that the dynamics of the current account increase reflect a profound change in the net lending behaviour of companies located in Germany.

Important factors behind the increase in corporate net lending have been shocks in world demand that have boosted companies' profitability, similar to the export boom argument in the case for China (Schuknecht, 2014), and the sustained improvement in firms' competitiveness since the mid-1990s (OECD, 2007). More recent evidence suggests that wage moderation and financial frictions have also contributed to the rise in corporate savings (Klug, Mayer, & Schuler, 2019).

[10] Dividends as a share of profits.

[11] At 23 percent of GDP, today China's household savings are 15 percentage points higher than the global average and constitute the main drivers of higher national savings in China. This gap reflects a confluence of factors, ranging from demographic structure and developmental stage, to rising income inequality and housing affordability.

In Germany, the labour share sharply dropped from 2000 to 2008 from 63% to 57% (see Berger & Wolff, 2017). This decline in the labour share increased corporate saving as less funds were diverted from gross value added (see box 1 and Behringer, 2019). In turn, the increase in gross savings up to 2007 can be traced back to a fall in the compensation of employees (Ruscher & Wolff, 2013). The trend in Germany's labour share found several explanations[12], which support the findings of Redeker (2019) who argues that reduced union density and workers' bargaining power increase net corporate saving. This argument is also in line with the literature finding that countries with centralised wage bargaining tend to have surpluses (Manger and Sattler, 2019).

Frictions in the credit supply provided by the financial sector to corporates play a key role in explaining the rise in corporate saving in Germany. Indeed, as stated by the precautionary saving motive, following an adverse shock to the available amount of credit, corporates build a buffer stock of short-term assets and increase their savings. Klug et al. (2019) identified some of the shocks that had a positive effect on Germany's corporate saving, for example when corporates had to pay soaring risk premia during the Great Recession of 2008/09, reflecting a shortfall of available funds at low rates of interest (De Fiore & Uhlig, 2015). The firms' precautionary saving attitude could have been even amplified by the 2009 inheritance tax reform, which greatly increased the exemptions of business assets from the inheritance and gift tax (Houben and Maiterth, 2011; Hines et al., 2016).

Looking at the most recent years, the wage share of the economy recovered, reflecting real wage increases and continuing employment growth. On the other hand, profitability was dented by the growth slowdown and weak productivity developments. The corporate investment share of GDP continued increasing and the saving investment balance was close to zero in 2018 and negative in 2019, so that the net lending of corporates declined. It remains to be seen whether these trends will also continue in the future, especially in light of the massive transformation needs in Germany's leading industries and the medium-term impact the Covid-19 crisis may have on corporate investment.[13]

4.3 United States

The cyclical variations of US non-financial corporations' net lending/net borrowing (Figure 3) seem to mostly reflect changes in investment decisions (Lee, Shin, & Stulz, 2016). Still, the positive trend in gross saving is driven by two main factors. First, the rise of intangible capital which, by leading to higher cash holdings, has had a positive effect on saving levels in the US. Second, the increased concentration in all major sectors of the US economy, accompanied by rising market power and profitability of firms, has also led to rising corporate savings.

Over the last few decades there has been a dramatic shift away from physical capital investments (such as in the manufacturing sector) toward intangible capital in the US, notably since the 1980s (Corrado & Hulten, 2010; Corrado, Hulten, & Sichel, 2009), in computerised information and private R&D. The rising importance of intangibles has boosted firms' precautionary demand for cash with a view to ensuring sufficient liquidity for weathering adverse shocks and exploiting investment opportunities (Bates et al., 2009; Falato et al.; 2013; Döttling et al., 2018). As intangible capital cannot be easily verified or liquidated and, as such, cannot be pledged as collateral to raise debt financing, firms' need to accumulate internal funds grows when their intangible capital grows. This increase in cash holdings linked with higher intangible capital has translated into higher corporate savings (Behringer, 2019), partially crowding out investment in physical capital (Alexander & Eberly, 2018; Crouzet & Eberly, 2019; Döttling & Perotti, 2017; Gutiérrez & Philippon, 2016, 2017).

The rise in corporate saving in the US has equally coincided with an increase in the concentration of firms[14] (IMF, 2019a), which occurred alongside rising market power and

[12] First, while employment took off from 2006 onward, at the same time, labour unit costs plunged down by over 10 percentage points (Klug, Mayer, & Schuler, 2019). Second, the establishment of a global value chain and outsourcing, in particular in Eastern Europe, weakened trade unions' bargaining power (Dustmann, Fitzenberger, Schönberg, & Spitz-Oener, 2014). As a result, nominal and real wage growth in Germany has been remarkably lower from 1995 onward than in other countries (Berger & Wolff, 2017).

