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Indebtedness around the world: Is the sky the limit?

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Introduction

Even before the COVID-19 crisis, global debt was near record levels and steadily increasing. The sharp fall in economic activity triggered by the pandemic and the actions taken in response to it have caused a further, massive jump in global debt burdens. According to estimates by the Institute of International Finance, the combined debts of governments, non-financial corporations, the financial sector and households around the world stood at a dazzling $ 289 trillion at the end of the first quarter of 2021, or about 360 % of world GDP, some $ 30 trillion up from end-2019 (IIF, 2021).

This article describes the sky-high global debt mountain from a bird's eye view. We adopt a broad lens. Both public and non-financial corporate debt are discussed – as they account for the largest increases in nominal debt levels since the global financial crisis (GFC) – in advanced economies as well as major emerging economies. We concentrate on the debtors' perspective, i.e. the point of view of the indebted governments and companies, rather than on the creditors'/investors' side. Our discussion focuses on the post-GFC evolution of global debt, often framed within a longer-term, historical context. Special attention will be devoted to the impact of the COVID-19 crisis.

The article is structured as follows. Section 1 presents the main stylised facts and describes the current trends in public and corporate debt, with a separate box dedicated to the special case of China. As well as illustrating the record levels of global debt, we examine their underlying drivers, including the steady decline in interest rates and consequent strong search for yield. Section 2 then discusses the disadvantages and risks associated with high debt, based on a review of the relevant literature. We look at the relationship between public debt and economic growth, and debt sustainability concerns. We thereby pick up on the ongoing debate about the implications of a negative interest rate-growth differential (the so-called "r-g") for public debt dynamics and consider country differences in investor bases and debt tolerance. This section also addresses the risks associated with high corporate debt, including the link between high leverage and low private investment, and the misallocation of resources and low productivity growth. Section 3 considers the way forward, i.e. it details some of the different policy options that exist to reduce debt burdens or, at least, to keep them under control. For governments, these include so-called "heterodox" strategies such as public debt restructuring, generating surprise inflation or

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financial repression; none of which appear to offer a viable way out for advanced or major emerging economies. We argue that what is needed instead is a combination of more "orthodox" policies, where the optimal mix of crisis support, investment to boost potential growth, and fiscal consolidation depends on countries' fiscal space and the pace of their recovery from the COVID-19 crisis, as well as credible medium-term plans. For the containment of corporate debt problems, helpful policy tools comprise the use of flexible, state-contingent support measures in the acute phase of the crisis, reforms to corporate debt restructuring and insolvency procedures, and the promotion of equity financing. The final section wraps up our main findings and key policy recommendations.

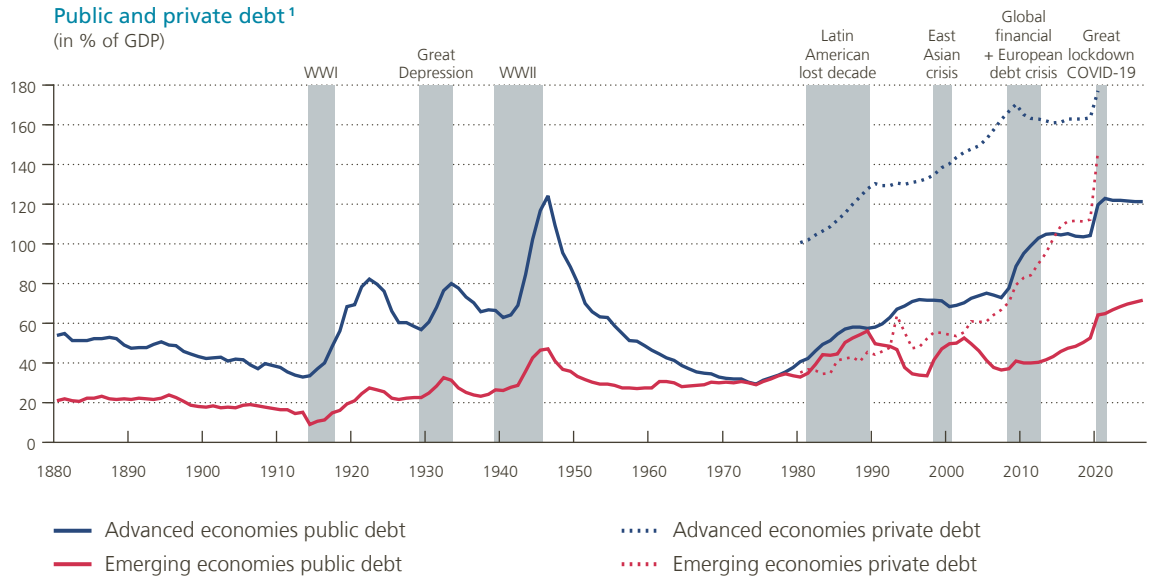
1. Stylised facts and trends

1.1 Record levels of global debt

A first important fact is that the ratios of public debt (of general governments) and private debt (of the non-financial corporate sector and households) to GDP are reaching historic highs, as illustrated in chart 1. This is the case in both advanced economies and emerging economies, even though on average debt ratios are higher in the first than in the latter country group, due to higher degrees of financial development and integration.

Chart 1

Public and private debt are reaching historic highs



Sources: IMF, BIS, Mbaye *et al.* (2018).

1 Advanced and emerging economy aggregates are based on samples of 25 and 27 countries, respectively, weighted by GDP in purchasing power parity terms. Public debt ratios beyond 2020 are IMF forecasts as of April 2021.

We notice that the current (weighted average) public debt ratio of advanced economies is very similar to that observed at the end of World War II. At that time, the strong and sturdy post-war decline in the public debt ratio

was the consequence of an exceptional combination of very fast economic growth fuelled by the reconstruction, persistently high inflation, and extensive financial repression[1] including international capital controls – which lasted well into the 1970s (Reinhart and Sbrancia, 2015; Eichengreen *et al.*, 2020). Other major jumps in the public debt ratio of advanced economies coincide with World War I, the Great Depression of the 1930s, the GFC and the ensuing European sovereign debt crisis, and finally the COVID-19 crisis and its "Great Lockdown" (IMF, 2020). Unlike World War II, these shocks and crises were followed (or are expected to be followed in the medium term, for the latter crisis) by much more modest (if any) debt reductions, and overall public debt has been on an upward trajectory since the mid-1970s.

The public debt ratio of emerging economies tends to follow a less steep path but is equally characterised by waves of debt accumulation (Kose, Nagle *et al.*, 2020). Here too, the largest debt jumps are associated with well-known crises, most notably the Latin American sovereign debt crisis of the 1980s (the so-called "lost decade"), the East Asian crisis (which followed a period of rapid corporate debt build-up), and again COVID-19.

Chart 1 also shows the enormous surge in private debt since the 1980s, interrupted only by short periods of deleveraging in recent, pre-COVID years. Moreover, the private indebtedness of emerging economies is catching up rapidly with that of advanced economies. Section 1.3 will delve deeper into these trends. Before that, we take a look at past and expected trends in public debt and its drivers.

1.2 Evolution and drivers of public debt

What explains the fast increase in public debt since the GFC, most apparent in advanced economies but also present in emerging economies? For selected countries, chart 2 shows the annual percentage point changes in the public debt ratio since 2006 and breaks down those changes into the respective contributions from the primary fiscal deficit, the difference between the real implicit interest rate on debt and real GDP growth (the famous "r-g" or snowball effect), and other factors (the "residual")[2]. Since advanced economies were at the epicentre of the GFC, not emerging economies, support packages and efforts to safeguard the stability of the financial system had a big impact on public debt in the former countries in 2008-2009. Thereafter, public debt levels remained, on aggregate, rather stable. The exact dynamics vary between countries but, on the whole, we see that no or hardly any fiscal buffers were rebuilt, in the form of debt reductions, before the COVID-19 crisis hit. There was often a beneficial impact of negative interest-growth differentials, leading to an automatic tempering of the debt ratio, but the inverse snowball effect was not always large enough to compensate for primary fiscal deficits. This is most apparent in the cases of France and the United States[3]. Even though China and Turkey experienced much faster GDP growth than advanced economies and felt a relatively small impact of interest payments (given their comparatively low initial public debt ratios), they too saw their debt ratios rise on account of growing primary deficits in recent years, as well as residual factors. The large positive residuals for China are largely explained by local government financing vehicles (see box 1 on China) which are not well captured in the country's primary deficit due to classification issues, especially not in earlier years. In Turkey, the residuals mostly represent the debt-augmenting effects of (severe) exchange rate depreciation, since a significant part of Turkish debt is denominated in US dollar and euro.

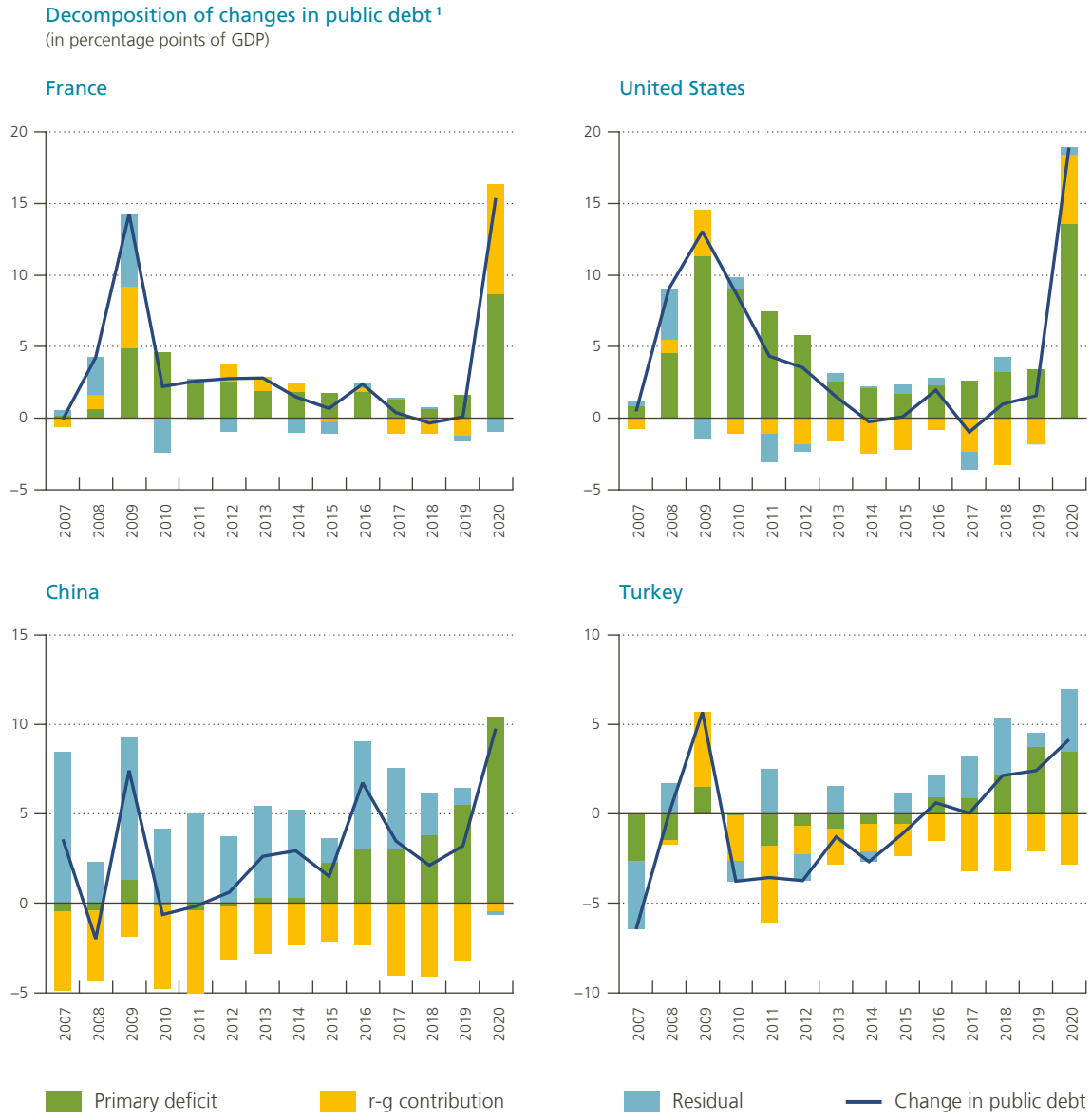
1 We will return to the concept of financial repression in section 3.1.1, where we discuss heterodox approaches to debt reduction.

2 This decomposition is based on the standard debt dynamics accounting identity, which can be written as $\Delta d_t = \frac{r_t - g_t}{1+g_t} d_{t-1} - pb_t + sfa_t$. *d* stands for the debt-stock-to-GDP ratio, *pb* for the primary fiscal balance (also relative to GDP) and *sfa* for the stock-flow adjustment, a residual factor capturing the difference between the debt-creating/reducing flows and the change in the debt stock. *r* is the implicit interest rate on public debt expressed in real terms, i.e. the ratio of the interest bill to the debt stock that was outstanding in the previous period, and *g* is real GDP growth.

3 These conclusions broadly hold for most other major advanced economies, with some notable exceptions (like Germany).

Chart 2

Post-GFC evolution of public debt: few signs that buffers were replenished



Source: IMF.

