FINANCIAL
STABILITY
BOARD

Approaches to Debt Overhang Issues of Non-financial Corporates

Discussion paper

22 February 2022

The Financial Stability Board (FSB) coordinates at the international level the work of national financial authorities and international standard-setting bodies in order to develop and promote the implementation of effective regulatory, supervisory and other financial sector policies. Its mandate is set out in the FSB Charter, which governs the policymaking and related activities of the FSB. These activities, including any decisions reached in their context, shall not be binding or give rise to any legal rights or obligations.

Contact the Financial Stability Board

Sign up for e-mail alerts: www.fsb.org/emailalert
Follow the FSB on Twitter: @FinStbBoard
E-mail the FSB at: fsb@fsb.org

Approaches to Debt Overhang Issues of Non-Financial Corporates

Background

Extraordinary policy response by public authorities has been key to limiting the economic fallout of the COVID-19 pandemic. Swift and sizable policy responses helped mitigate the adverse effects of the shock on the real economy and the financial system. Together with the increased resilience since the Global Financial Crisis, these measures were instrumental in preventing a very long recession and a systemic financial crisis. The measures likely alleviated economic damage stemming from a surge in bankruptcies and provided financial institutions with time to assess the viability of corporates and businesses as more information became available. As the economy and companies start to recover, public authorities are increasingly expected to prepare to address the issues stemming from a potentially excessive rise in firms' indebtedness. The FSB Report on Lessons Learnt from the COVID-19 Pandemic from a Financial Stability Perspective published in October 2021 raised debt overhang as one of the broader policy issues that warrant the FSB's attention and indicated that the FSB is studying possible approaches to dealing with debt overhang issues.

The objectives of this discussion paper are to gather views from the public on the practical extent of the debt overhang issues in a post-COVID environment and to facilitate a dialogue between financial authorities and external stakeholders, including financial institutions, restructuring experts and borrowers on emerging policy approaches and market practices that could prove effective to support a smooth transition out of debt overhang issues. It does not seek to recommend a particular set of measures.

The FSB is inviting comments on this Discussion Paper and the questions set out below. Responses should be sent to fsb@fsb.org by Friday 8 April 2022 with the subject line "Approaches to Debt Overhang Issues of Non-Financial Corporates". Responses will be published on the FSB's website unless respondents expressly request otherwise.

1. *How do creditors or investors assess the viability of a company in the current environment, given the possible transformation of business environment and consumption patterns following the COVID-19 crisis, and considering a need to swiftly process a high number of (re-) assessments as government support measures phase out?*
2. *What type of market-led mechanisms can help determine corporate viability? How could such market-led mechanisms for conducting due diligence be incentivised or supported?*
3. *How can governments and financial authorities create favourable conditions to provide incentives for lenders and debtors to engage in corporate debt restructurings and to allow market exit of non-viable companies in a timely fashion?*
4. *Is there likely to be a need to swiftly process a high number of restructurings as government support measures phase out?*
5. *How can favourable conditions be created to incentivise investors to provide new financing to distressed but viable companies, for example through equity capital and in particular for SMEs? What other (new) forms of market-based financing may be used to address debt overhang issues and how?*
6. *How can public policy support private sector financing for a smooth transition out of the debt distress post COVID? Which forms of public-private partnerships can be considered effective, and under what conditions?*

Table of Contents

Executive summary

Extraordinary policy response by public authorities has been key to limiting the economic fallout of the COVID-19 pandemic. At the same time, the massive public credit provision (both directly and through loan guarantees) has resulted in an unprecedented level of debt of non-financial companies. While cash holdings have risen along with debt levels in some jurisdictions, countries' aggregate net debt to GDP positions have generally increased during the pandemic. Against this backdrop, the FSB report on COVID-19 support measures published in April 2021 identified debt overhang as a significant risk that could arise from prolonged policy support measures.

Debt overhang of corporates and individual entrepreneurs could create a drag on economic recovery of jurisdictions and pose risks to the financial stability through: (1) underinvestment by viable corporates due to excessive indebtedness; (2) misallocation of resources by financing unviable corporates, and (3) lower productivity due to loss of entrepreneurial capacity. There might also be a risk of widespread defaults and insolvencies, giving rise to financial stability risks. Moreover, there is an inherent interconnection between the soundness of lenders and sovereigns.

A sound financial system is critical to addressing debt overhang issues, and vice versa. As providers of finance, financial institutions play an important role in resolving systemic-scale debt overhang issues by participating in the restructuring of debt, levering on their abundant information about borrowers. By the same token, financial intermediaries are affected by the adverse economic effects of debt overhang through the performance of their clients and credit portfolio. Financial authorities therefore have a role in preventing the materialisation of financial stability risks from debt overhang issues and in incentivising financial intermediaries to be part of the solution to these issues.

This discussion paper looks at debt overhang issues from three angles: (1) how to assess companies' viability in the context of COVID-19; (2) how to facilitate and incentivise timely restructuring and refinancing of the debt of viable companies and how to facilitate exit of unviable companies; and (3) how to deal with a large number of companies with debt restructuring needs, with a particular view to small and medium-sized enterprises (SMEs) and micro companies.

The viability of companies post COVID-19 needs to be assessed on a company-by-company basis. While certain sectors or types of companies may be particularly hard hit by the pandemic, the impact on profitability and balance sheets may vary across jurisdictions, sectors and type of firms. Moreover, at a company level the trajectory of the gross and net (of cash and cash-like activities) debt positions may diverge as precautionary cash holdings may have risen along with corporate debt. Assessing viability on a firm-by-firm basis may pose challenges where assessments need to cover a large number of companies and in a limited time span.

Attracting new long-term equity investments to viable companies as well as other capital market solutions can be helpful to restructure companies' balance sheets. Banks' financing could be complemented by capital-market-based solutions which provide further options for structuring the turnaround of a company. Borrowers and lenders may not have sufficient incentives to act early to enter debt restructuring plans, because when loans are non-performing, solutions that do not negatively impact bank balance sheets may be difficult to achieve. Moreover, market-based investors may have better capacity and expertise for dealing with distressed businesses. However, these capital markets solutions are generally only available for large- and medium-sized companies with growth potential, whereas it is more difficult for small and micro companies to access these solutions. For smaller firms, past experience in at least one jurisdiction shows that fiscal incentives can help to strengthen firms' capital position by incentivising equity injections.

Different types of out-of-court debt workout procedures may support coordination in debt restructurings and facilitate the exit of non-viable companies. In the context of COVID-19 crisis, simplified procedures may be an effective tool to process a high number of restructuring of SMEs.

In some jurisdictions, debt overhang issues of micro companies, and natural persons who run businesses (i.e. self-employed and sole proprietors) present additional challenges. Simplified procedures and debt restructuring of natural persons may be needed to address this issue.

This discussion paper discusses debt overhang issues by referring to several examples of policy approaches put in place in FSB member jurisdictions to date and emerging industry practices. They include, for example, systematic classification of distressed companies and standardised restructuring solutions, and mobilisation of private sector resources by building private-public co-funds or by supporting banking sector's code of conducts. Another relevant policy example refers to speeding up restructuring procedures that involve SMEs.