[13] See also IMF (2019c).

[14] See Autor, Dorn, Katz, Patterson, & Van Reenen (2017, 2019); Barkai (2020); Grullon, Larkin, & Michaely (2019) for evidence of rising concentration.

profitability of large firms (Federico, Romain, Callum, Carolina, & Chen, 2019).[15] In particular, the rise in market power has led to an increase in markups, increased industrial concentration (Autor et al., 2017; Barkai, 2020; Behringer, 2019; Behringer & van Treeck, 2018) and implied a decrease in the labour share (De Loecker, Eeckhout, & Unger, 2020; Behringer, 2019). Recent tax reforms may not address this problem, as they are mostly across-the-board tax cuts equally affecting firms (e.g. the Tax Cuts and Jobs Act of 2017) or more concentrated on households rather than firms' saving behaviours (2019 tax reform).

Larger firms have especially driven the within-firm rise in saving, with the top 1 percent (by size) showing the largest increases (Federico et al., 2019). This could be caused by the "financialisation" of companies, which may provide incentive structures at the management level to increase savings to do some share buybacks. This tendency could have been increased by the ownership of firms on the part of large institutional investors (e.g. investment funds), which have particular earnings targets leading firms to use buybacks to achieve those targets and have therefore more short-sighted objectives (Gutiérrez and Philippon, 2018). At the same time, rising corporate market power seems more reflective of a "winner-takes-most" pattern by more productive and innovative firms and of trends that make borrowing constraints less binding for larger firms[16] (Dao, Hanisch, Jones, & Li, 2020), pointing to the possible need of more pro-competition policies (See section 5)[17].

[15] See De Loecker & Eeckhout (2017); De Loecker, Eeckhout, & Unger (2020); Federico, Romain, Callum, Carolina, & Chen (2019) for evidence of rising markups.

[16] This possible factor, explored in Dao, Hanisch, Jones, & Li (2020), relates to the trend decline in global real interest rates (and corporate tax rates) over the past couple of decades. Given that larger firms are less financially constrained and able to leverage more, lower interest rates benefit them disproportionately. As a result, they are better able to exploit opportunities to invest in high-return projects (because, for example, of network effects or increasing returns to scale). When liquidity is constrained and firms must put away investment funds for future projects, larger firms save disproportionately more for these high-return projects (Federico et al., 2019).

[17] For more details see also Philippon (2018).

5. Conclusion and policy recommendations

This paper has documented the trend in rising corporate saving. This broad based trend appears to be of long-term nature and shows signs of reversal only in a very limited number of G20 member countries. The main drivers of these observed trends appear to be industrial concentration and rising market power of large firms (Autor, Dorn, Katz, Patterson, & Van Reenen, 2019; De Loecker & Eeckhout, 2017), an associated rise in corporate profits (Barkai, 2020), lower cost of capital (Chen et al., 2017; Dao, Das, Koczan, & Lian, 2017), increased incentives and ability for tax minimisation (Zucman, 2014), increasing share of intangible assets and spending on R&D (Dao et al., 2020).

While, in general, removing structural policy distortions is a desirable policy goal (Banerji et al., 2017), according to Philippon (2018), increased corporate saving is neither good nor bad per se. For example, during the current Covid-19-related crisis those companies that had built buffers through the accumulation of past profits (savings) are likely to be in a better position to face the crisis, increasing their resilience. Still, the consequences on the economy of excessive NFC savings, which do not translate into higher investments, may be undesirable and translate into lower actual and potential growth as witnessed over the last decades. For this reason, structural reforms have an important role to play to address the external imbalances caused by the trends in gross corporate saving highlighted above. In terms of policy actions, seven main types of actions could be explored:

1. **Address corporate market power** – The rise in corporate saving across advanced economies has coincided with an increase in the concentration of firms across industries. While the increase in concentration is more pronounced in the US than in Europe, the role of pro-competition policies in reducing corporates' net lending positions and driving current account trends deserves further investigation. Also, in China, an unbalanced net borrowing position for the NFC sector could be discouraged by curtailing subsidies to SOEs and redirecting this public spending towards the expansion of the social safety net, which could stimulate private consumption, investments by private

firms, and the overall domestic demand as final result (IMF, 2019b). Indeed, China has over one hundred central SOEs that, historically, have had quasi-monopoly positions in sectors such as energy, power, and telecommunications. Dividend payments from these centrally owned SOEs have been low, while larger dividends would directly reduce saving by SOEs and help the central government pay for a stronger social safety net or replace some worker contributions with employer contributions to the social security fund (Setser, 2016).