1 Decomposition is based on standard debt dynamics accounting identity (see footnote 2 in section 1.2 of main text).

Even if the relationship between interest rates and public debt is complex and may be influenced by third factors[1], the (very) low interest rate environment has undoubtedly facilitated the accumulation of debt by governments. As the left-hand panel of chart 3 shows, historically (especially in the post-war era) there is a negative correlation between the level of nominal long-term market interest rates (sovereign bond yields) and public debt ratios in advanced economies. The current record-low public borrowing costs in advanced

1 For example, Mian *et al.* (2021) present a framework showing how rising income inequality and financial sector deregulation can push economies into a low rate-high debt environment.

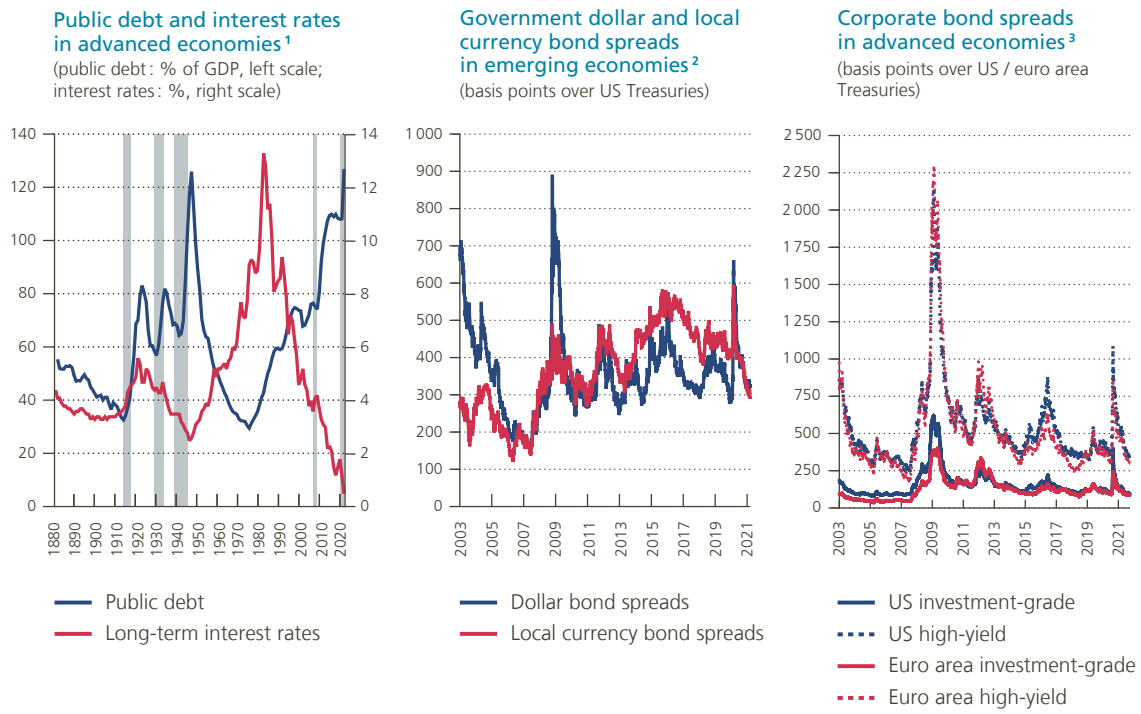
economies are partly the result of sustained low policy rates and asset purchase programmes of central banks, whose policies are in turn (as per their mandates) a reaction to the persistently low natural or equilibrium interest rate also known as "r-star" (i.e., the interest rate consistent with an economy operating at full output potential and stable inflation; see Holston *et al.*, 2017). While the exact factors underlying the global decline in r-star to its current low levels are still being debated, most experts point to structural forces boosting savings and/or curbing investment. The most-cited forces include population ageing in Western countries and East Asia (which increases saving for retirement); flagging productivity growth (which discourages investment); increased risk aversion and demand for safe assets (which leads to more precautionary saving), reinforced by the GFC; and a worsening of income inequality in many countries (given that wealthier people have a higher propensity to save) (see, for example, Bean *et al.*, 2015; De Backer and Wauters, 2017; Brand *et al.*, 2018)[1]. Thanks to low market interest rates, the average advanced economy government saw its interest bill as a percentage of GDP decline from 2.6 % in 2007 to 2.0 % in 2020, while its public debt ratio rose from 71 % to 120 % over the same period (IMF, 2021a).

Most major emerging economy governments have also taken advantage of the low interest rate environment to issue more debt. Even though spreads (over advanced economy government paper like US Treasuries) on dollar

1 See Borio *et al.* (2017) for a contrarian view, assigning more weight to the role of monetary policy in driving real interest rates over longer horizons.

Chart 3

Low market interest rates and spreads have facilitated global debt accumulation



Sources: IMF, JPMorgan, Bank of America-Merrill Lynch, Refinitiv.

1 Advanced economy aggregate is based on sample of 20 countries, weighted by GDP in purchasing power parity terms.

2 Dollar bond spreads are JPMorgan EMBI Global stripped spreads, and local currency bond spreads are spreads based on JPMorgan GBI-EM Traded Index.

3 Corporate bond spreads are option-adjusted spreads based on ICE BofA fixed income indices.

and local currency bonds of emerging country governments can be quite volatile, the middle panel of chart 3 indicates that, on average, there have been no major surges in spreads since the GFC, with the exception of the short-lived spike during the first few months of the COVID-19 pandemic. This implies that average government borrowing costs in emerging economies, which are the sum of (downward trending) advanced economy government interest rates and spreads (moving sideways), have declined too. The average emerging economy government faced about the same interest expenses in 2020 (2.1 % of GDP) as it did in 2007 (2.3 %), despite the significantly larger debt ratio (64 % compared to 36 %) (IMF, 2021a). Of course, there are large differences between individual emerging economies in this respect.

As far as the impact of the COVID-19 crisis is concerned, IMF (2021a) figures reveal that the 16 and 10 percentage point jumps in public debt ratios between 2019 and 2020 in advanced and emerging economies, respectively, are the result of both massive fiscal support (especially in advanced economies) and severe output drops. As of mid-March 2021, advanced and emerging economies had announced COVID-19 support measures – for implementation in 2020, 2021 and beyond – representing an estimated $ 10 trillion in additional spending and foregone revenues (IMF, 2021b). This support amounted to about 16 % (4 %) of 2020 GDP in advanced (emerging) economies.

As chart 1 shows, public debt ratios are not expected to revert back to their pre-COVID levels any time soon, according to the latest medium-term projections[1]. For advanced economies, it is projected that the overall public debt ratio will stabilise close to the current record levels, as growth recovers and fiscal support measures are gradually unwound. This masks some heterogeneity, however : the public debt stock of the United States will likely rise even further due to newly announced fiscal packages by the Biden Administration[2], whereas that of the euro area is deemed to slowly diminish over the coming years (IMF, 2021a), in part because of the phasing out of crisis support measures. The public debt ratio of the emerging economies group is estimated to remain on an upward trajectory over the medium term, mostly on account of relatively moderate fiscal adjustments in the average country, a trend that is strongly driven by China. In addition, the fiscal outlook is subject to the risk that certain "contingent liabilities" from liquidity support measures, such as the huge state guarantees provided by several advanced and major emerging economy governments on bank loans, eventually materialise and end up on governments' balance sheets[3]. Moreover, in the longer run, most advanced and several emerging economies can expect additional fiscal pressures from population ageing (European Commission, 2021 ; Guillemette and Turner, 2021).

1.3 Evolution and drivers of corporate debt

As mentioned above, not only public but also private debt ratios, again expressed in percentages of GDP, have recently peaked at record levels. Looking at the two categories of private non-financial debt, namely household and non-financial corporate debt, it appears that the latter recently surpassed GDP levels both in advanced and emerging economies (see chart 4, left-hand panel). Besides public debt, non-financial corporate debt was also the largest contributor to the strong increase in global debt in recent years.

Although household debt too grew continuously in emerging economies since the GFC, its outstanding stock remains much smaller than non-financial corporate debt. In advanced economies, a significant deleveraging process took place on households' balance sheets in the aftermath of the GFC. This is not surprising, as

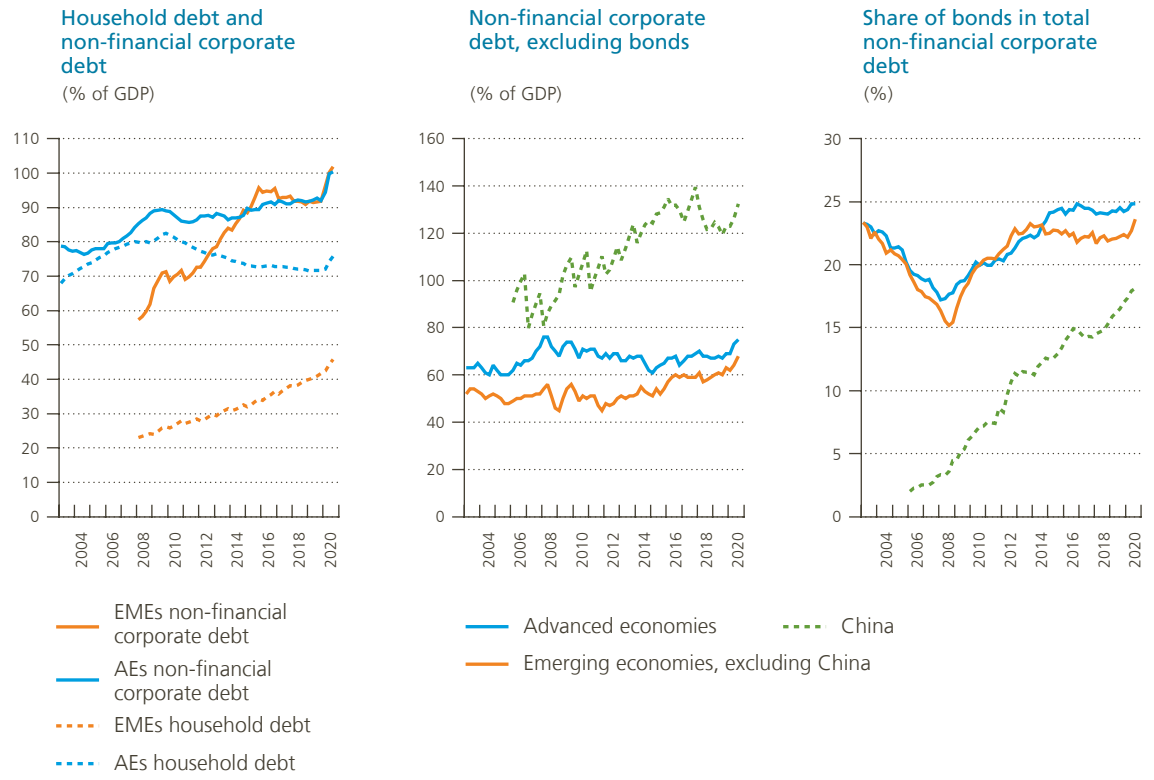
1 Estefania Flores *et al.* (2021) point out that medium-term public debt forecasts by the IMF and the private sector have systematically underestimated the actual evolution of debt, both in advanced economies (when the forecast horizon includes recessions) and in emerging economies (irrespective of the occurrence of recessions).

2 These fiscal packages are the American Rescue Plan ($ 1.9 trillion), the American Jobs Plan ($ 2.3 trillion), and the American Families Plan ($ 1.8 trillion). The latter two plans will be partly funded by higher taxes.

3 As of mid-March 2021, advanced and emerging economies' pandemic-related contingent liabilities (guarantees plus quasi-fiscal operations) were estimated by the IMF (2021b) at another $ 5.7 trillion. There are nevertheless large country differences in the extent to which these announced measures have actually been taken up, and these differences are mostly explained by the demand for liquidity by firms in the respective countries (in turn linked to countries' output losses during the COVID-19 crisis). For example, at the end of 2020, in Germany, only 9 % of the announced € 550 billion envelope of government-backed credit support programmes had been used, compared to 43 % of the € 300 billion envelope in France, 42 % of € 350 billion in Italy and 63 % of € 184 billion in Spain (Anderson *et al.*, 2021).

Chart 4

Recent growth in non-financial corporate debt mainly due to bond issuance and credit boom in China [1]



Source: BIS.

1 In the left-hand panel, advanced economies include the euro area and 10 other countries. Emerging market economies comprise 21 countries. The selection of countries included in the advanced and emerging economy aggregates differs in the middle and right-hand panels due to data availability. The aggregates in the left-hand panel are weighted by GDP in purchasing power parity terms; in the other panels, the aggregates are weighted by GDP based on market exchange rates.

household debt was at the very epicentre of the crisis. When the sub-prime housing bubble burst in the United States, it trickled down to other advanced economies where imbalances in housing markets were also abruptly corrected, leading to strong deleveraging of households. For those reasons, this part of the article focuses on non-financial corporate debt, both in advanced and emerging economies.

In advanced economies, the GFC was a turning point for non-financial corporate debt and, in its wake, debt only grew modestly from 2011 onwards. Debt in emerging economies on the other hand continued to grow strongly until the beginning of 2016, with a nearly 40 percentage point of GDP increase between 2008 and 2016, even surpassing debt ratios in advanced economies. The number of emerging economies' non-financial corporations raising debt also increased steeply after the GFC (a 5.5-fold rise between 2007 and 2016 according to Abraham *et al.*, 2020). Between 2016 and the beginning of 2020, some deleveraging took place in emerging economies, mainly in Chinese industrial sectors after 2018.