1. Introduction

Extraordinary policy response by public authorities has been key to limiting the economic fallout of the COVID-19 pandemic. Swift and sizable policy responses helped mitigate the adverse effects of the shock on the real economy and the financial system. Together with the increased resilience since the Global Financial Crisis, these measures were instrumental in preventing a very long recession and a systemic financial crisis.

At the same time, the massive public credit provision and public guarantees has resulted in unprecedented levels of non-financial company debt.[1] While high corporate indebtedness was a concern before the outbreak of COVID-19 in some jurisdictions, support measures in response to the pandemic may have exacerbated economic and financial vulnerabilities in the form of excessive debt. The BIS estimates that the value of debt repayments due in the next two years has significantly increased in both AEs and large EMEs and, in some countries, it exceeds 50 per cent of net income. [2]

As the COVID-19 crisis moved from a liquidity phase to solvency and recovery phases, the focus of policy discussion has also shifted.[3] In the initial phase of the crisis, policy priority was given to providing liquidity to the real economy. Unprecedented packages of fiscal and other support measures as well as accommodative monetary conditions were crucial in preventing distressed but otherwise viable companies from being liquidated. In particular, large support packages such as government guarantees, debt payment moratoria, insolvency moratoria and grants have kept the number of insolvency cases below the level expected from past crisis experiences in many jurisdictions (Box 1). [4]

Box 1: Bankruptcy filing moratoria during COVID-19

Against the backdrop of the economic crisis triggered by the COVID-19, several European countries, including Spain, Germany, the Czech Republic, Luxembourg, Portugal and France, have implemented insolvency moratoria.[5] For instance, Spain suspended until 30 June 2022the requirement for debtors to file for bankruptcy, i.e. voluntary filing (*concurso voluntario*) and stopped their creditors from initiating filings (*concurso necesario*).[6] Other jurisdictions such as Italy, Switzerland and Turkey have temporarily

---

1 IMF (2021)

2 For details, see the BIS (2021)

3 The pandemic and the economic situations are evolving rapidly. Before the summer many countries were easing the lockdowns and the prospect for a speedy economic recovery seemed within reach. More recently, new variants of COVID-19 and the rising number of infections have resulted in new lockdown measures in a number of jurisdictions, as well as the impositions of various conditions for resuming normal activity, such as the need for vaccination and "green passes". To what extent these developments will affects the prospective economic recovery is unclear.

4 Interim stabilisation measures reported by FSB jurisdictions include moratoria to insolvency filings by creditors, automatic or by court decision (upon debtor request), some with simplified evidence assessments for moratoria. Other jurisdictions implemented higher thresholds to initiate formal insolvency processes, a suspension or relaxation of management's duty to file for insolvency, an increase of the statutory timeframe for a company to respond to a statutory demand or bankruptcy proceeding, or a prolongation of stay periods triggered by start of in court or out-of-court restructuring procedures.

5 This measure has also been adopted in Russia, albeit only for companies in sectors especially affected by COVID-19 (such as transportation, culture, leisure and entertainment, tourism and hospitality) and for companies considered to be of strategic or systemic importance.

6 In normal circumstances, the Spanish Insolvency Law stipulates that the filing may be made by any of the creditors or by the debtor firm itself. Indeed, the debtor is required to file for insolvency within two months of becoming insolvent (presumed to be after three months of default on payment of taxes, social security contributions or wages). If no filing is made in the prescribed time, it is presumed not to be a "fortuitous" but rather a "guilty" insolvency (*concurso culpable*) for which the firm's management is responsible. This, among other penalties, may include the management being held personally liable for the debts of the firm that remain unpaid after its assets have been liquidated.

suspended the possibility of creditor initiated filings. Countries opting for a middle path include Singapore (where until October 2020 creditors could initiate filings, albeit with more stringent criteria) and Australia and India[7] (where creditor-initiated filings have been restricted through the application of more onerous requirements for creditors).

An insolvency moratorium aims to prevent firms that experience considerable short-term losses and financing shortfalls attributable to exogenous circumstances, but that have viable projects in the medium and long term, from being subject to bankruptcy proceedings and, potentially, liquidation at times of extreme economic uncertainty, when it is difficult to distinguish between viable and non-viable firms. The moratorium also aims to prevent a congestion of bankruptcy courts that would impair the value of assets of distressed corporates because of judicial backlogs and prolonged insolvency procedures.

However, if maintained over time, a bankruptcy moratorium may contribute to exacerbating excessive indebtedness and increasing the survival rate of unviable firms.

These measures likely alleviated economic damage stemming from a surge in bankruptcies,[8] and provided financial institutions with time to assess the viability of corporates and businesses as more information became available. As the economy and companies start to recover public authorities are increasingly expected to prepare to address the issues stemming from a potentially excessive rise in firms' indebtedness. The FSB report on COVID-19 support measures published in April 2021 raised debt overhang as a main risk of prolonged policy support.[9] Notwithstanding this, the actual magnitude of problems stemming from excessive indebtedness in the corporate sector is still highly uncertain, as aggregate data show that firms in some jurisdictions have increased their financial liabilities while accumulating cash savings; as a result, differently from their gross financial leverage, the net leverage may not have increased (and in some cases have fallen) compared with its pre-pandemic level.[10]

The aggregate rise in corporate debt following the COVID-19 outbreak, however, masks substantial heterogeneity in its distribution by firm types or sectors. For those corporates and individual entrepreneurs that increased their net debt since the COVID-19 outbreak, there is an increasing need for debt restructuring or liquidation. If the earning capacity of corporates and individuals does not substantially exceed their pre-COVID-19 level once the pandemic disappears, debt overhang is likely to be an issue. Although highly indebted companies may be able to remain in the market as long as lenders roll over debt or grant them longer-term loan contracts, the higher debt levels could create debt overhang issues and affect their long-term viability and hence their solvency.

---

7 In India, restrictions were placed on initiation of corporate insolvency resolution process for any default occuring during a one year period starting from June 2020. The period of restriction has since ended.

8 Indeed, government guarantees, debt moratoria and other direct measures of support such as grants helped firms to counterbalance the fall in revenues due to the lockdown measures. The unprecedented fiscal expansion supported corporate solvency and improved macroeconomic prospects, thereby also reducing business funding costs. Thanks to accommodative policies, businesses have been able to access finance at very favourable terms, with very low levels of credit spreads in historical terms including for very low rated firms. These has brought forward a break in the usual close relationship between bankruptcies and economic activity. (see BIS Annual Economic Report, cited)

9 FSB (2021)

10 The increase in liquidity buffers for non-financial firms has been documented amongst euro area larger listed firms. For the US there is also evidence that net leverage of publicly listed firms has reduced significantly during the pandemic, but not for vulnerable firms. See ECB (2021), page 8; Haque S. and R. Varghese (2021); Benmelech E., (2021).