2. **Improve access to credit and financing** – Ensuring the financing for investment in innovative activities by improving access to credit (while ensuring the proper regulation of the financial sector) and facilitating access to market-based financing, can help firms decrease the amount of savings they hold for precautionary motives. Even if the trends that make borrowing constraints less binding may benefit large firms disproportionately and, as such, can lead to both rising corporate saving and concentration, increased access to credit and financing can be key in some countries and notably in those having a current account surplus. For example, alternative sources of finance, complementary to bank financing (e.g. capital markets, venture capital, crowdfunding and the asset management industry) are less widely used in the EU compared to other advanced economies. Fostering access to these sources of financing would be especially beneficial e.g. for SMEs, young and innovative firms. In the case of China, as SOEs contribute about 20 percent of GDP today but account for 50 percent of credit, by improving the access to financing of private firms the government could remove the "implicit guarantee" for SOEs and redirect credit to the private sector (Zhang et al., 2018). In turn, this may lower the costs of factor inputs (including capital), widen corporate ownership, and increase competition in the domestic market (IMF, 2010).

3. **Improve the business environment and increase investment** – Structural reforms to foster entrepreneurship, overcome investment barriers and incentivise R&D spending could ease firms' net lending positions by spurring investments. For instance, in Germany product market regulations tend to inhibit firms' entry. Removing hurdles to starting a business would help to foster investment in Germany and, through this channel, reduce the excessive savings accumulated by non-financial corporations. More generally, policies helping to transform savings into higher private investments would strengthen domestic demand and could be especially important in all countries having a current account surplus.

4. **Enhance the functioning of labour markets** – Labour shares have fallen across most advanced economies, and this seems a general trend not related to the individual current account position of a country. This shift in income from workers (with high marginal propensities to consume) to shareholders (with low marginal propensities to consume) depresses aggregate consumption, imports and raises corporate imbalances. However, the extent to which the decline in labour shares reflect technological progress or labour market institutions remains an open question. On the one hand, the erosion in job protection legislation may have partly contributed to a decline in labour shares. On the other hand, reduced union density and workers' bargaining power may increase net corporate saving. Section 4 suggests that some steps in this direction have already been taken in Germany, including through the introduction of a compulsory minimum wage in 2015 that put a floor on the decrease in compensations of employees.[18] As a general rule, effective collective bargaining with wide coverage or more flexibility of wages in both directions and throughout all sectors of the economy may help the adjustment and contribute to absorb

[18] The EU recently launched an initiative for a legal instrument to ensure that every worker has a fair minimum wage. For more information, see: https://ec.europa.eu/commission/presscorner/api/files/attachment/860459/Consultation_fair_minimum_wages.pdf.pdf

either too small or too large non-financial savings. If minimum wage changes are not directly linked to the wage paid in each sector of the economy, changes in public sector wages might be used as a signal to guide wage pressures in the overall economy, as their effect may spread across different income groups and more widely than changes in minimum wage alone.

5. **Foster intangible investments** – As limited possibilities for collateralisation of intangible capital reduces financing opportunities for firms, a proper system of accounting for investments in intangible capital could have implications for cash holdings of the innovating firms. This could make intangible capital more easily pledged as collateral to raise debt financing, reducing firms' need to accumulate internal funds when intangible capital grows.[19] As for the previous point, this consideration would apply to all economies, disregarding their current account position.

6. **Modernise tax systems**– Closing tax loopholes in national and international taxation may help to limit firms' tax optimising behaviours. In that respect, policy actions could be taken to ensure equal tax treatment of dividends and retained earnings – as this would discourage the retention of profits – and to limit other fiscal distortions. The OECD/G20 initiative for addressing the tax challenges of the digital economy may represent an important step in the right direction. In addition, reducing incentives for profit shifting and reducing taxes that hinder investment could lead to some strengthening of domestic demand and be envisaged in countries having high savings, low investment and fiscal space. While closing tax loopholes would be recommended for all G20 countries, strengthening domestic demand could be more relevant for countries having also a current account surplus.

7. **Improve external statistics** – As mentioned in section 2, the activities of multinationals, special purpose entities and other non-standard vehicles most certainly have an important role in moving funds. In these cases the available statistics might not fully reflect realities on the ground. There is also evidence of important misreporting in income accounts, causing asymmetries in the world current account. Improving external statistics and eliminating biases in reporting could help.

Summing up, the aforementioned policy actions could contribute to ensuring an appropriate level of the net lending position of the non-financial corporate sector by both reducing excessive saving and fostering higher investments. Close monitoring is important for these flows in order to ensure a sustainable equilibrium in the non-financial corporate sector.

[19] For more information, see: https://ec.europa.eu/info/sites/info/files/economy-finance/dp047_en.pdf https://www.ecb.europa.eu/pub/economic-bulletin/focus/2018/html/ecb.ebbox201807_03.en.html

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