Already before the outbreak of COVID-19, several multilateral institutions warned for the risks associated with high firm indebtedness (Çelik *et al.*, 2019; IMF, 2019). They cautioned that the rising non-financial corporate debt levels could pose threats to financial stability, trigger or aggravate financial crises, and impair growth. COVID-19 has further exacerbated those already high debt ratios, triggering increases of respectively 8 and 10 percentage points of GDP in advanced and emerging economies since the end of 2019. In part, these large

increases can be explained by the sharp drop in the denominator (GDP) due to the economic downturn caused by the pandemic, but non-financial companies also took on more debt. Moreover, in the euro area, reliance on debt seems to have increased more for already highly-leveraged firms (ECB, 2021). Consequently, the current situation with very highly indebted non-financial companies remains surrounded by risks, which will be discussed in more detail in section 2.

Looking more closely to the composition of the strong increase in corporate debt, it appears that the post-GFC increase can mainly be attributed to a generally strong expansion in corporate bond issuance as well as a credit boom in China. Between 2008 and 2020, the share of bonds in total non-financial corporate debt increased significantly in both emerging and advanced economies. Without bond securities, the growth of the ratio of non-financial corporate debt to GDP would have been flat in advanced economies and would have increased only slightly in emerging economies (excluding China) (see chart 4, middle panel).

China's credit boom was responsible for most of emerging economies' corporate debt accumulation over the period studied. The policy response after the GFC led to a strong credit expansion there, through banks, shadow banks[1], and rapidly developing bond markets. In China, the growth of credit (particularly to state-owned enterprises and local investment vehicles) also played a significant role in explaining the growth of total debt, as it rose steeply to around 140 % of GDP in 2017. From 2018 onwards, excess capacity in sectors such as coal and steel was reduced (via restructuring operations and the liquidation of unprofitable companies in these sectors). Besides the strong increase in bank credit since 2008, the share of bonds in total non-financial corporate debt also increased enormously in China (from 2 % in 2006 to 18 % in 2020) (see chart 4, right-hand panel). The specific situation of China's corporate indebtedness is discussed in more detail in box 1.

1 In China, the shadow banking sector exists of both *banks' shadow*, i.e. bank activities that provide credit through money creation, but which circumvent regulatory restrictions and lending constraints by adopting non-standard accounting measures, and *shadow banks*, i.e. non-bank financial intermediaries that create credit through money transfer (see Sun, 2019).

BOX 1

What has driven the rise in China's corporate indebtedness?

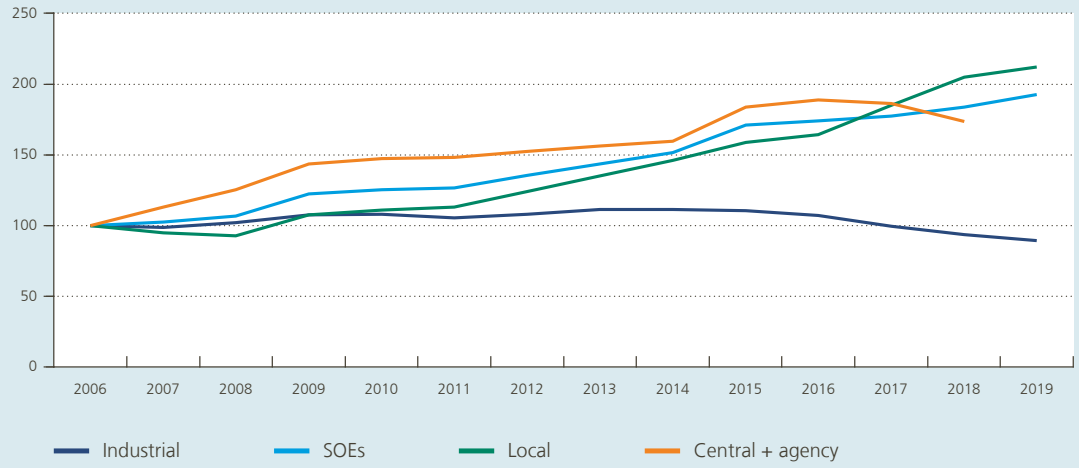
China's state-owned enterprises (SOEs) have contributed significantly to the build-up in corporate debt, with their debt-to-GDP ratio nearly doubling between 2006 and 2019 (see chart below). While the share of SOEs in the Chinese economy has declined continuously since 1978, they remain present in nearly every sector and are often dominant in sectors of strategic importance. They also account for most of China's corporate debt because they are perceived to be less risky compared to private firms and enjoy easier access to borrowing as a result. While no official statistics on the share of SOE debt in corporate debt have been published, two studies have estimated it at 63 % and 82 %, respectively, using different sources[1] (Molnar and Lu, 2019; Lam *et al.*, 2017). According to the OECD, the debt accumulation was concentrated in SOEs in the non-industrial sector (social services, transport and warehousing, real estate and construction) and SOEs owned by the local government (OECD, 2021a).

1 Molnar and Lu (2019) use data on all industrial firms provided by China's Ministry of Finance, whereas Lam *et al.* (2017) use data taken from the Chinese Wind database on all listed firms. Both estimates include the local government financing vehicles.

SOEs were also major actors in the implementation of China's RMB 4 trillion (or 14 % of GDP) fiscal spending plan of 2009 and 2010, which focused on infrastructure investment. They contracted most of the debts needed to finance such infrastructure projects. As the Chinese statistical classification assigns all SOEs to the corporate sector, the cost of the fiscal stimulus was reflected in sharply rising corporate debt instead of government debt, the latter remaining relatively low at around 40 % of GDP. In the case of the local government, which was responsible for three-quarters of the fiscal stimulus, new local SOEs were created to circumvent the strict legal prohibition (until 2014) on direct local government borrowing as specified in the 1994 Budget Law. This practice was sanctioned by the central government in its response to the GFC. These entities, better known as local government financing vehicles (LGFVs), receive capital, land or other public resources from their sponsoring local government and raise the required funding for public investment projects through bank loans and bond issuance, often with an implicit guarantee from the local government. The system of LGFVs illustrates that the boundary between the government and corporate sector debt is hard to draw in China.

Chinese state-owned enterprise debt by type [1]

(in % of GDP, converted to indices, 2006 = 100)



Source : OECD.

1 "SOEs" refer to non-financial enterprises and are defined as entirely state-owned firms and all firms with a controlling stake by the state in the form of an absolute or relative majority (Molnar and Lu, 2019). "Central" refers to SOEs represented by the State-owned Assets Supervision and Administration Commission (SASAC) or the Ministry of Finance including on behalf of the State Council. "Agency" refers to SOEs under direct control of central government agencies. "Local" refers to SOEs belonging to the local government level, including LGFVs. "Industrial" refers to SOEs in mining, manufacturing and utilities with sales of RMB 20 million or more.

When the fiscal stimulus ended in 2011, local governments were keen to continue using their LGFVs to channel financial resources toward favoured SOEs and private firms, with the hope of maintaining strong investment-led growth at the local level. As a result, LGFVs continued to build up debts. Alarmed by this trend, the central government introduced significant budget reforms in 2014 along with new restrictions on the use of LGFVs, but these measures proved unsuccessful in halting LGFV borrowing. Instead, they

induced the gradual transformation of LGFVs into special or designated investment platforms with more diversified asset portfolios, only 20 % of which flows to companies active in public services. The outcome has been a mixed success. While a certain degree of diversification can be a blessing for local economic growth, over-diversification is a curse (Fan *et al.*, 2021).

As Chinese monetary policy became less accommodative after 2010, many LGFVs that had initially borrowed heavily from banks came under refinancing pressures and were increasingly forced to rely on shadow bank loans and bond markets to roll over their debt and fund new investment (Chen *et al.*, 2020). This led to a deepening of the bond markets and an exponential take-off in shadow banking. These developments were moreover facilitated by earlier financial market deregulation, allowing for a broader range of financing instruments. Shadow banking also catered to the financial needs of real estate companies and less privileged – often smaller or more risky – private companies. All of this contributed to a further increase in corporate indebtedness, mirrored by ever-rising investment spending. In fact, the investment rate in China reached a peak of 46 % of GDP in 2014, which is very high by both China's standards and international comparison (Buysse *et al.*, 2018). Subsequent efforts to cut back on investment had the strongest impact on industrial sectors with substantial excess capacities, such as steel and coal, which saw some deleveraging.

A last factor that helps explain the rapid build-up of corporate debt in China is its low share of internally funded capital expenditure compared to other countries, possibly due to the combination of poor corporate earnings and aggressive capital investment (Ma, 2019).

What drove the strong increase in corporate bond issuance after the GFC ? Several factors can be identified, including tighter bank regulations, regulatory initiatives stimulating the use of bonds as a source of long-term funding, and very accommodative monetary policy in advanced economies.

In the wake of the GFC, many countries implemented stricter bank regulations to contain financial risks. These more stringent regulatory requirements (such as the Basel III standards) undoubtedly increased financial stability and the resilience of the financial system but also led banks to reduce leverage and become more prudent in their lending activities, particularly towards emerging economy borrowers (which carry more risk on average). These developments raised corporations' cost of bank loans, ultimately resulting in higher lending spreads compared to bond issuance and lower lending volumes (Abraham *et al.*, 2020, Slovik and Cournède, 2011 ; Noss and Toffano, 2016 ; Adrian *et al.*, 2017 ; Roulet, 2018).

At the same time, as mentioned above, accommodative monetary policy in advanced economies fuelled global investors' risk appetite. The very low interest rates after the GFC, combined with large asset purchase programmes (quantitative easing) by central banks in advanced economies, drove investors' search for yield. This search for yield reduced corporate bond spreads, even for high-yield firms, to very low levels (see chart 3, right-hand panel). Investors turned away from so-called safe assets in advanced economies towards riskier non-financial corporations' and emerging economy sovereign bonds. Following these developments, corporate bond issuance soared, particularly of large-denomination bonds (Burger *et al.* 2018). De Santis and Zaghini (2019) find a significant increase in the issuance of euro-denominated bonds of around 14 % as a consequence of the ECB's corporate sector purchase programme (CSPP). Lo Duca *et al.* (2014) show that US quantitative easing policies had a large impact on corporate bond issuance, particularly in emerging economies, and that

portfolio rebalancing effects were the main transmission channel. The implementation of quantitative easing programmes in several emerging economies in response to the COVID-19 crisis is likely to have further amplified these effects.

According to the traditional monetary policy transmission mechanism, lower interest rates should have also helped to make access to bank loans easier for businesses. Research by Alter and Elekdag (2020), for example, shows that a 1 percentage point reduction in the US Federal Reserve's policy rate seems to increase total (bank-based and bond debt) leverage in EME firms by 9 basis points. Similar research by the IMF shows that a one-unit relaxation of financial conditions[1] is followed by a (non-linear) increase in non-financial corporate debt of 4 percentage points of GDP over three years; this association becomes stronger in times of high credit growth and already loose financial conditions. The effects reported are broadly similar across advanced and emerging economies, though in the latter case, non-financial corporate leverage appears to react more strongly to financial conditions (IMF, 2021c).

However, the increase in bond issuance appears to have played a more important role than the increase in bank lending in explaining the rise in corporate debt. One reason could be that the effectiveness of the transmission mechanism has been somewhat hampered by the environment of very low interest rates (Borio and Gambacorta, 2017) and that the effect of regulatory changes, as mentioned above, has counterbalanced the positive effect of very low interest rates on the provision of bank credit (Hogan, 2019).

There is also evidence that speculative investment opportunities, such as carry trade, have fuelled bond issuance by non-financial corporations in emerging economies. In a carry trade, firms aim to profit from interest rate differentials in different markets by borrowing in a market where interest rates are low and then investing the proceeds in local bank deposits, shadow banking and/or other financial instruments in higher-interest rate markets (Bruno and Shin, 2016).

After the GFC, many firms seem to have used bond issuance to finance riskier activities, for which they would have less likely obtained bank credit (or at a higher cost). An increasing share of bond issuance was used for share buybacks, dividend payouts and mergers and acquisitions (M&A), particularly in the US (IMF, 2019; 2021c). Between 2015 and 2019, bonds used for payouts accounted for an average of 14 % of total investment grade issuance. A similar trend could be seen in the non-investment grade bond category, albeit at a somewhat lower level (11 % of total issuance) (Çelik *et al.*, 2020). When the COVID-19 crisis broke out, the search for liquidity also played a role in explaining the further rise in corporate debt. In the first phase of the crisis, which was characterised by extreme precaution and heightened aggregate risk, firms mostly drew down bank credit lines to raise cash levels. In the second phase, which followed the adoption of fiscal and monetary stabilisation policies, only the highest-rated firms switched to capital markets to raise cash (Acharya and Steffen, 2020). Once markets had stabilised, issuance also returned on a broader scale and for different motives. For example, since the third quarter of 2020, a strong rebound in corporate bond issuance backing M&A activity and leveraged buyouts has been visible in the data (IMF, 2021d).

Corporate bond issuance has also been supported by regulatory initiatives in many economies aimed at stimulating the use of corporate bonds as a viable source of long-term funding for non-financial corporations and an attractive asset class for investors. This has particularly been the case in emerging economies. Many of the measures taken have focused on improving access to primary markets by simplifying issuance regulations and reducing the costs and time involved in raising capital through bonds (IOSCO, 2011).