In addition, following the COVID-19 shock, there is particular concern about a possible "insolvency wave".[11] The subdued number of insolvency cases thus far might suggest that the extraordinary policy responses may have only postponed bankruptcies. The situation could be more critical for SMEs, which play an important role in sustaining employment and promoting innovation in societies. Once they enter insolvency proceedings, they tend to have few options other than liquidation, compared to large corporations. This is partly because of the high costs for reorganization for SMEs relative to their size, leading to an "excess liquidation".[12]

Whether such a "wave" happens will depend on various factors, including whether the recovery of the economy is strong and broad enough to re-establish revenue lines, financial conditions, the terms of loans to endangered companies, and the withdrawal path of government support measures along the recovery. However, if a wave occurs, courts could be overwhelmed by a massive number of insolvency cases which would impair their capacity to deliver timely restructuring of viable firms and liquidation of unviable ones, resulting in an increase in the duration of the processes and the deadweight losses associated with them.[13] This implies there may be a number of unnecessary liquidations of viable companies (i.e., liquidations in which the firm's going concern value exceeds its liquidation value) that could leave a long-lasting scar on the economy unless dealt with appropriately.

The severity of the issue differs across geography and sectors, depending on the number of infections, the extent of the support measures, the structure of the economy and the legal frameworks. Company debt was already at high levels in several jurisdictions before the pandemic, and the COVID-19 lockdowns tended to reinforce the dispersion across economies.

For all countries, the increase in net debt has been substantially less than the increase in gross debt, reflecting the simultaneous build-up in cash holdings. Nevertheless, countries with relatively large increases in level of gross debt since 2019 generally show also relatively large increases in the net debt level, calculated at an aggregate level for each country. (see Annex, Graph 1 Panel 1).[14] In general, most of the increase since 2019 has been financed through bank loans, with differences across jurisdictions (Graph 1, Panel 3 and 4). Aggregate trends also mask differences across industries and types of firms (Graph 2).[15] Sector-wise, for example, the airlines and hospitality sectors have been most severely affected in terms of increasing leverage. Recent analysis shows that small and medium-sized enterprises in both advanced and emerging market economies have been disproportionately affected by lockdowns.[16] On the lenders' side, banking sector non-performing loans and provisioning are already quite heterogeneous across jurisdictions, and banks' balance sheets may have different level of resilience if more adverse scenarios were to occur (Graph 3). It should be noted in parallel that buoyant conditions in the

---

11 World Bank (2021). Banerjee, R., J. Noss, J. M. Vidal Pastor (2021)

12 Greenwood (2020) points out that in fact liquidation (Chapter 7 of the US bankruptcy code) is the main choice by small corporates (e.g. more than 95% of corporates with \$0 - \$1M of liabilities), in contrast to the majority (e.g. more than 70% of corporates with \$1B+ of liabilities) of large corporates choosing reorganization (US Chapter 11) in their insolvency procedures.

13 European Bank Coordination "Vienna" Initiative (2012)

14 Gross corporate debt is based on the BIS statistics regarding credit to the non-financial sector. Net corporate debt is calculated by subtracting currency and deposits of non-financial corporations on the countries' financial balance sheets from gross corporate debt. For multinational corporations, levels of debt to GDP are calculated on a consolidated basis and are attributed to the jurisdiction of the parent company.

15 Banerjee, R., J. Noss, J. M. Vidal Pastor (2021) cit.

16 See, for example ECB (2021)and the World Bank *Business Pulse Survey*.

equity markets have resulted in a boom in equity issuance, [mostly in the United States], particularly for follow-on issuance (Graph 4).

This divergence suggests that debt overhang issues may well also have different relevance and features across jurisdictions. For example, recent evidence on US corporates suggests that zombie firms—defined as nonviable firms with low growth prospects that survive on public sector support, subsidized loans or loan refinancing—are not an important feature of the U.S. economy so far and did not benefit disproportionally from the improvement in credit market conditions resulting from the unprecedented fiscal and monetary support following the outbreak of the COVID-19 pandemic.[17]

This means that there are no "one-size-fits-all" issues nor solutions that are immediately applicable across jurisdictions. In any case, forward-looking actions at an early phase, such as assessment of companies' viability and debt workouts, are key, even when the company is still able to satisfy its immediate debt repayments.

Many international organisations and think tanks have examined the issues of debt overhang in a post-COVID-19 environment and proposed a range of policy solutions. Annex box 1 lists a few of these policy papers, whose different perspective and approaches reflect the multifaceted nature of debt overhang and the different angles that can be taken to address the issue. Some papers propose actions that governments could take, including the way in which public support measures could be used or should evolve. There is also notable consistency in the policy discussion and proposals, which tend to point in the same direction and have similar policy implications. All the papers point to: i) the importance of solvency support measures involving forms of equity financing on top of debt restructuring for viable firms; ii) the need for an improved set of debt restructuring and insolvency tools and procedures; iii) the importance for authorities and financial institutions to start planning and take early action where possible.

In this context, the objectives of this discussion note are to share emerging industry and policy responses to address the debt overhang issues, as well as a conceptual framework for considering policy implications in light of COVID-19 specific challenges.

This discussion note takes a financial stability perspective and adopts a practical approach to the issue of debt overhang, in four steps:

(i) the assessment of debt overhang and corporate viability in the context of COVID-19;

(ii) solutions for balance sheet restructuring so that the amount of debt repayment is commensurate to their earnings, and for attracting new capital for viable firms, including incentivising equity financing;

(iii) incentives for exit of unviable firms (financially unviable even after debt restructuring, or business unviable);

(iv) procedural avenues to implement the measures presented in points (i) to (iii).

[17] Favara, G., C. Minoiu, and A. Perez-Orive (2021)

In the paragraphs that follow, the note explores these steps and some of the specific challenges in a COVID-19 or post COVID-19 environment, and some potential solutions that jurisdictions have adopted or considered, or relevant industry practices or points of attention raised by private sector experts at the FSB workshop on debt overhang held in May 2021. These are the approaches that the private and public sector have started exploring to address the COVID-19 debt overhang issues.

Accordingly, the discussion in the note is organised as follows. Section 2 discusses how the issues of debt overhang and unviable corporates may have financial stability implications. Section 3 discusses how to distinguish viable firms from unviable ones, in particular where large numbers of assessments have to be performed. Section 4 presents considerations with a view to facilitating balance sheet restructuring of viable firms, including attracting new money to support them. How to facilitate smooth exit of unviable companies is discussed in section 5. Section 6 explains procedural avenues for the restructuring of debt. Section 7 addresses issues specific of micro-corporates and self-entrepreneurs.

2. Implications for financial stability

The excessive indebtedness of corporates and individual entrepreneurs could induce three longer-term problems: underinvestment caused by debt overhang at viable corporates, resource misallocation to unviable corporates, and productivity loss due to loss of entrepreneurial capacity.[18] Economists have long argued about the harmful effects that these issues – particularly the first two - pose in securing strong recovery and growth of companies and the broader economy.