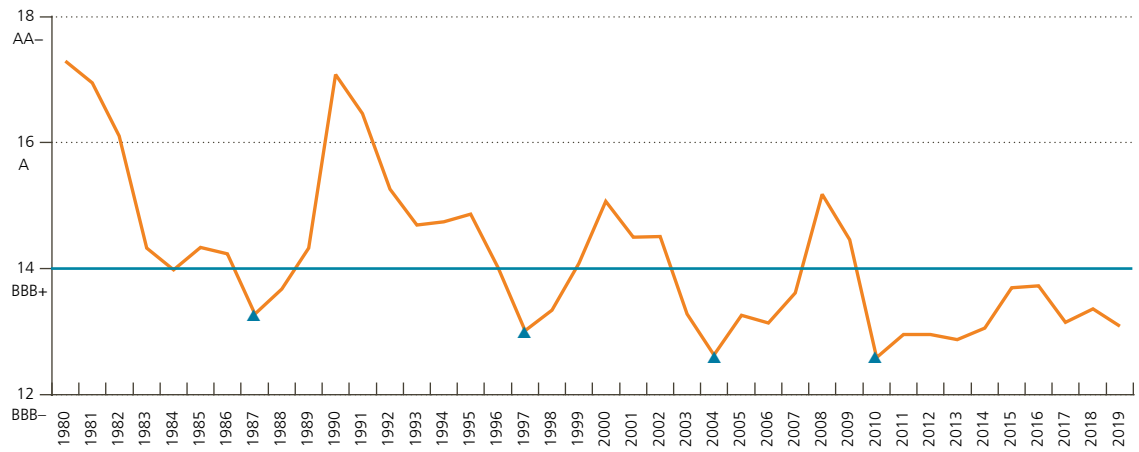
While the increase in bond issuance has led to more diversification in firms' sources of financing, the data shows that, in general, the quality of corporate bonds has been trending downwards for a long time (Çelik *et al.*, 2019; 2020, Lund *et al.*, 2018).

1 A one-unit decline in the financial conditions index is comparable to the average loosening in financial conditions observed across the economies in the sample between the end of 2020Q1 and 2020Q4.

Chart 5

The quality of corporate bonds issued had been declining long before COVID-19 [1]

(global corporate bond rating index)



Source: OECD.

1 The index assigns a score of 1 to a bond if it has the lowest credit quality rating and 21 if it has the highest rating. The corporate bond rating index is then calculated by taking a weighted average of individual bond scores, using issue amounts as weights.

The OECD constructed an index to provide a measure of overall bond quality rating. As shown in chart 5, this index displays a clear downward trend in the average rating of issued bonds since 1980. Moreover, the average corporate bond issued has been below BBB+ rating for nearly a decade, which is the longest period with a below-BBB+ rating since 1980. In all other credit cycles, the turning points, after which a deleveraging process took place, occurred much sooner.

Another commonly used measure of issuer quality is the share of non-investment grade issuance relative to total corporate bond issuance (Greenwood and Hanson, 2013; Çelik *et al.*, 2020). The share of non-investment grade issuance remained above 20 % in nearly every year since 2010 and was as high as 25 % in 2019. This was the longest period since 1980 that the portion of non-investment-grade issuance remained this high before there was a significant decline and default rates rose (Çelik *et al.*, 2020). In the first few months of the pandemic in early 2020, there was a temporary increase in investment-grade issuance, as investors turned back to safer assets, but issuance returned to earlier trends by the end of the summer of 2020.

Within investment and non-investment grade categories, changes have also taken place, with an increasing share of BBB-rated bonds (the lowest rating for investment-grade bonds) being issued in the investment-grade category. In 2019, their share accounted for slightly over half of all investment-grade issuance, compared to 39 % on average during the period 2000-2007. On the other hand, credit quality has shifted in the opposite direction in the non-investment-grade category, with 59 % of issuance accounted for by BB-rated bonds (the highest rating for non-investment grade bonds), compared to 35 % on average in the period 2000-2007. This may be partly attributable to the fact that, in recent years, some issuers with below-BB ratings have left the bond market for the leveraged loan [1] market (Çelik *et al.*, 2020).

This increased issuance of BBB-rated bonds, non-investment-grade bonds and bonds from emerging economy corporations has led to a situation where lower credit quality bonds now make up the bulk of the global

1 There is no fixed set of rules or official criteria to define a leveraged loan, but it is generally a type of loan that is extended to companies or individuals that already have considerable debt or poor credit history, making them more likely to default.

outstanding stock of bonds. As institutional investors are often bound or restricted by investment mandates, regulations and policies to only hold investment-grade bonds, extensive downgrades of BBB-rated bonds as a consequence of the current crisis could lead to significant sell-offs, putting corporate bond markets under stress. The long-term decline in bond quality, combined with the problems caused by the COVID-19 pandemic, thus carries risks and may result in higher default rates than in previous credit cycles.

2. Risks of high debt

2.1 The risks associated with high public debt

2.1.1 Public debt and economic growth

In the literature on the relationship between public debt and economic growth, an influential theory is that of public debt overhang (Reinhart *et al.*, 2012): high public debt ultimately leads to lower economic growth since investable funds are redirected from private initiatives towards financing the government, and/or because of the distortive tax (or other) policies that need to be implemented to be able to repay the debt later (which further undermines private investment). Although the overhang theory does certainly not apply under all circumstances, there is indeed empirical evidence at the sectoral and firm level, for both advanced and emerging economies, which suggests that public debt crowds out corporate investment by tightening credit constraints (Huang *et al.*, 2018; 2020).

Another prominent argument linking high public debt to lower growth posits that a government carrying a high debt load may be constrained in conducting countercyclical policies and responding to future shocks, such as financial crises, natural disasters or a pandemic (Yared, 2019). The absence of policy room leads to more volatile and, in the longer run, lower economic output; hence the need to "keep the powder dry" (Obstfeld, 2013) and build buffers during economically more advantageous times. For a sample of 30 OECD countries over the 1980-2017 period, Romer and Romer (2019) demonstrate that those countries with lower public debt ratios responded to financial distress with much more expansionary fiscal policy and suffered significantly less severe aftermaths, both because of fewer problems with market access and policy-makers' deliberate policy choices on the fiscal stance.

If we look at countries' fiscal policy responses during the COVID-19 crisis, however, we notice that even advanced economies with high public debt appear not to have been hindered in their use of large fiscal support measures[1]. Of course, the exceptionally large fiscal response to COVID-19 was heavily supported by a further easing in the monetary policies conducted by advanced economy central banks, which kept borrowing costs down and hence safeguarded fiscal space[2] (see Cornille *et al.*, 2021 in this issue of the Economic Review). Moreover, since the start of the crisis, European countries have enjoyed fiscal support (or the prospect thereof) from several EU initiatives, such as SURE, Next Generation EU and adaptations to the EU longer-term budget[3]. While there may be no simple relationship between countries' public debt ratio and the size of their COVID-19

1 The observation that emerging economies' fiscal responses have been much more tepid may derive from their higher "debt intolerance" (see section 2.1.3), i.e. a country like Argentina had much lower fiscal space to fight the COVID-19 crisis than say Spain, despite having a similar public debt ratio.

2 Throughout this article, we use the term "fiscal space" as defined by Heller (2005): "the room in a government´s budget that allows it to provide resources for a desired purpose without jeopardising the sustainability of its financial position or the stability of the economy". Similarly, fiscal space can be seen as the difference between the current public debt ratio and some estimated "debt limit" beyond which fiscal solvency is in doubt, i.e. beyond which market access would be lost, the government is unable to rollover its debt, and could ultimately default (Ghosh *et al.*, 2013; see section 2.1.2).

3 The temporary Support to mitigate Unemployment Risks in an Emergency (SURE) is a € 100 billion instrument set up in May 2020 to provide loans to EU Member States to address sudden increases in public expenditure for the preservation of employment. Next Generation EU is the EU's front-loaded € 750 billion COVID-19 recovery package (€ 390 billion of which is available as grants) conceived in July 2020. At the core of Next Generation EU is the € 672.5 billion Recovery and Resilience Facility (RFF) aimed at helping Member States address the economic and social impact of the COVID-19 pandemic, while ensuring that their economies undertake green and digital transitions. In order to receive RFF support, EU countries are asked to set out a coherent package of projects, reforms and investment until 2026.

fiscal stimulus, Apeti *et al.* (2021) find that governments with lower pre-COVID debt-to-tax ratios or higher sovereign credit ratings (two alternative measures of fiscal space) did implement larger fiscal support packages, especially so in advanced economies.

More generally, empirical studies tend to find a negative correlation between public debt ratios and economic growth. But because of their two-way relationship (as slow growth pushes up the public-debt-to-GDP ratio by definition), the abundance of possible confounding variables giving rise to the observed negative association, and likely non-linearities, it is far from straightforward to establish clear causality from higher public debt to lower growth (see Panizza and Presbitero, 2013 for a survey). Today, most experts tend to agree that there is no universal threshold, common for all countries (or even just for all advanced economies), beyond which public debt has an unambiguously negative impact on growth. This stands in contrast to the 90 %-of-GDP public debt threshold that has often been advanced by policy-makers, based on a highly influential paper by Reinhart and Rogoff (2010)[1]. Rather, if there is actually a non-linear relationship between public debt and growth, it varies from country to country (Eberhardt and Presbitero, 2015). Moreover, recent studies indicate that the trajectory over time of the public debt ratio may be more important for growth than the level of the public debt ratio itself (Pescatori *et al.*, 2014; Chudik *et al.*, 2017).

Chart 6 illustrates the absence of a "magic" public debt threshold with respect to growth. Each dot represents one data point, i.e. the public debt ratio of a specific country in a specific year between 1980 and 2019 and the associated real economic growth of that country in that year (expressed as the deviation from the country-specific period mean of GDP). The result is a highly scattered cloud of data points. While there may be an overall negative debt-growth relationship at extreme levels of public debt, the country-specific correlations are very heterogeneous and no universal threshold or turning point is observed[2].

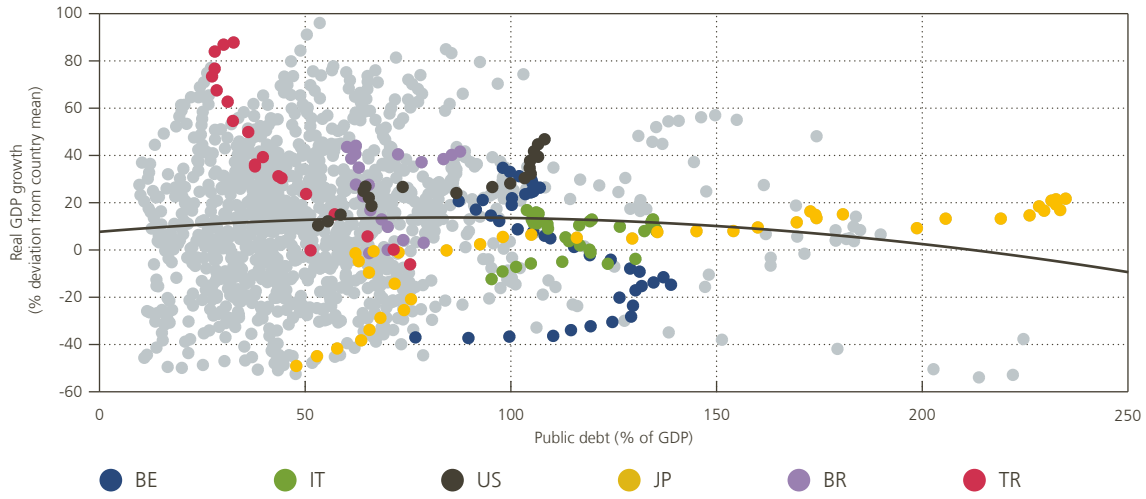
1 It should be noted that policy-makers referring to Reinhart and Rogoff (2010) have often adopted a much stricter interpretation of the results than intended by the authors of the paper.

2 Scatter plots of the relationship between public debt and future (say, five-year-ahead) growth lead to very similar conclusions (see Fatas *et al.*, 2020).

Chart 6

There is no "magic" public debt threshold

Public debt vs. economic growth [1], 1980-2019



Sources: IMF; methodology based on Eberhardt and Presibitero (2015).

1 Sample includes 47 advanced and emerging economies and is unbalanced in terms of years. Countries with a population smaller than 5 million (in 2020) are excluded, as are fuel exporters, fragile states, countries undergoing fast structural changes (Asian Tigers) and extreme outliers.

Ultimately, the growth effects of public debt also depend on what the proceeds are used for, and thus on the motives underlying governments' borrowing. While it is not always possible to make a clean separation between the "good, the bad and the ugly", the literature distinguishes between a couple of common borrowing motives (see Yared, 2019; Fatas *et al.*, 2020; and Kose, Ohnsorge *et al.*, 2020 for a more complete treatment).

Among the "good" reasons for accumulating debt, we find the financing of temporary countercyclical (demand-supporting) fiscal policy, as well as of investment boosting the economy's potential output (and therefore with a likely beneficial effect on the public debt ratio). Also, by financing large and lumpy public investment by means of extra (longer-term) debt issuance, governments can smooth taxes over time and thereby avoid the distortionary costs to the economy of having to ramp up taxes quickly and sharply. Of course, this reasoning supposes that debt accumulation now is being compensated by debt reduction later, during tranquil periods (through higher economic growth and/or primary fiscal surpluses). Even the small set of governments (typically of financial centres and resource-rich countries) which may not need to borrow to meet their financing needs – because they run persistent fiscal surpluses – still choose to issue debt. In these cases, public debt is issued to provide the banking sector and financial markets with a safe, "risk-free" asset that can serve as a savings vehicle and as a benchmark from which other (more risky) financial instruments such as corporate bonds or derivates can be priced (Kumhof and Tanner, 2005).

Obviously, public debt accumulation sometimes derives from "bad" or at least "less good" motives, mostly rooted in political economy. One example is that of political budget cycles, where politicians use government debt to finance tax cuts and spending increases that are primarily aimed at improving re-election chances. The empirical cross-country evidence in fact suggests that such cycles do exist, but their importance varies along different political systems, the degree of fiscal transparency and other factors (Philips, 2016). Another possibility is that public debt is used to redistribute too many resources (relative to the social optimum) from younger and future generations to the current, older generation, which may be more successful in asserting their preferences for the here and now. Such dynamics are especially expected in countries with more rapidly ageing populations, in which the median voter shifts to older cohorts (Yared, 2019). Finally, part of the government's over-borrowing may be due to common pool problems, such as when different line ministries each present a budget that appeases their respective pressure groups and the Finance Ministry is then confronted with an overall budget that is sub-optimally large from a macroeconomic point of view (Fatas *et al.*, 2020).

2.1.2 Public debt sustainability, safety and a negative r-g

Regardless of its nexus with economic growth, public debt needs to be "sustainable". Public debt sustainability is a complex concept and there are various definitions for it. Arguably one of the most complete definitions, covering both solvency and liquidity requirements, is that of the IMF (2021e, p. 6): "*[i]n general terms, public debt can be regarded as sustainable when the primary balance needed to at least stabilise debt under both the baseline and realistic shock scenarios is economically and politically feasible, such that the level of debt is consistent with an acceptably low rollover risk and with preserving potential growth at a satisfactory level*". Put differently, if stabilising the public debt ratio requires that, over an extended period, the government needs to achieve fiscal surpluses that are so large that they would not be acceptable to citizens and/or financial markets, or would imply austerity that significantly shrinks the economy, then public debt is considered unsustainable. Of course, the assessment of debt sustainability is more art than science. It is an inherently forward-looking exercise involving judgement, which depends on the government's strategic choices and fickle financial market beliefs; a broad, hard-to-model constellation of potential shocks hitting the government's balance sheets; and the composition and ownership of debts (Debrun, Ostry *et al.*, 2020; see also section 2.1.3).

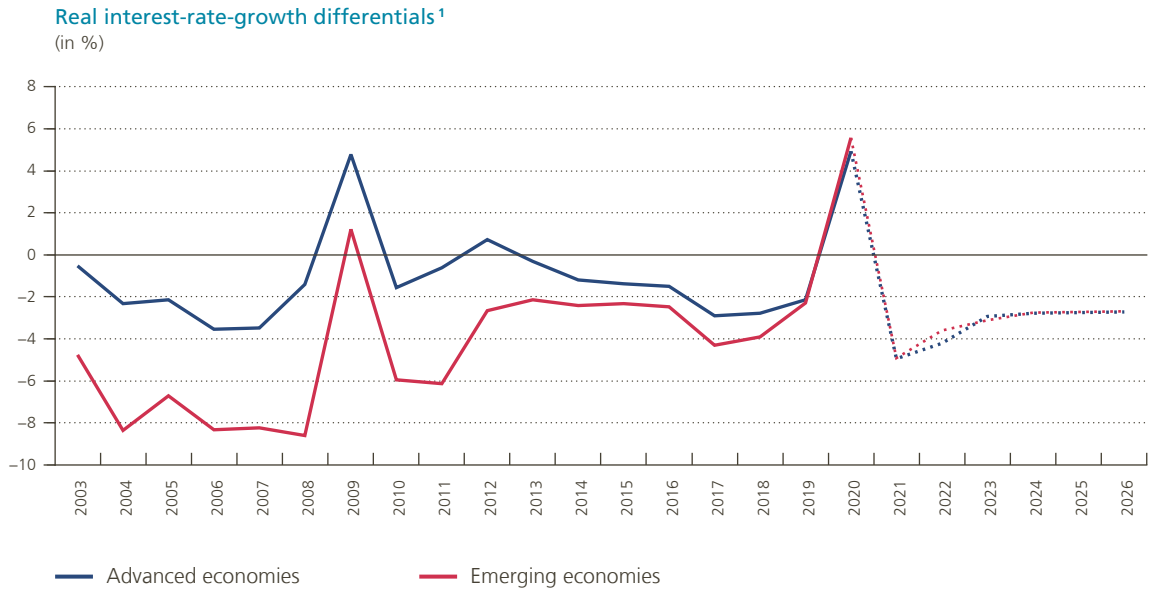
The government may want to steer clear from its maximum sustainable public debt ratio or "debt limit", beyond which it loses market access, is unable to rollover its debt, and could be forced to default (Ghosh *et al.*, 2013; Collard *et al.*, 2015). Since growth, primary balances, interest rates and (most relevant for emerging economies) exchange rates are all subject to (often correlated and persistent) shocks, it makes sense to keep public debt within a safety zone below the debt limit. A "safe" public debt level means that policy-makers are able to retain control over debt dynamics using fiscal policy, even under adverse conditions (Debrun, Jarmuzek *et al.*, 2020).

To be sure, and as suggested by the above definition, public debt sustainability analyses by the IMF, European Commission and others not only consider metrics based on the overall debt stock but also gross financing needs, i.e. the sum of the budget deficit plus any maturing public debt. Ceteris paribus, larger gross financing needs imply greater refinancing risks but, again, country characteristics, such as the size and depth of countries' domestic financial sector and markets and the composition of the broader public debt investor base, matter (IMF, 2021e; see section 2.1.3).

Recently, because of the very low interest rate environment (see section 1.2), there has been much discussion about negative interest-rate-growth differentials and what this means for public debt dynamics and sustainability. As chart 7 shows, advanced, and even more so, emerging economies have generally seen negative "r-g" over the past decade, except during the major recessions associated with the GFC and COVID-19 crisis; a constellation which is expected to continue over the medium term. When real economic growth exceeds the real cost of government borrowing, the government can just infinitely roll over its debt, and the debt ratio will automatically decline without having to achieve primary surpluses. The beneficial effect of negative r-g is moreover larger in countries where the initial public debt ratio is higher. Does this mean that we can sleep more soundly (Mauro and Zhou, 2021), while we patiently wait for the current record levels of public debt to melt away?

Chart 7

Negative r-g: not so uncommon, but not a law of nature



Source: IMF.

1 Interest rate is here the implicit interest rate on public debt expressed in real terms, i.e. the ratio of the interest bill to the debt stock that was outstanding in the previous year. Advanced and emerging economy aggregates are simple averages based on samples of 20 and 22 countries, respectively. Dotted lines represent IMF forecasts as of April 2021.

According to some, notably Blanchard (2019) and Furman and Summers (2020), negative r-g is part of a "new normal" of persistently low interest rates for (many) years to come, at least for major advanced economies[1]. Under such circumstances, public debt has no fiscal and low welfare costs, opening up possibilities for more

1 Private sector forecasters tend to hold similar views. According to the April 2021 survey of Consensus Economics, average real GDP growth over 2027-2031 is projected to exceed real (10-year) interest rates in all G7 economies apart from Italy.

aggressive fiscal stabilisation policies and large public investment programmes. The standard public-debt-to-GDP ratio is considered a misleading measure of debt sustainability, since low interest rates imply that the present value of future GDP has risen while debt service costs have fallen.

Others have a (much) less optimistic reading of negative r-g. Cochrane (2021) points out that the foregoing logic only holds if the extra fiscal expansion and accumulation of public debt do not lead to any increase in the interest rate and/or to lower growth (through higher risk premia and crowding out of private investment). He also demonstrates that, whereas r < g may indeed finance small fiscal deficits, the public debt ratio may not stabilise or only at very high ("unsafe") levels when fiscal deficits are too large[1].

Moreover, negative r-g is hardly a "new" phenomenon. Using data from 1800 up to 2018, Mauro and Zhou (2021) show that negative interest-rate-growth differentials have occurred over long periods in history in both advanced and emerging economies. On average, the share of years with negative r-g was 61 % and 75 % in advanced and emerging economies, respectively (and 100 % in China !). Often, this setting was the result of financial repression, i.e. situations where the (real) borrowing cost of the government was kept artificially low by means of interest rate controls, high reserve requirements for banks, international capital controls and/or publicly owned banks. While advanced economies liberalised their financial markets and fought inflation in the 1980s, emerging economies continued to practise financial repression against a high-inflation backdrop until the mid-1990s, explaining the higher prevalence (and typically higher absolute value) of negative r-g in the latter group of countries. Clearly, the historical norm of negative r-g has not always led to falling public debt ratios, except in the aftermath of World War II (see chart 1). As Rogoff (2021) quips, "politicians have long learned how to spend more than the growth-interest dividend".

Although it may not be the baseline scenario, the risk of a (sudden) reversal in r-g should not be discarded. Such reversals have been observed on several occasions in the past, especially in countries with higher public debts, shorter debt maturities and larger shares of debt denominated in foreign currency, which may be more vulnerable to rises in risk premia when growth falters or global risk aversion increases (Lian *et al.*, 2020). Higher public debt also implies a greater adverse snowballing effect, should r-g flip to being positive. Especially in emerging economies, where interest rates and growth are typically more volatile, negative r-g is far from guaranteed over the longer run. The scope for fiscal adjustment in the face of higher rates or lower growth is also smaller in emerging economies, because of smaller tax bases and lower non-interest shares of government expenditure. Blanchard *et al.* (2021) therefore warn against "importing wholesale the new fiscal consensus" from advanced to emerging economies[2].

Mauro and Zhou (2021) further demonstrate that r-g values have little predictive power when it comes to signalling debt problems : r-g values do not look significantly different in the years prior to default than in "normal" times. Conversely, marginal interest rates (i.e. the cost of newly issued public debt) tend to spike in the run-up to payment problems, typically only a few months ahead, leaving little time for corrective policies. According to the analysis of Moreno Badia *et al.* (2020), the public debt ratio itself is the most important predictor of fiscal crises, showing strong non-linearities but irrespective of interest rate-growth differentials.

One way in which governments can shield themselves against the risk of rising borrowing costs is the lengthening of debt maturities, which is exactly what Belgium and several other OECD countries have been doing in recent years (Cornille *et al.*, 2019)[3]. The current low-interest-rate environment makes such maturity lengthening financially attractive.

1 For illustrative scenarios of such public debt dynamics in Europe, see Fuest and Gros (2019). For applications to the Belgian context, see Cornille *et al.* (2019) and Cornille *et al.* (2021).

2 Euro area and other currency union member countries should remain particularly cautious too, given that their control over interest rates is more limited than in economies that have their own currency.

3 The COVID-19 crisis has been accompanied by a (likely temporary) return to more short-term bond financing (OECD, 2021b). The broader literature confirms that average bond maturities tend to decline during crises and periods of distress (Mitchener and Trebesch, 2021). Part of the debt maturity lengthening efforts by governments has been countered by increased central bank purchases of government debt, which have shortened the effective maturity of the consolidated public sector debt (see section 2.1.3).

All in all, we can argue that negative interest rate-growth differentials provide extra breathing room to continue to fiscally support the economy as it recovers from a severe crisis, and opportunities for financing larger public investments without driving up the public debt ratio (too much). Yet, this does not imply that "anything goes". A negative r-g should not be used as a free pass to waive all budgetary discipline or to lose sight of the evolution of the public debt stock.

2.1.3 Heterogeneity in investor bases and debt tolerance

As mentioned earlier, the composition of the public debt investor base is also relevant for borrowing costs and debt sustainability. Chart 8 illustrates that the holdership of public debt differs significantly between countries. A country like Belgium, for example, has a relatively diversified investor base, attracting foreign creditors from inside as well as outside the euro area, including banks, non-bank financial institutions such as pension funds and insurance companies, and investment fund managers, as well as foreign central banks (which include Belgian bonds in their reserve portfolios since they are denominated in euro, the second most commonly held reserve currency, after the US dollar). Naturally, in large countries with well-developed financial sectors and deep domestic financial markets, such as the United States and Japan, the role of resident investors is more prominent (even though, in absolute terms, both countries remain key suppliers of global reserve assets). The same goes for large, financially closed economies like China and India, where stringent restrictions on the international mobility of capital still apply. In other, smaller and more financially open emerging economies, including Argentina and Turkey, foreign creditors represent a larger share of the overall public debt holdership[1].

Wider foreign participation in public debt markets is a double-edged sword. On the one hand, foreign creditors can add to the available funding pool for governments, reducing the crowding-out effect of public debt on domestic banks' private sector credit portfolios, and contribute to higher liquidity and lower costs of marketable government debt. On the other hand, foreign (private) investors in public debt tend to be flightier and exhibit more procyclical behaviour than domestic investors (Arslanalp and Tsuda, 2012; 2014). Benchmark-driven investors, in particular, can expose countries to external shocks that are unrelated to their macroeconomic fundamentals (Arslanalp and Tsuda, 2015; Raddatz *et al.*, 2017).