- **Underinvestment caused by debt overhang**. The standard definition of the term "debt overhang" refers to an excessive debt burden incurred by non-financial corporates. This reduces the incentives for the corporates to raise money for investments with positive net present value because the proceeds from these investments would mostly service the debt held by existing creditors instead of paying out to current shareholders or new investors.[19] Debt overhang then leads to underinvestment and so a decline in the output and productivity of the economy.

- **Resource misallocation to unviable corporates**. A company is regarded as unviable when the liquidation value of its assets is higher than its value as a going concern. Unviable companies that are not liquidated prevent other firms from seizing business opportunities, discourage the entry of new companies, and trap human and other resources, all leading to lower aggregate investment or economic growth.[20] While the

---

[18] One channel is through the negative real effects associated with a lack of innovation activities such as R&D. For instance, both Armour (2004) and Armour and Cumming (2006), based on cross-country analyses, find that creditor-friendly bankruptcy codes, measured by the number of years before a bankrupt individual would obtain a fresh start, deter the demand for venture capital and private equity, which are used to finance high-risk innovative start-ups with limited access to other sources of funding. Armour, J. (2004);Armour, J. and D. Cumming (2006)

[19] Myers, S. C. (1977)

[20] "Zombie firms" are a subset of unviable firms and typically characterised as heavily indebted and that are unable to cover debt servicing costs from current profits over an extended period of time (CGFS definition). They can survive through refinancing by their main bank, supported by government policies or regulatory forbearance. Caballero, Hoshi, and Kashyap (2008) define zombie firms as companies that receive subsidized credit. Alternatively, Fukuda and Nakamura (2011) set three criteria of lack

urgency of the situation required rapid help, it would be concerning if the massive policy support packages were to keep unviable corporates in the market Countries with larger credit guarantee schemes have seen less reallocation of credit across firms.[21] The issue of potential resource misallocation to unviable corporates may be more relevant in the post-COVID-19 period, because structural changes in the global economy may require a faster and significant reallocation of resources.

- **Productivity loss due to the loss of entrepreneurial capacity.** Firms with excessive debt can be liquidated with their assets used to repay creditors. However, in the case of an individual who is a small business owner or runs his/her own business as a natural person (self-employed and sole proprietors), the individual may remain liable for the debt remaining after any asset liquidation. In the absence of an effective debt discharge framework for individuals, the remaining excessive debt could become an impediment for economic growth and recovery as it would severely constrain the economic activities of the potential investment and innovation. Where future income of individuals is seized on a long-term basis, incentives for entrepreneurship will be hampered.

The issues of debt overhang and unviable corporates can have significant financial stability implications. The adverse effects on the financial system can come in the following two stages:

- **First-round effect**. The deterioration of the debtor's financial conditions leads to funding losses, higher credit costs and a decline in the value of the lender's assets.[22] Financial stability risks would initially materialise in the banking sector, in particular in the case of SMEs, where banks are usually the main lenders.

- **Second-round effect**. The failure to resolve debt overhang of debtors and ever-greening of claims on unviable companies (i.e., zombie lending) may lead to a decline in banks' profitability due to the continued high risk of impairment of assets. Moreover, if such practices are widespread, with viable companies continuing to be burdened with excessive debt and/or unviable companies being kept alive, a decline in investments and a drop in productivity could lead to macroeconomic stagnation which, in turn, would reduce bank profitability further.

Indeed, so-called “zombie firms” – unviable firms kept alive thanks to public support programmes and bank lending actions - and poorly-capitalised banks may create such a vicious circle. When coupled with poorly-capitalised banks, the issue of unviable corporates leads to “zombie lending”. Poorly capitalized banks have incentives to refinance zombie firms (“evergreening”)

---

of profit, excessive external debt, and expansion of external borrowings, all of which zombies meet. Furthermore, Banerjee and Hofmann (2020) identify zombies as firms whose Tobin's q fall below the sector's mid-value and whose interest rate coverage ratio are negative. Favara, Minoiu, Perez-Orive (2021) identify zombie firms to have leverage above the sample annual median, interest coverage ratio (ICR) below one, and negative real sales growth over the preceding three years. See also McGowan et al. (2017); McGowan et al. (2018); Acharya et al. (2019); Acharya et al. (2020)). However, the problem of most of those definitions is that they are likely to misclassify financially distressed firms as zombie firms (Nurmi et al., (2020)) because they rely exclusively on firm-level data. To address this shortcoming, Alvarez et al. (2021) use bank-firm level data to develop a definition of financially distressed firms and a definition of zombie firms. A firm is financially distressed if it is at least 5 years old and it has both an interest coverage ratio lower than 1 and negative equity during at least 3 consecutive years, while a company is classified as a zombie firm if it is financially distressed and has received new bank credit.

21 BIS (2021)

22 The deterioration in the borrower’s financial translates in higher credit risk for financial creditors as well as in a decline in the value of the assets that may have been used as collateral. in the case of banks, the repercussions on the value of the loan portfolio impact the capital base (through impact on RWA calculations and provisioning for reclassified loans).

instead of recognising losses.[23] Recent literature has also shown that if reorganisation and restructuring is inefficient and costly, zombie firms are more likely to emerge because banks become more hesitant to stop evergreening and going into a reorganization or restructuring process.[24] Ever-greened companies will survive for a certain period, but their productivity will fall, and they will eventually default, with negative effects on the bank balance sheet (second-round effect), which will make it more difficult for banks to recognize the loss and restructure the debt. Once this cycle sets in, fixing the problem becomes much more difficult.

A key question is how banks would respond to a solvency shock. So far, stress test results suggest that banks' capital cushions are sufficient to withstand adverse scenarios, partly thanks to the G20 reforms after Global Financial Crisis.[25] However, in the face of adverse developments, loan losses may weaken the financial positions of banks and they might reduce lending, thereby further impairing the potential for recovery.

In this regard, financial authorities have an important role to play in addressing systemic debt overhang issues before the pandemic develops into a systemic solvency crisis.[26] The first-round effects suggest the importance of prudential and supervisory measures that support prompt and accurate loss recognition, capital adequacy in normal times, and adequate forward-looking provisioning. The second-round effects points to the need for bank supervisory authorities and other government branches to consider potential macro-financial feedback loops and the important role they can play in addressing systemic debt overhang issues. Supervisors in particular play an important role in discussing banks' approach to credit risk and their approach to restructuring and insolvencies, taking into account the loop between banks' financing decisions, loan losses recognition and capital resilience going forward.