In most advanced economies, especially the major ones, we observe in recent years a clear increase in the share of public debt that is held by the domestic central bank (or, in the case of the euro area, by the Eurosystem, since the start of the public sector purchase programme – PSPP in January 2015), mostly at the expense of other domestic investor shares. A larger central bank share in public debt holdings has again pros and cons. An important advantage is that, because of central banks' price and financial stability mandates, they take a longer-term perspective and tend to hold to maturity, thereby acting as stabilising investors which lower the refinancing risks for the government (Lennkh *et al.*, 2019). However, a key disadvantage is that the increase in central bank participation corresponds with a swap of traditional public debt for central bank liabilities under the form of bank reserves which have an overnight maturity; therefore the effective maturity of the consolidated public sector debt is shortened (see Cornille *et al.*, 2021 in this issue of the Economic Review for a detailed explanation of this mechanism). Moreover, since interest rate changes directly feed into the profits of the central bank (and thus impact the latter's redistribution of profits to the government), higher central bank ownership implies a larger risk of fiscal stress for the government when interest rates go up and/or greater risks for central bank independence (if the government does not accept the higher market interest rate and puts pressure on the central bank to keep its policy rates low).

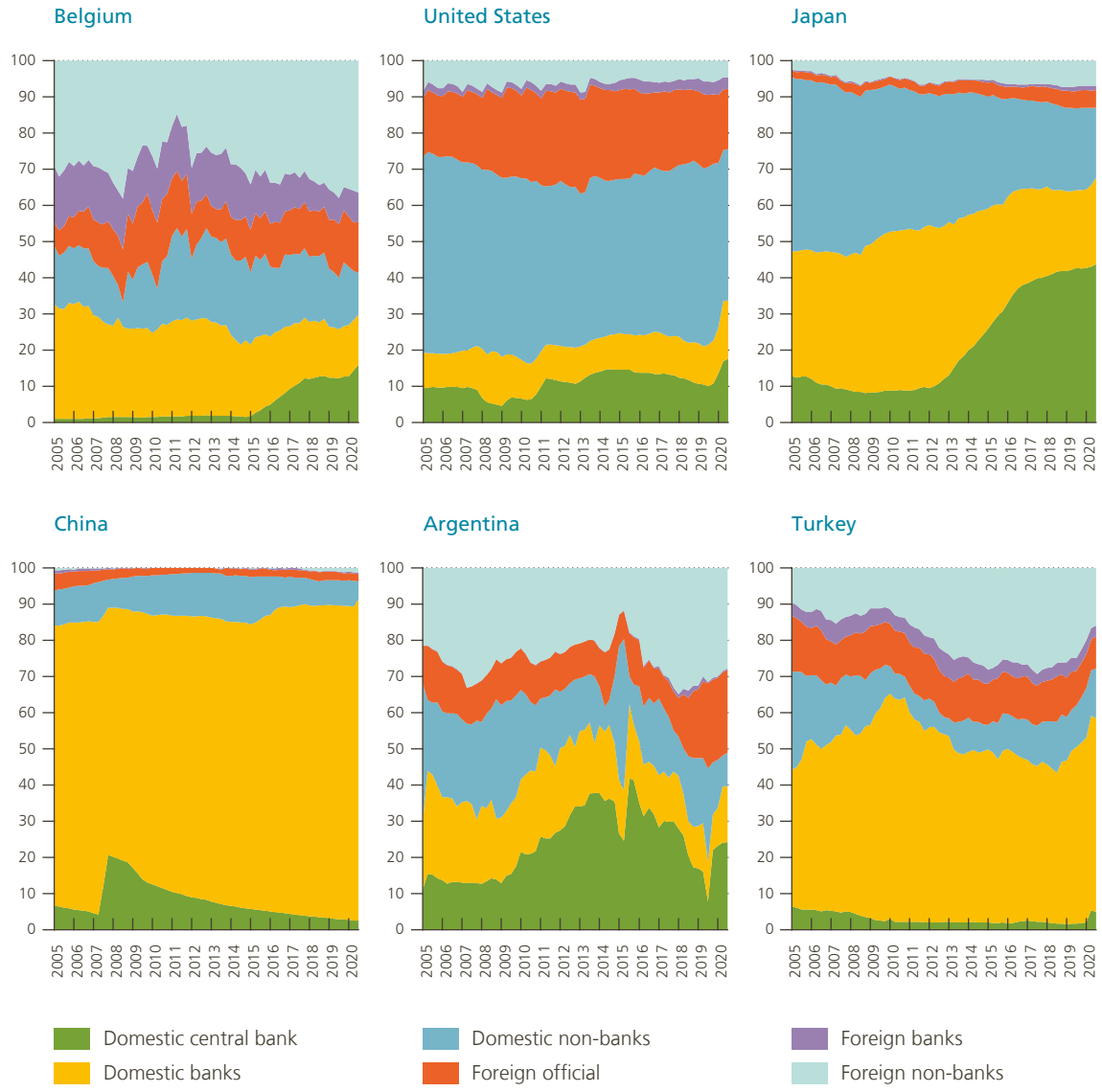
Apart from the investor base, the currency in which public debt is denominated also matters for debt sustainability. Most emerging economies have gradually enhanced the resilience of their public debts to shocks by borrowing more in local currency, something that was very difficult and costly before (as per the "original

1 Rather than foreign central bank holdings, the "foreign official" category comprises mostly a large IMF loan in Argentina, and World Bank and other multilateral support in Turkey.

Chart 8

Some public debt investor bases are more diversified than others

Holders of public debt[1], 2005-2020Q3
(in % of total public debt)



Sources: Arslanalp and Tsuda (2012, 2014).

1 Category of domestic central bank includes Eurosystem holdings for Belgium. Foreign official category consists of foreign central bank holdings and, in the case of Argentina and Turkey, foreign official loans from the IMF, World Bank and other multilateral organisations.

sin" theory[1]; see Eichengreen and Hausmann, 1999). Since the East Asian crisis (and other crises where foreign currency liabilities played an important role), emerging country governments have made deliberate efforts to develop domestic local currency bond markets. Over time, these domestic bond markets have caught the

1 The original sin theory starts from the observation that most countries (except for reserve-issuing countries) have been unable to use their own currency when borrowing from abroad (or even to borrow long term domestically) and posits that the main reasons behind this are beyond the control of individual countries: global financial market frictions and fragmentation, giving rise to high international transactions costs, and network externalities.

attention of foreign investors too. Unfortunately, the COVID-19 crisis has demonstrated that borrowing in their home currency does not isolate emerging economy governments from global financial shocks. In fact, when emerging economies borrow in local currency from abroad, the currency mismatches are shifted from the debtor to the foreign creditor: since those foreign creditors assess their returns in hard currency (typically US dollar) terms, local currency exchange rate depreciation amplifies creditor losses and may give rise to a local currency bond sell-off (a phenomenon called "original sin redux"; see Carstens and Shin, 2019). Due to the aggravating impact of this exchange rate channel, emerging country governments with higher foreign ownership in their local currency bond markets saw significantly larger increases in their local currency bond spreads during the early months of the COVID-19 pandemic (Hofmann *et al.*, 2020).

Summing up, not all debts and debtors are created equally. Countries differ in terms of the public debt levels they can support. Emerging economies and advanced economies with weaker macroeconomic fundamentals tend to have a higher "debt intolerance", meaning they experience problems (such as rapidly rising borrowing costs) at public debt ratios that are perfectly manageable by major advanced economy standards (Reinhart *et al.*, 2003). This higher debt intolerance appears to be explained by countries' historical track record of default and inflation, (perceived) institutional quality, as well as their debt investor base and structure (which are often intimately linked to countries' financial history and institutional set-up). Short-term, foreign-currency-denominated and externally-held debt is typically riskier, having predictive power for debt distress and crises (Manasse and Roubini, 2009; Catao and Milesi-Ferretti, 2014).

2.2 The risks associated with high corporate debt

Although there are several good reasons for non-financial corporations to rely on debt financing, such as to lessen agency problems between managers and shareholders, to diversify financing sources, to avoid diluting the owners' existing equity positions, or just because equity is not easily available to them, there are also several risks involved, such as the fact that debt needs to be serviced at all times, irrespective of the stance of the business cycle prevailing at the time. From an aggregate perspective, high firm indebtedness can have negative effects on financial stability and economic growth, which are interrelated. The relationship between corporate indebtedness and growth is generally considered to be inverse U-shaped, where very high debt levels are unfavourable for growth. However, as with public debt, there is no universal threshold that applies to all situations and the relationship seems to be characterised by non-linearities.

The negative relationship between high financial leverage and economic growth is often explained by a corporate debt overhang leading to reduced investment. Growing corporate debt could also be detrimental for economic growth if the new capital raised is misallocated toward relatively less productive firms, resulting in lower productivity and growth in the aggregate economy.

Besides its direct link to economic growth, high corporate indebtedness also increases solvency[1], currency, and rollover risks, which can lead to higher non-performing loans and, if realised on a large scale during crises, even risks to financial stability.

Lastly, although fiscal support allocated during the COVID-19 crisis has been absolutely essential and has helped many viable companies to withstand the economic adversities, the large-scale government guarantees for loans bring with them the risk of corporate debt ending up on governments' balance sheets, aggravating existing risks on already high public debt burdens discussed in the previous section.

2.2.1 Corporate debt overhang and misallocation of resources

COVID-19 is expected to have pushed up the number of non-financial firms in distress, defined as firms having a negative book value of equity (Demmou *et al.*, 2021). At the same time, firms have massively taken up more

1 For a detailed discussion of the effects of COVID-19 on Belgian corporate liquidity and solvency, see Tielens *et al.* (2021) in this issue of the Economic Review.

debt to bridge the acute crisis phase. These two factors have strongly raised corporate leverage (defined here as debt to total assets) and default risks. Empirical research shows that periods of strong growth in corporate financial leverage have often been followed by lower output growth (IMF, 2021c). This mainly works through the corporate "debt overhang" channel (Myers, 1977), where high financial leverage reduces firms' investment and ultimately economic growth.

Whenever a firm has a high outstanding debt stock and the risks of default are substantial, any return on investment will accrue relatively more to senior debt-holders than to shareholders. Therefore, the firm will only invest if the expected return from investment is higher than the debt service on outstanding debt held by senior creditors and can still offer attractive returns to new investors and equity holders. The investment decision consequently changes for highly indebted firms : having a positive net present value might no longer suffice to undertake the investment. Moreover, highly indebted companies may have more limited access to new credit, which, together with the reduced incentives to invest, can generate further pressure to deleverage and postpone or cancel even profitable investment (Demmou *et al.*, 2021). Ultimately, this lower investment can undermine output growth and the economic rebound after a crisis. The prolonged period of low investment after the GFC has clearly demonstrated this risk should not be underestimated (Kalemli-Özcan *et al.*, 2019).

Recent research has added further nuance to the corporate debt overhang theory. Barbiero *et al.* (2020) find that corporate debt overhang is less pronounced for firms in sectors with good global growth opportunities, while Diamond and He (2014) and Kalemli-Özcan *et al.* (2019) demonstrate that it is larger for short-term debt in bad times. Borenszstein and Ye (2020) find that corporate debt overhang is stronger for large firms. Kalemli-Özcan *et al.* (2019) show that it is stronger when firms are linked to weak banks with exposure to sovereign risk, something which has played a role in the aftermath of the European sovereign debt crisis. Evidence also points to non-linearities in the relationship between high corporate indebtedness and investment activity at firm level, in which debt overhang discourages investment more strongly when corporate leverage is higher (Borensztein and Ye, 2020 ; Cevik and Miryugin, 2020).

The COVID-19 crisis will most likely lead to debt overhang problems, as the hardest-hit sectors often do not offer favourable business prospects and corporate leverage is at record levels and still growing. The combination of high indebtedness and reduced profitability raises default risks and there is a significant amount of new short-term debt to bridge the period of reduced economic activity. Consequently, there is a real risk of a prolonged period of low investment and low growth, particularly in certain sectors, if the effects of the pandemic linger and if the recovery from the downturn takes longer than expected (Cevik and Miryugin, 2020).

As mentioned above, high and growing corporate debt levels can also undermine growth if the new capital raised is misallocated, leading to lower aggregate productivity growth. This misallocation of resources can happen through intra-firm or inter-firm efficiency channels.

Within firms, one of the reasons why firms might prefer debt over equity, is the existence of a debt-equity tax bias (Fatica *et al.*, 2012). Interest payments are tax deductible in most corporate income tax systems while typically no such treatment is foreseen for equity financing[1]. This creates a distortion in the financing decision of companies, as they are inclined to take on more debt than without such measures, which exacerbates the risks associated with high leverage. The IMF (2016) estimates that the debt bias in corporate tax systems could have pushed up debt ratios by on average 7 % of total assets.

Besides the intra-firm efficiency channel, misallocation of resources across firms can equally lead to lower aggregate productivity. For example, research has shown that, in periods with strong credit expansion, credit flows disproportionally to companies with more (tangible) or better collateral (e.g. firms with more real estate assets during the initial years of a real estate boom, see Martin *et al.*, 2019), undermining growth in

1 Allowances for corporate equity to (partially) correct for this discrimination between sources of financing exist in several countries, including Belgium, Brazil, Cyprus, Italy, Malta, Poland, Portugal and Turkey.

industries that have more intangible assets (e.g. as a result of high R&D intensity), i.e. what are commonly considered the engines of growth. In such instances, these firms will have less access to credit, undermining the overall productivity growth of an economy (Cecchetti and Kharroubi, 2015). Having better access to credit also allows less efficient incumbent firms to remain longer on the market, thereby discouraging entry of new and potentially more efficient innovators (Aghion *et al.* 2019). The effects may also play out through the demand for labour : credit booms tend to undermine productivity growth by inducing labour reallocations towards sectors with lower productivity growth. Moreover, the effect of misallocations that occur during a credit boom, and during economic expansions more generally, is much larger if a crisis follows (Borio *et al.*, 2015).