Box 2: Implications of debt restructuring on financial stability: Lessons from India

In August 2001, the Reserve Bank of India (RBI) designed Corporate Debt Restructuring (CDR) as a mechanism for restructuring debt, without the need for an asset quality downgrade if the restructuring plan met certain conditions. The rationale was to allow restructuring of loans to otherwise viable firms and help minimize losses to both borrowers and creditors through an orderly and coordinated

---

23 Banks may want to engage in the 'evergreening' (i.e. rolling over) of existing loans to avoid loan loss recognition and a deterioration of capital buffers. It therefore follows that especially low-capitalised banks have an incentive to lend to zombies (see Laeven et al (2020) and reference therein, e.g. Peek and Rosengren (2005), Caballero et al. (2008), Giannetti and Simonov (2013), Bruche and Llobet (2014), Schivardi et al. (2019), Acharya et al. (2020)). There is also evidence that these firms make strategic defaults. In other words, they decide to stop repayments on loans granted by poorly capitalised banks so as to obtain a debt restructuring agreement, to increase the amount of such loans or extend their duration (Mayordomo et al. (2020). . However, under the current IFRS 9, refinancing implies a presumption of a "significant increase in credit risk", entailing a substantial rise in provisions.

24 Jordá (2020)

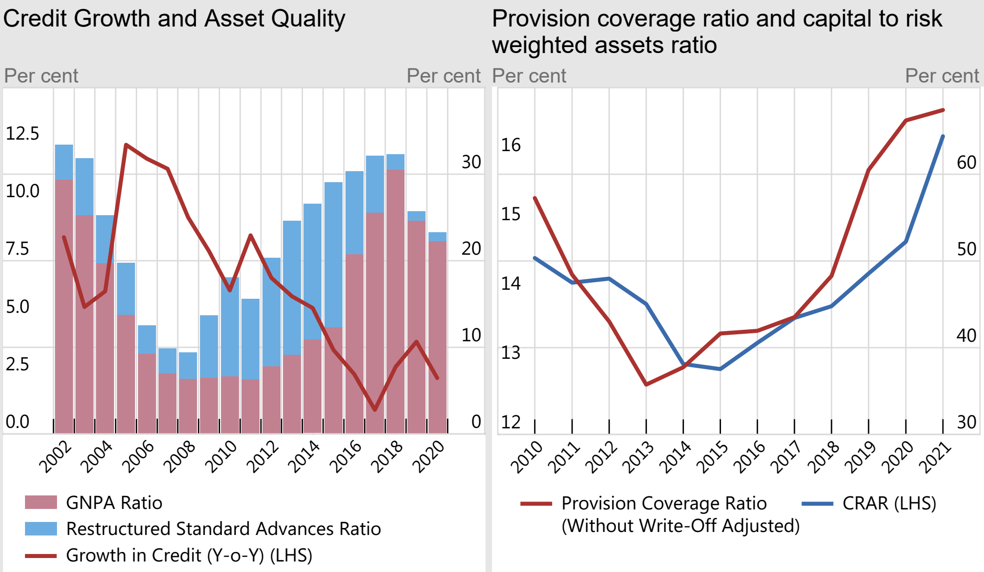
25 ESRB (2021) finds for example that the financial stability risks associated with corporate insolvencies for banks are manageable. As long as insolvencies develop according to the baseline scenario, the resulting losses and loss allowances should be manageable for European banks which entered the crisis in a relatively strong position. Risks to the banking system are limited to the sectors which are most affected by COVID-19 – which account for approximately 5-15% of total non-financial corporation loans across most countries (although there is considerable variability across countries). In the US the results of the annual stress tests for 2021 indicate that large banks continue to have strong capital levels and could continue lending to households and businesses during a severe recession. The stress test finds that despite similar loan losses compared to the exercise in 2020, projected provisions for loan losses are smaller due in part to the large allowances firms built in 2020 in response to the COVID-19 event and changes to accounting rules.

26 In the first phase of the pandemic, FSB member jurisdictions have paid attention to the risk of unproductive allocation of resources to unviable corporates and reported several safeguards applied in their jurisdictions to ensure that financial government support during the pandemic is allocated to viable firms only. For instance, in Spain firms with NPLs generated before the Covid-19 pandemic were not eligible for government-backed loans, i.e., public guarantee programmes. In later phases of the pandemic, authorities have enacted bank resilience policies (such as stress testing exercises, prohibition of capital pay-outs to reinforce the banks' capital base and supervisory messages on appropriate provisioning policies).

restructuring program. The CDR mechanism worked well initially, and the scope of forbearance was expanded after the outbreak of the global financial crisis (GFC). The CDR scheme and other restructuring schemes that followed were necessary at the time as India did not have an effective bankruptcy law in place. The prevailing law on enforcement of security income framed in 2002 was not very effective. Subsequently, the asset quality forbearance character of the scheme was used more as a tool for avoiding recognition of non-performing assets (NPAs) and less for their effective resolution. There was a spike in the level of restructured standard assets (RSA) largely in the fast-rising infrastructure credit on the back of sharp slowdown of economic growth and data showed that by March 2011 the RSA assets were higher than the gross NPAs (GNPA) of the banking system (Graph A LHS). Since 2014, a number of measures to develop an effective bankruptcy regime and secondary market for stressed loans have been initiated.

Subsequently in 2015, the RBI conducted an asset quality review (AQR) for realistic assessment of NPA stress in the banking sector. As a result, the GNPA ratio started rising, reflecting stress accurately, while the RSA shrank. The banks had to allocate greater provisions for the rising NPAs (Graph A RHS). The government had to undertake massive capital infusion in public sector banks. A few banks with very weak balance sheets were placed under the prompt corrective action. The capital scarcity in banks affected their risk-taking behaviour and this, coupled with lower credit demand resulted in a sharp fall in credit growth.

Developments in light of the Indian Asset Quality Review of 2015 **Graph A**



Source: RBI

As part of a concerted push towards resolution of stressed assets, a set of legal and regulatory measures have been taken since 2017. Through a specific legal amendment, the RBI was given explicit powers to direct banks to initiate insolvency proceedings against specific borrowers under the provisions of the newly enacted Insolvency and Bankruptcy Code. The RBI also introduced a revised framework for resolution of stressed assets (‘Prudential Framework’), with clear disincentives for delayed implementation of resolution after recognition of default.

Although the banking sector revived from this stress just before the pandemic hit, some important policy lessons were learnt and implemented when a fresh restructuring scheme, a tailored carve-out under the Prudential Framework, was designed in 2020. The scheme was designed only for viable firms facing stress on account of the pandemic and banks were given specific deadlines to identify and initiate resolution plan from them (RP). A higher provisioning requirement and clear disclosure in the financial statements about the RP ensured ring-fencing the banking system as well as transparency in asset quality recognition. Restructuring of large accounts needed to be ratified by an independent expert committee for compliance with required processes. For cases not covered under the 2020 restructuring scheme, RBI's steady-state Prudential Framework and the Insolvency and Bankruptcy Code operational since 2016, provided a framework for time-bound resolution process through collective decision making by the creditors.[27]

3. Distinguishing viable and unviable corporates

3.1. Overview

The first step to address a financially distressed company is a triage process to assess whether the company is viable without debt restructuring or recapitalisation, viable but needs restructuring or an injection of equity, or unviable and hence should exit the market. Viability is defined generally by reference to the net present value (e.g. DCF) of the company as a going concern exceeding the liquidation value of its assets. In this sense, a fully-fledged viability assessment inevitably involves a forecast of future cash flows of the borrower.