2.2.2 Solvency risks

Solvency is defined as the ability of a company to generate enough revenue to service its debt. As mentioned above, the COVID-19 crisis has placed a lot of stress on firms' assets, even leading to negative book values of equity for many firms. In particular (but not only) for the latter firms, it may be difficult to generate enough cash flow to meet their debt service requirements, after which insolvency and bankruptcy loom just around the corner. The sharp contraction in economic activity caused by the lockdowns and other measures in response to COVID-19 was therefore expected to increase insolvencies soon after the first wave of the pandemic kicked in.

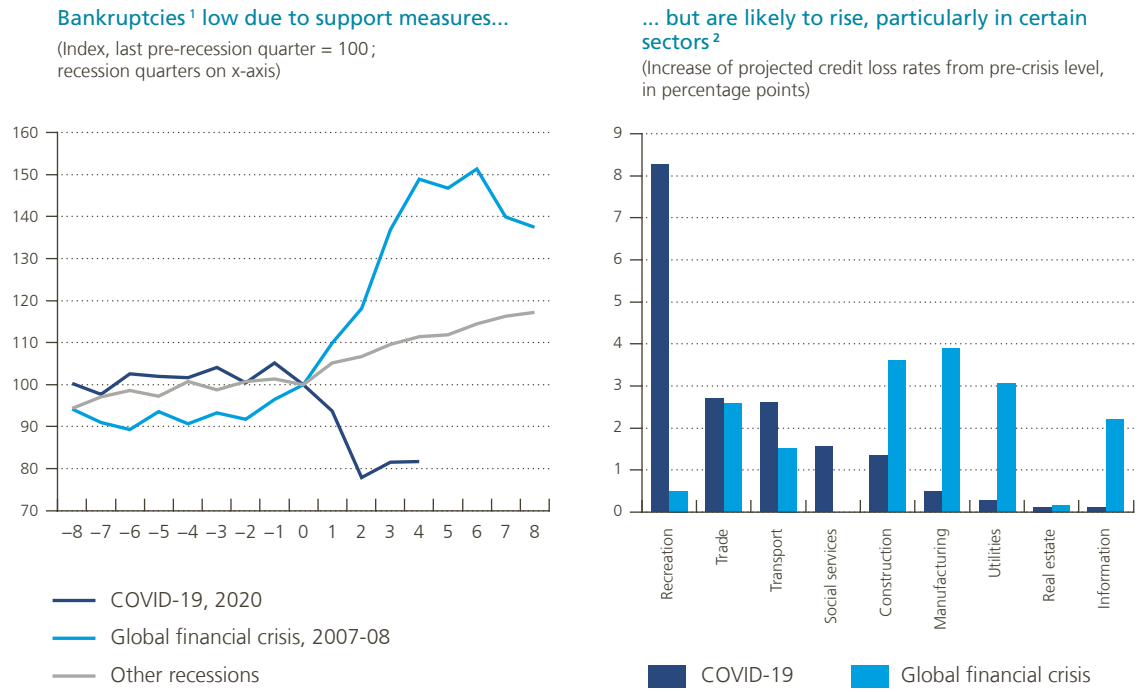
However, data show that insolvencies and bankruptcies have remained exceptionally low compared to earlier crises (see chart 9, left-hand panel), mainly due to the extremely generous support measures, such as debt moratoria, tax deferrals, direct grants and credit guarantees (IMF, 2021f), which helped to bridge liquidity needs in the short term. In several European countries, filing for bankruptcy was even temporarily suspended. These measures kept solvency problems at bay for most firms, particularly for the smaller ones without access to capital markets, and avoided the chain reaction on creditors and households that usually takes place during crises. Governments' support measures have absorbed much of the losses incurred by firms (and households) (ESRB, 2021). As an example, the NBB (2021) estimates that in Belgium approximately 85 % of the income losses across all sectors were borne by the government. Using balance sheet data for over 4 million European firms, Ebeke *et al.* (2021) find that, on aggregate, country-specific corporate relief measures may have saved 15 % of employment and up to a quarter of the value added of the corporate sector in Europe. Monetary policy has reacted forcefully too after the first market disturbances in March 2020 and managed to improve funding conditions. The relaxing of certain prudential measures for banks, in combination with public loan guarantees, has also made it easier for banks to continue to provide credit to the real economy.

As the recovery is gradually taking hold, the phasing out of these measures will likely lead to a rise in insolvencies for firms, particularly those in the hardest-hit sectors. A sectoral analysis by the BIS (Mojon *et al.*, 2021) projects credit loss rates for the G7-countries, Australia and China until the end of 2022. In a central scenario, taking government support measures into account, they estimate that credit losses will on average be around three times higher as before the crisis (2018-2019), with strongly heterogeneous results according to the sector and country studied (see chart 9, right-hand panel).

The OECD and IMF have also conducted analyses on the effects of the current crisis on corporate solvency. According to the OECD (Demmou *et al.*, 2021), between 30 and 36 % of firms would not be profitable enough to cover interest charges, again with strongly heterogeneous results according to the sector. Despite the positive effects reported by the IMF (Ebeke *et al.*, 2021) with regard to the implemented corporate relief measures, their analysis shows that the increase in solvency risks cannot be fully relieved. Even with the support policies implemented as planned, the share of insolvent firms could increase by 6 percentage points to 17 % in advanced economies and by 5 percentage points to 24 % in emerging economies. Focusing only on those companies that were solvent before the pandemic, simulation results still suggest that, despite all the policies implemented, the COVID-19 outbreak could make 7 % and 8 % of those firms insolvent in respectively advanced and emerging economies.

Chart 9

More solvency problems could lie ahead, particularly in certain sectors



Sources: BIS, IMF.

1 Based on data from 13 advanced economies with varying coverage during 1990Q1-2020Q3. Lines are averages across recession types. For the COVID-19 crisis, quarter 0 is 2019Q4 for all countries; for the global financial crisis, quarter 0 is country-specific peak of real GDP during 2007-2008; Other recessions are country-specific episodes of at least two consecutive quarters of negative growth during 1990-2006 and 2009-2019.

2 Based on data for G7 countries, China and Australia. Credit losses are defined as recognised impairments on bank and non-bank debt.

The above examples clearly show that challenges remain when the current support measures are phased out. The health of the corporate sector will crucially depend on the further development of the pandemic and the efficient targeting of support measures to those firms that really need it, while avoiding locking in resources in ultimately unviable firms ("zombie firms").

2.2.3 Currency risks

Solvency risks of companies can be amplified by other factors. One is the amount of foreign currency debt issued, particularly if the proceeds from debt are used to generate earnings and invest in domestic currency.

Currency risks linked to possible currency mismatches mainly seem to concentrate in specific regions and in the non-tradable sector, particularly in a few specific (net importing) sectors such as construction and retail (Abraham *et al.*; 2020). Firms in the tradable sector tend to have a natural hedge against currency risks on their debt as they are usually also gaining income in foreign currency.

In several emerging economies, firms in the non-tradable sector have issued large amounts of international corporate bonds (Chui *et al.*, 2016). Nevertheless, the largest growth in corporate bond financing in emerging economies occurred in local bond markets through domestic currency issuances, mainly driven by Chinese companies. Starting in 2008, the first year during which Chinese corporate bond issuance reached significant levels, the percentage of domestic currency denominated bonds reached 90 % in China. If they were excluded from the sample, the foreign currency share of bonds issued by emerging economies'

non-financial corporations would still hover around half of all outstanding bonds. In advanced economies, only around 20 % of corporate bond issuance was foreign currency denominated in 2018, a share that has been relatively stable over time.

These general developments do not rule out the possibility of currency risks building up in particular sectors or economies. In addition, some firms deliberately get involved in risky practices. In this regard, Acharya *et al.* (2015) discuss earlier evidence that non-financial corporations in Latin America have played the role of financial intermediaries, using the proceeds of international bond issuance to maintain cash or liquid assets when the conditions for carry trade are more attractive. They show that this behaviour is used by companies to circumvent capital controls when interest rate differentials are large. Also, Harasztosi and Katay (2020) demonstrate that carry trade and diversification strategies were relevant factors for Hungarian corporations' currency-of-denomination decisions.

Growth in foreign currency credit held up during the COVID-19 pandemic, standing in stark contrast to the large contractions observed during the GFC (BIS, 2021). Issuance of debt securities was the driver of dollar credit growth to all borrowers outside the US (+9 % year on year in 2020, similar to the average pace over the last 10 years), while bank loans in dollar stabilised. The difference in dollar credit growth between the GFC and the COVID-19 crisis is mainly explained by the differing evolution in bank lending in dollar as it contracted enormously during the GFC (–14 % year on year in 2009Q3 compared to 0.6 % in 2020). While the euro-denominated debt for non-residents was characterised by similar developments than observed in US dollar-denominated debt in 2020, bank loans in Japanese yen to borrowers outside of Japan continued to growth strongly (+5.6 % year on year), whereas the issuance of debt securities declined significantly (–5.3 % year on year).

2.2.4 Rollover and refinancing risks

Rollover risk arises when debt is about to mature and needs to be converted or rolled over into new loans or debt securities. The higher the overall financial leverage of a company, the more it becomes exposed to the risk that a share of its debt cannot be rolled over or refinanced, or only at a significantly higher cost. Companies are more vulnerable to rollover and refinancing risks if the maturities of their debts are shorter and, linking this risk to the previous section, if they have a larger share of foreign currency denominated debt.

In general, maturities of debt securities are shorter in emerging than in advanced economies as the term premia for companies in emerging economies are higher (linked to higher default and inflation risks). After the GFC, maturities of bond issuances in emerging economies declined, while the average maturity of outstanding debt from companies in advanced economies continued to hover around eight years. Nevertheless, the decline in maturities in emerging economies was mainly driven by China : while the Chinese average declined from six to three years between 2008 and 2018, it only came down from seven to six years in other emerging economies (Çelik *et al.*, 2019).

As a consequence, for emerging economy corporations, almost 50 % of the outstanding amount of bonds at the end of 2019 needed to be rolled over between 2020 and 2022. When taking all bond categories into account, the outstanding bonds that needed to be rolled over within the next three years came to a record share of 32 % of the total at the end of 2019 (Çelik *et al.*, 2020). Moreover, related to the decline in the quality of issued bonds, maturities of outstanding non-investment-grade bonds became particularly shorter in recent years, while those of investment grade bonds became longer. This situation clearly carries risks given the current situation and the perspective of a tightening of monetary policy once the recovery is firmly entrenched.

Despite the shortening of bond maturities, Abraham *et al.* (2020) point out that the compositional change from loan towards bond financing since the GFC could have had a positive effect on overall (loan plus bond) debt maturities, as bank loans usually have shorter maturities than bonds. The aggregate effect on debt maturities thus remains unclear and cannot be easily calculated as data on bank loan maturities are not publicly available across economies.

2.2.5 Risks to financial stability

The foregoing also entails risks for financial stability, as the interconnection between firms and between firms and banks or other investors is strong. The COVID-19 pandemic and its consequences are the first big test of the financial system's resilience after the GFC and the changes in financial regulation it brought about.

If some of the earlier-mentioned risks materialise and lead to losses for banks and other investors, the financial sector could be negatively affected, both through indirect and direct channels. Several of the policy actions taken in response to the pandemic are fortunately helping the financial system to cope with the shocks and to support confidence and continued lending. The Financial Stability Board has also issued principles to guide national responses to COVID-19 and avoid diverging policies that would distort the level playing field and lead to market fragmentation (FSB, 2020).

The risks to financial stability are nevertheless contingent on the further evolution of the crisis and the policy response. They could be exacerbated if some of the changes that are currently taking place in the economy are cemented as more structural developments. For example, the IMF (2021c) focuses on the large risks surrounding commercial real estate, in which large value reductions were recorded in 2020 that could become structural if tendencies to shop online and work from home turn out to be more permanent phenomena after the recovery takes hold.

2.2.6 Risk of corporate debt ending up as government debt

Another important risk is that corporate debt ends up on the government's balance sheets if loans for which the government has provided guarantees cannot be repaid. In certain countries, these risks are not negligible and the phasing out of support measures must be well monitored to prevent them from materialising.

3. The way forward

So how do we move forward from here? How can high debt ratios be brought down, or at least kept under control? As before, we first look at policy options for managing public debt before we dive into corporate debt.

3.1 Policies to keep public debt under control

Different policy options exist to reduce or, at the minimum, stabilise public debt ratios (see Reinhart *et al.*, 2015), but they vary significantly in terms of feasibility and desirability[1]. So-called "heterodox" policy actions – which include outright default or public debt restructuring, generating unexpected inflation, and financial repression – have often been relied on by emerging economies as well as advanced economies in the past, but in the current context they appear to be unrealistic and highly undesirable.