Among the relevant stakeholders, lenders normally take the lead in assessing viability and assess viability on a continuous basis, along a spectrum of categories,[28] levering on the information gathered during their on-going lending relationship. They typically undertake a comprehensive credit risk assessment, considering the company's financial metrics, business model, and management performance. They apply early warning indicators related to the credit relationship and debt repayment profile (e.g. overdue or suspended interest payments and amortization instalments; overdue credit card invoices). Also, it is usually the major creditor that initiates an insolvency process or another debt enforcement procedure such as foreclosure, i.e., seizing the assets that were pledged as collateral.[29]

Assessing the viability of non-financial firms has its challenges under the COVID-19 environment because of:

- **Uncertainty about the recovery, structural changes, and government actions.** It is not only when and how quickly the economy will recover that is uncertain. Several industries such as retail have also experienced a rapid transformation or accelerated pre-existing trends as a result of the COVID-19 event. Consumer habits, work habits, commuting patterns and other aspects of economic environment have been altered to various degrees. To what extent and in which sectors these changes are permanent are hard to determine at this juncture. Also, projection of a borrower company's future cash flows hinges in part upon when and how government support measures might be lifted.

---

27 Vishwanathan, N.S. (2018)

28 For example: 1. Healthy firms: Firms that are economically viable, have low leverage, and have ready access to financing; 2. Financing constrained: Firms that are economically viable, have low leverage, but have limited access to financing (typically small firms and start-ups); 3.Liquidity challenged: Firms that have an economically viable business model but have too much financial leverage and are illiquid; 4. Solvency challenged: Firms that have an economically viable business model but have too much financial leverage and are insolvent: 5.Structurally unsound firm: Firms that are not economically viable under their current business model. See G30 (2020) Reviving and Restructuring the Corporate Sector Post-Covid: Designing Public Policy Interventions.

29 Djankov, S., O. Hart, C. McLiesh, and A. Shleifer (2008)

- **Exacerbated information asymmetry.** Due to measures to lessen the administrative burden of companies, information available to creditors and other stakeholders may not be timely or comprehensive. The assessment of the viability of the large number of SMEs may be even more challenging as information in their regard is more scarce already due to the limitations of reporting requirements.[30] A related key feature of the current crisis is that traditional indicators may not be reliable because policy support measures such as debt moratoria may render the projections of key financial metrics more difficult and conceal solvency problems.

- **Enhanced need for creditor coordination.** The need for facilitating private creditor coordination to avoid collective action problems (e.g., the holdout problem) may become more prominent post-COVID-19, if a systemic debt overhang requires debt restructuring on a large scale.[31]

Failing to distinguish between viable companies which need to restructure their balance sheet and unviable ones - that need to exit the market so that their resources can be used more productively - can have negative systemic externalities. These are the deadweight costs of unnecessary liquidation of viable companies on the one hand and the permanence of zombie firms in the economy on the other. Post COVID-19 there is a risk that the negative macroeconomic consequences of an erroneous assessment are larger than usual, in terms of the need for prompt reallocation of released capital and labour and for the cascading effects among firms, suppliers and consumers and ensuing aggregate effects on investment and consumption. Hence the importance of viability assessment. In the context of COVID-19, a proper assessment may also help governments improve the targeting of ongoing public support measures and their unwinding.[32]

Ensuring transparency and information that can be used by market participants to assess a firm's viability is critical. Capital markets can also play a critical role in facilitating lenders', investors' and other stakeholders' determinations of viability. Appropriate transparency and disclosures as well as efficiently functioning markets is required to ensure that this is effective. Measure that can assist include:

- **Financial reporting and disclosure**. Consistent application of financial reporting can play an important role in providing the market with information. The expected loss approach of IFRS 9 aims to make impairment recognition timelier and more forward-looking than that of the incurred loss approach of IAS 39 and reacting to new and forward-looking information, including macroeconomic information, as it is received.

30 Diez et al. (2021)

31 Different actors may assess the viability of the same company differently. These include creditors, the firm's management, public authorities, shareholders and markets, courts, and independent professionals. Their assessments could differ from one another due to their different rankings in any insolvency, conflicts of interests, biases, different information sets, expertise, and perception of the externalities associated with the existence of the company. In addition, these assessments also interact with one another.

32 FSB (2021) – cited. Authorities can consider ways to lessen the costs accompanied by those exceptional support policies during the implementation. The FSB report makes the point that implementing blanket support measures without consideration for individual firm viability is not a viable long-term solution. The report suggests a range of considerations: one is to narrow the scope of support measures or to tighten the terms upon which support is provided so that viable corporates would not take on unnecessary liability; yet another is to require beneficiaries to opt into a support scheme so that financial institutions can get more information of their customers, which would help later viability assessments and restructuring processes.

Consistent provision of this information should help ensure that markets provide a forward-looking point in time estimate of firm viability.

- **Market Integrity**. The quality of the firm valuation/viability assessment that public markets provide will depend on their integrity. If markets are illiquid or distorted, this information may be less useful for making viability assessments.

3.2. Emerging practices and policy implications for viability assessment

The starting points for the assessment of the viability of a company are the individual financial situation, business prospects and management perspectives. Key elements of a business viability assessment are the agility, adaptability and quality of the firm's management to respond to crises and adjust its business models, which cannot be easily measured based on financial indicators. Instead, it is important for creditors – or other stakeholders performing the assessment - to be in close contact with the management of the borrowers, and to monitor their conditions continuously.

Where a high number of viability assessments, possibly of SMEs, have to be performed in a short time, banks may seek to develop structured approaches to facilitate a swifter path to the application of restructuring tools to corresponding restructuring needs. In one example of a structured approach which was presented by stakeholders, banks first identified the *sectors* that had been permanently (or structurally) scarred versus those that had suffered only short-term dislocations. In the next step, they look at the prospective business models of individual firms in question.

A bolder proposal is a systematic classification of distressed companies and standardized restructuring solutions, a framework in which stakeholders of a distressed company assess its viability per a predetermined scheme based on financial indicators. This is based on financial indicators (e.g. debt to EBITDA as a proxy of the sustainability of debt, and the recapitalisation needs expressed in percentage of total equity). The idea is to classify companies into buckets as a first step, only by looking at financial indicators. The state of viability represented by each bucket would match corresponding restructuring measures: according to the classification of the borrower in a specific bucket, appropriate restructuring tool(s) may be chosen in accordance with the bucket, ranging from debt haircut to just debt refinance depending on the bucket, and applied semi-automatically based on a final individual assessment.

A similar speedy solution is the idea of "Super Chapter 11" proposed by Miller & Stiglitz (1999).[33] Their proposal is to create a procedure that resembles Chapter 11 of the US bankruptcy laws but with a quasi-automatic application of restructuring tools, for example haircut of existing claims and possibly government injection of fresh funds to debtors, to match a certain viability assessment.

Approaches which seek the swift application of restructuring tools to a high number of companies may however be delayed because the relevant information is not readily available, in particular regarding SMEs. A policy solution to help viability assessment is to make available common

[33] Miller, M. and J. Stiglitz (1999)

information sets for creditors in order to exploit economies of scale. For instance, creditors can leverage on cooperation with credit bureaus or seek a pooling of resources among creditors for this purpose. Governments may be able to generate and enhance the availability of data, such as tax or payment data.[34] Hybrid or out-of-court workout mechanisms may also include requirements for private and public creditors to share firm-related information, and this can support the assessment by private creditors of the firm's viability and repayment capacity.

Another policy solution could include supervisory expectations or targets for viability assessments to be conducted by supervised banks for new under-/non-performing exposures, or higher provisioning requirements in the absence of viability assessment and debt enforcement or restructuring measures applied.[35] Generally speaking, supervisors may raise banks' attention to the need to enhance their resources, including tapping poll of experts, to perform viability assessment with a view to debt restructuring over a large number of cases.

3.3. Monitoring by authorities of the systemic debt overhang

In some jurisdictions, national authorities have initiated monitoring of the systemic debt overhang in the economy. In some cases their assessments distinguish between short-term viability and liquidity needs - quantified thorough earnings and cash buffers relative to liabilities - and a medium-term viability assessment quantified through leverage and capital sufficiency.

Box 3: Monitoring of debt overhang in selected jurisdictions

- **Australia:** ASIC has created a pilot automated tool that assesses the financial vulnerability of the ASX200-listed firms (top 200 listed firms on the Australian Stock Exchange). The tool (known internally as 'C-Five') uses publicly available data. It combines five economic and statistical models to produce an estimate of each ASX-listed firm's financial vulnerability. This monitors mostly large- and medium-sized Australian corporates (noting all monitored firms are ASX listed). The tool uses publicly available data and combines economic and statistical models to produce an estimate of each firm's financial vulnerability, defined as a firm's estimated "distance to default."

- **Hong Kong:** A framework has been developed to analyse the viability of corporates (but not for analysing debt restructuring) from a systemic perspective (i.e. mainly focus on the whole corporate sector). The framework is based on "zombie firm analysis" using data of financial disclosure of listed firms in Hong Kong. In the framework, zombie firms are defined as those with both interest coverage ratio and price-to-book ratio below one for two consecutive years. The former indicator reflects low persistent profitability to cover interest expenses, while the latter reflects weak potential business growth by investors. The identified zombie firms form a watch list for monitoring. The framework cannot cover SMEs due to unavailability of data.

- **Spain:** Spain's Ministry of Economy and Digitalisation is currently developing a new tool in order to assess, from a quantitative perspective, the potential need for debt restructuring measures in the non-financial corporate sector. This methodology has been developed against the backdrop of COVID-19 and to assess the effects of COVID-19 on corporate leverage. The micro-simulation approach also takes into account the asymmetric sectoral impact of the pandemic. The main output from such tool is a medium-term forecast of liquidity needs and

[34] G30 (2020)

[35] Diez (2021)

leverage indicators, by sector and firm size. The model uses data from a database containing financial statements for close to a million Spanish companies. The results allow assessing which sectors could have larger financing needs and which sectors could suffer from debt overhang issues. The methodology is applied to both large and small firms.

In addition, *Banco de España* has carried out an analysis on the impact of the Covid-19 crisis on the financial vulnerability of Spanish firms by means of micro-simulations, breaking down its results by size and sector. The study analyses both liquidity and insolvency risk using several indicators that measure firms' financial position in terms of liquidity, profitability and leverage during the time horizon 2020-2023.[36]

- **US** The US FRB monitors several vulnerabilities associated with the non-financial business sector such as credit to GDP, leverage, interest coverage ratios, net issuance of risky debt, and default rates for leverage loans.[37] The Federal Reserve Board, Federal Deposit Insurance Corporation, and Office of the Comptroller of the Currency monitor financial institutions closely and conduct regular safety and soundness and capital adequacy monitoring, which yields insights into potential debt overhang issues in the financial system. These US financial regulators also supervise financial institutions and conduct regular examinations, oversight, and risk rating of their activities, giving regulators insight into banks' performance and balance sheets, and thereby providing insights into NPLs in the financial system.

4. Restructuring of debt and provision of new money to viable companies

4.1. Overview

Distressed companies that still have an economically viable business model should receive an appropriate balance sheet restructuring. This should be in the creditor's interest in the longer run, in addition to having the positive effects on the broader economy. But in the absence of proper measures or practices this might not happen, leading to lower bank profitability, lower investment and productivity, and financial stability risks (see section 2).

One of the typical challenges for a firm in financial distress is to maintain liquidity over the period of the debt negotiation process. Financial support often comes from the creditors who provide bridge financing to maintain operations of the company during the workout process, under certain preferential conditions such as the priority of the claim.[38] Some academics have

---

36 Blanco R., S. Mayordomo, Á. Menéndez and M. Mulino (2021) (2021).

37 See FSB (2021)

38 The term "DIP financing" ('debtor in possession, DIP) is often used in relation to formal insolvency or restructuring procedures, such as the US Chapter 11 procedure. Bridge financing during private (out-of-court) workouts has a similar economic function to ensure the financial survival of the distressed company during the process of restructuring. During many such processes, the management of the debtor company remains in place ('debtor in possession). The term DIP financing in other contexts generally refers to fresh money provided in the context of restructuring. Creditors who provide this type of new financing to indebted firms to support their debt restructuring usually require priority over existing debt, equity and other claims (e.g. super-priority). Priority of claims is therefore an important procedural incentive for the financing for distressed firms. Not all jurisdictions allow for such priority or for the agreement on such priority. However, a number of jurisdictions give some form of priority to those claims or provide the possibility to agree on such priority within a restructuring arrangement. Within these jurisdictions, measures to encourage their use are: further procedural safeguards regarding collateral and priority and relaxation of thresholds for the access to procedures, which feature this tool. This super-priority can be a useful element provided by restructuring procedures, which support the work out of debt restructuring agreements and are described in section 7.

advocated that governments provide bridging financing to debtors in the specific context of COVID-19. [39]

When the liquidity problems of a distressed firm mutate into solvency problems, there are essentially two approaches: decreasing the amount of debt and/or increasing the amount of equity. Reduction in firm leverage as well as new supply of long-term capital for transition to longer-term sustainable business models may be achieved as a result of bank's credit risk management practices and in-court or out-of-court debt workouts or insolvency procedures, which aim for reaching a proposal either on reduction of debt to a sustainable level in accordance with repayment capacity, and/or injection of fresh money in the form of equity or equity-like instruments. Typical instruments include: debt-to-debt swaps (DDS); debt-to-equity swap (DES); equity raising from the market; crowd funding; and spin-offs[40].