3.1.1 No room for "heterodox" policies

While it is true that, historically, most of today's advanced economies have known (several) episodes of default and/or debt restructuring, there have been no such episodes in advanced economies since the 1970s, with the exception of the Greek and Cypriot restructurings (Reinhart and Rogoff, 2009; Mitchener and Trebesch, 2021). In contrast to the precarious state of affairs in several lower-income economies, for which the G20 has elaborated

1 For a discussion of the different policy options with respect to Belgian public debt more specifically, see Cornille *et al.* (2021) in this issue of the Economic Review.

debt relief initiatives[1], the current public debt situation in advanced (and most major emerging economies) is not such that a forced debt restructuring is warranted: governments are still able to finance their high debt levels at low cost and the crowding out of the fiscal space for essential social and economic expenditures by debt service seems limited for now. Yet, there have been calls to cancel the euro area public debts held by the Eurosystem. As Boeckx and Debrun (2021) and Cornille *et al.* (2021) explain in detail, however, such operations would not only be illegal (under the EU Treaty's prohibition of debt monetisation) and politically infeasible, but would moreover fail to yield much extra budgetary headroom (as the cancellation of interest payments to the Eurosystem would be compensated by losses in central bank dividends to governments) and would be very risky (undermining the "risk-free" status of government liabilities and confidence in the euro). Also, a large write-off of privately held debt claims on major European sovereigns would be problematic, especially in the absence of clear procedures[2], and would undoubtedly cause a severe financial crisis, given the highly integrated nature of European economies and their interwoven banking systems.

Alternatively, governments might try to erode their (local currency denominated) debt by means of generating surprise inflation and/or financial repression, i.e. policies aimed at keeping nominal rates on public debt below the free market rate, be it through regulatory restrictions or official interventions. Examples of such repressive policies include explicit or indirect caps or ceilings on interest rates; the creation and maintenance of "captive" domestic investor bases for government debt through capital controls and high non-remunerated bank reserve requirements; and close connections between governments and banks, such as direct state ownership or extensive state management of banks and other financial institutions (Reinhart and Sbrancia, 2015). Policies like these, often coupled with toleration of high inflation, were intensively used by advanced economies to bring down public debt levels in the post-World War II, Bretton Woods era (roughly from 1945 to the early 1980s) and beyond that in several emerging economies. That notwithstanding, the techniques behind the creation of unexpected inflation and financial repression ultimately boil down to "fooling" or exploiting creditors/investors and have been shown to have an adverse impact on economic growth (Jafarov *et al.*, 2019). Recurrent use would severely harm the credibility of governments and central banks and could un-anchor inflation expectations. In any case, especially so in financially liberalised advanced economies, there now appears to be much more limited room for financial repression[3]. According to indices measuring the intensity of interest rate controls, financial repression has also receded in emerging economies but typically remains more prevalent there than in advanced economies (Jafarov *et al.*, 2019).

3.1.2 Towards a mix of more "orthodox" policies?

Given the problems with heterodox policies, it makes sense to look further into more "orthodox" policy options, which usually comprise enhancing growth and/or running primary budget surpluses.

Growing out of debt – i.e. reducing public debt-to-GDP ratios by raising the denominator – is obviously the least painful option on the menu. But, engineering significantly higher economic growth is far from straightforward, especially in countries where high public debt may already be weighing on growth (see section 2.1.1). The spectacular economic growth of advanced economies in the immediate aftermath of World War II, which

1 In response to rising debt sustainability concerns and the lack of fiscal space to effectively deal with the COVID-19 crisis in lower-income countries, in May 2020, the G20 launched the Debt Service Suspension Initiative (DSSI), offering eligible countries a temporary suspension of debt service to their official bilateral creditors. In November 2020, this was followed by the creation of the G20 Common Framework for Debt Treatments beyond the DSSI, which could deliver deeper debt restructuring for the same group of lower-income countries, on a case-by-case basis (see IMF, 2021g).

2 Since 2013, following the Greek debt restructuring, all newly issued euro area government securities with a maturity above one year must include standardised collective action clauses, contract provisions which allow a qualified majority of bondholders to bind the minority to the terms of any debt restructuring and which thereby reduce the risk that minority creditors block and disrupt the restructuring process. There have also been calls to introduce a statutory sovereign debt restructuring mechanism (SDRM) in the euro area, typically linked to crisis lending by the ESM (e.g. Andritzky *et al.*, 2019), but such proposals have been met with much resistance (e.g. Tabellini, 2017).

3 As Schnabel (2020) explains, the ECB's (negative) interest rate policies and asset purchase programmes do not constitute "financial repression". She demonstrates that there is no systematic relationship between government bond issuance and the amount of bonds purchased by the Eurosystem in secondary markets; that the ECB's actual and shadow policy rates have followed a path that is not far from a Taylor-rule-based reaction function with respect to output and prices; that inflation expectations have not been accelerating (which would typically be the case under fiscal dominance); and that the disciplinary function of financial markets on sovereign bond markets has not been lost.

together with financial repression and high inflation contributed to bringing public debt levels down, was bolstered by a number of special factors which later largely disappeared: the sheer depth of the output declines during the war, fast labour force growth due to the demobilisation and reintegration of troops, the diffusion of wartime inventions for civilian purposes, and the very high returns on investment in (destroyed) physical capital (Reinhart *et al.*, 2015). We did not observe any similar boost to growth after the GFC, partly due to private sector debt deleveraging. Likewise, it remains to be seen whether the recovery from the COVID-19 crisis will lead to much faster growth (beyond the very short term).

Building up large and persistent primary fiscal surpluses appears to be economically and politically difficult too. According to a historical overview by Eichengreen and Panizza (2016), episodes of such persistent surpluses are relatively rare and have mostly occurred under exceptional circumstances. One example is the experience of Belgium from 1995 to 2005, when the country ran primary surpluses averaging more than 5 % of GDP and brought down public debt from more than 130 % of GDP to about 95 %. The first years of this period correspond with the run-up to the deadline for meeting the Maastricht convergence criteria, which was important for Belgium as a founding member of the Economic and Monetary Union. The period was also preceded and accompanied by key institutional reforms with respect to fiscal devolution, independent budget forecasts, and the monitoring and coordination of fiscal policies between federal and regional government levels (IMF, 2003; Bisciari *et al.*, 2015). Even if it were politically feasible, at the current juncture, any radical switch to austerity could well prove self-defeating, as fiscal multipliers are deemed to be higher during recessions (Auerbach and Gorodnichenko, 2012); large sudden cutbacks in spending or tax rises would thus likely have severe consequences for economic growth and public debt ratios.

Arguably, the most feasible way forward for public debt is a combination of various policies. First of all, governments would do good to continue using targeted and time-restricted crisis support to limit the scarring effects of COVID-19 on human capital and viable firms. Next, where financing costs remain low and (at least some) fiscal space is still available, these can be exploited to enhance potential growth. The COVID-19 crisis and associated recovery plans (including the support provided in Europe by Next Generation EU) hold opportunities to strengthen commitment to investment (in digitalisation and in a transition towards a greener, more energy-efficient economy, for instance). If such investment is well-targeted and accompanied by structural reforms in product and labour markets, it could put the economy back on a higher growth path and contribute to an "organic" reduction in public debt ratios. However, well-performing fiscal policy does not only require boosting productive spending but, equally important, compressing unproductive outlays. In countries where there is no longer any fiscal space, (gradual) consolidation will be needed, once the economic recovery is underway, in order to eliminate the structural deficits inherited from pre-COVID-19 times. Finally, it is important that governments draw out a credible medium-term trajectory for fiscal policy[1]. Such a trajectory will raise confidence in governments' fiscal policy and may therefore create extra budgetary room.

3.2 Policies to keep corporate debt under control

To prevent the risks of high corporate debt from materialising, some consensus has emerged about a mix of policies to ensure that the current COVID-19 crisis does not lead to a strong increase in insolvencies, the consequences of which could trickle down to other firms, households, governments, banks and investors. Countries will need to slowly phase out support measures once the acute phase of the crisis has passed and improve their legal mechanisms to reduce the effects of debt overhang and prevent long-term economic scarring effects (Liu *et al.*, 2020; Demmou *et al.*, 2021; Ebeke *et al.*, 2021).

First of all, support measures for firms taken in response to the COVID-19 pandemic need to be state-contingent, targeted to the hardest-hit sectors, but also well-designed and flexible so that they can

1 See Bisciari *et al.* (2020) for a discussion of multi-year budgetary planning in Belgium and in the European context.

easily be phased out/adapted once the recovery takes hold. The goal of these support measures, such as moratoria, tax deferrals and subsidies, is to provide liquidity to firms in need to avoid solvency problems in the short run. Nevertheless, support should focus on firms that are in essence viable and only suffer from a short-term exogenous shock. It is important to try to avoid market distortions and locking in financial means in non-viable firms, as this would undermine aggregate productivity growth and inhibit the creative destruction process.

To reduce non-financial corporations' high leverage and restore the balance between equity and debt financing, equity financing (and hybrid instruments) needs to be promoted. Equity financing can be supported both at national and international level, for example by addressing regulatory bottlenecks to stimulate the development of capital markets (e.g. the Capital Markets Union in the EU). In the context of the COVID-19 crisis, many countries have taken initiatives to support (quasi-)equity financing for firms. Examples include the *prêts participatifs* in France, the Seed Capital scheme in the Netherlands, and new resources for Bayern Kapital in Germany. Several governments have also put more financial capacity into existing financial institutions that can boost corporate equity, such as national development banks. Moreover, as mentioned above, a reform of tax policies can help to restore the balance between equity and debt financing by firms, for example by introducing an allowance for corporate equity in countries where this does not yet exist.

Several actions are advocated to cope with the possible surge of firm defaults, insolvencies and non-performing loans as crisis support measures are phased out. It is important to consider these reforms early as insolvencies and bankruptcies are still low (see section 2.2.2), because some of them will take time to put in place. A reform of insolvency procedures is a good example, as it takes time to pass into law, while the new and more efficient structure should ideally be in place by the time the acute phase of the COVID-19 crisis has passed.

In this respect, the regulatory frameworks for debt restructuring may need to be adapted, in order to enable viable firms to remain in business after a quick and efficient restructuring process. Insolvency procedures may also need to be reformed to make a timely exit of non-viable firms possible, as well as to ensure that the system can cope with large volumes of cases and that the legislative barriers for restructuring and bankruptcy are lowered, particularly for SMEs and businesses without assets. Effective insolvency procedures and an early recognition of credit risk can also help to decrease lending to zombie firms (ECB, 2021). From experience with earlier crises, it appears that setting up hybrid and "out-of-court" procedures is best practice to minimise the time and cost of restructuring and insolvency procedures. Revision of other laws may be needed to support efficient out-of-court debt restructuring procedures, such as corporate governance rules on the responsibilities of managers in firms, and securities and tax laws (Laryea, 2010).

Once the support measures are wound down, the share of non-performing loans (NPLs) is likely to rise, as seen in the wake of earlier macroeconomic crises. However, it is hard to assess to what extent the share of NPLs would rise, as the current crisis is atypical in many respects: a common shock with heterogeneous impact, extremely generous fiscal support measures, and a high degree of uncertainty surrounding the economic consequences of the shock and the strength of the recovery. This high uncertainty also makes it necessary to design state-dependent policies (Kasinger *et al.*, 2021).

Previous crises have shown that it is important to foster proactive NPL management to contain the negative fallout from rising NPLs. In this context, it is essential that banks realistically assess current loan values in order to avoid any delayed recognition of losses and the continued financing of zombie firms (Laeven and Valencia, 2018). This goal can be achieved by effective asset quality reviews, stress tests and adequate accounting rules. Forbearance, other state aid and public bank capitalisation should be phased out as the recovery progresses, to provide the right incentives to banks to tackle their NPL problems. A secondary market for NPLs also has the potential to be an important component of NPL resolution (Kasinger *et al.*, 2021). Lastly, earlier crises have shown that asset management companies can be an effective way to maximise asset recovery for banks while supporting rehabilitation of viable corporations through debt restructuring (Laryea, 2010).

Last, but not least, it is important to closely monitor financial risks and take macroprudential measures to minimise them, and to do this in a targeted way to avoid general tightening with possible negative growth effects (IMF, 2021c).

Conclusions

In this article, we have presented the main trends in the public and non-financial corporate debt in advanced and major emerging economies, highlighted the disadvantages and risks associated with high debt, and discussed the way forward, i.e. the different policy options there are to reduce debt burdens or, at least, to keep them under control. The main takeaways can be summarised as follows:

Both public and corporate debt ratios are reaching historic highs in advanced and major emerging economies with the COVID-19 crisis exacerbating an already increasing trend. It is unlikely that these debt levels will come down significantly any time soon. The low interest rate environment has facilitated this debt surge, not least through a consequent search for yield by investors.

High public debt may weigh on growth and raise sustainability concerns, but no universal threshold appears to exist; much depends on the actual use of debt proceeds, the composition of the investor base, and public debt structure. Negative interest rate-growth differentials (r-g) provide some extra breathing room but are certainly no panacea. High corporate debt implies risks of low investment, productivity and growth; misallocation of resources; insolvency; zombification of firms; and financial instability.

Heterodox policy approaches to public debt reduction such as debt restructuring, the creation of surprise inflation, or financial repression appear to offer no viable way out. A combination of more orthodox policies is arguably more desirable and feasible. The optimal mix of targeted crisis support, investment to boost potential growth, and fiscal consolidation depends on countries' fiscal space and the pace of their recovery from the COVID-19 crisis. It needs to be accompanied by credible medium-term fiscal plans. To attenuate corporate debt problems, policy-makers should also consider a combination of tools, including flexible, state-contingent support measures in the acute phase of the crisis, reforms to corporate debt restructuring and insolvency procedures, and the promotion of equity financing.

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