Furthermore, to give a distressed firm a new start, only reducing the debt burden is generally not sufficient. New money can come from parties with different expertise, information sets and generally more optimism or propensity to take the risk which existing debtholders are not willing or capable to take. Capital markets provide a range of financial options for new money, in particular in the case of large- or medium-sized companies. To ensure adequate provision of new funding without increasing debt levels, it may also be important to consider the role of any incentives that create a bias towards debt rather than equity.[41] Moreover in restructuring debt, ensuring fairness vis-à-vis existing shareholders so that they also have the right to participate in the restructured company facilitate the process.

Box 4: Selected debt and quasi-equity (hybrid) instruments

Double convertible debt

Convertible bonds provide the investor with the option to exchange their debt holdings for a predetermined number of shares. Holders can profit if the issuing company's share price rises. Because convertible bonds offer the opportunity to participate in price appreciation of the company's stock, convertibles can be issued at lower coupon rates than normal bonds.

Double convertible bonds include a second (call) option that allows the holder to convert the bond into shares at a fixed share value[42]. The more the share price falls, the more shares the convertible bondholder is entitled to. Eventually, at a low enough price, this provides the holder with enough shares for a controlling stake in the firm.

State contingent debt

State contingent debt/loan contracts incorporate clauses whereby the repayment of principal and interest is linked to the state of the economy, the industry or the business itself; in adverse conditions, payments are automatically halted or significantly reduced.[43] These clauses prevent a situation in which large debt repayment needs translate into a sudden deterioration of economic prospects due to mass

---

39 Skeel, D. (2020). Since the direct lending by government has a shortcoming of crowding out private lenders who might otherwise be willing to provide DIP financing, Skeel suggests the government coordinate some of its funding with private lenders. In his example, the government could agree to take the first 20 or 25 percent of the risk for qualifying loans, either by assuming a portion of the loan or through a guarantee.

40 A spinoff is the creation of an independent company through the sale or distribution of new shares of an existing business or division of a parent company.

41 See FSB (2015)

42 See Brealey R., S. Meyers, F. Allen (2011)

43 See Schiller, R. (2003) *The New Financial Order - Risk in the 21st Century*, Chapter 10: Income-Linked Loans: Reducing the Risks of Hardship and Bankruptcy

defaults (or individual defaults in well-specified cases). Creditors charge higher interest rates to “price” the option of non-payment during certain states of the world.[44] A variant of these state contingent loans are participating loans[45] or revenue financing[46].

Participating loans are loans whose remuneration is contingent upon the results of the debtor firm: repayments fluctuate in line with firm revenues. This is useful in government interventions to smaller firms because management and monitoring of a large portfolio of small equity claims would be unfeasible for authorities. Thus, authorities could adopt an indirect approach, for instance, by using instruments that allow the repayment to be state-contingent (firms that recover most robustly would pay back more), mimicking equity injections.

Preferred equity[47]

Preferred equity offers more expensive but non-recourse financing without dilution. Holders of preferred equity occupy a more senior position than common equity holders in the receipt of dividends and in the event of liquidation. Though their seniority is below that of debt holders, this may not be a deterrent to investors if the preferred equity investment in question refinances existing debt. Tailoring of preferred equity agreements is common practice and can offer further incentives to both parties. An initial delay of dividend payments to offer the firm breathing room in difficult periods can be accompanied by provisions that guarantee preferred holders complete repayment of past dividends, prior to common equity. Companies facing more acute distress may offer additional sweeteners to attract investors, including convertibility into common stock and/or warrants to purchase common stock, both at contractually stipulated prices. [48]

Banks may be reluctant to convert debt to or inject common equity into a restructured company. Since a large part of newly granted corporate loans are backed by public guarantee schemes, lenders may have fewer incentives to provide equity, including through a DES agreement, especially in the case of riskier borrowers. By becoming a shareholder, the lender would lose the guarantee, significantly increasing the risk weight attached to its exposure. From a regulatory standpoint, the equity will also attract a higher risk weight – with a much higher charge given that state guaranteed COVID-19 loans are treated as sovereign exposures. Another hurdle for banks is that in many jurisdictions, their ability to hold equity stakes in non-financial corporates is limited by financial regulation.

Bank capital matters in this context as well. Banks with insufficient capital or provisioning tend to delay taking decisive actions vis-à-vis distressed borrowers that lead to either restructuring or liquidation, because dealing with insolvency cases, including accepting a debt haircut, and loan selling at a discounted price, would often force the bank to recognize losses on these exposures.[49]

---

44 For instance, a firm which sells a product which is traded on an active market (commodity markets), the amount of interest payment could change with the price of the said commodity.

45 OECD (2015)

46 See for instance: Ernst Young (2021)

47 For additional information on the applicability of preferred equity, see OECD (2020)

48 For more details about the proposal see Demmou et al. (2021).

49 See also footnote 23.

4.2. Role of capital markets

Funds from sources other than existing creditors such as private equity funds and credit funds can play a significant role in terms of provision of new money and facilitating workout processes. Industry experts say that swift initial actions by governments played a role in maintaining confidence of market participants in the early phase of the crisis. Capital markets have continued to raise capital for companies during the pandemic. Private equity and private credit markets are rapidly growing and may potentially still provide an untapped supply of funds to invest in distressed companies. Recent trends have shown the attractiveness of equity financing with considerable amounts of capital raised through IPOs[50] and SPOs[51], as well as through non-listed companies (Graph 4). A fundamental prerequisite for facilitating the use of equity is securing efficient market functioning and market integrity, as well as the equitable treatment of shareholders.

The strategies of these funds vary. Private equity funds typically acquire the majority of shares in the distressed company, and frequently also add additional debt to the distressed company (this debt may later be converted into equity) and using its assets as collateral for the additional borrowing. Often they directly enter into the management of the company to improve its going concern value. Credit funds and particularly distressed debt funds purchase the distressed debt at discounted prices and then may negotiate and agree with the debtor on debt restructuring options including conversion of debt into equity. In this context, they often seek to acquire decision-making powers in the company, or in any case other mechanisms to support or supplant the previous management. The wide menu of restructuring options provided by these private capital market players could help make the restructuring process more effective and hence help the economy in dealing with a large demand of restructuring.[52]

Although they need to be tested, alternative ways to raise equity from the market have been emerging thanks to the development of financial technology. Crowdfunding for example offers a variety of debt-type funding to equity-type funding forms. Kraemer-Eis et al. (2020) found that at an early period of the crisis, some debt-based crowdfunding campaigns provided funding to SMEs suffering from liquidity shortages.[53] This form of financing can be particularly attractive in the case of SMEs, which have fewer opportunities to tap equity markets in part due to the high fixed costs involved (and networks needed). At the same time, caution may be needed because these tools also often raise investor protection issues.

Well-developed distressed assets markets help debt workouts. They give original lenders an outlet to monetize their troubled assets before and during lengthy insolvency procedures. This also helps creditors who do not have the resources or expertise to participate in workout cases or do not want to hold their claims until the resolution of the reorganization. Well-functioning distressed asset markets could provide an efficient price signal mechanism if the distressed asset securities' prices are effective predictors of future levels of recovery and reorganisation

---

[50] According to the World Federation of Exchanges (2021) the capital raised through IPOs registered an increase of 83.7% relative to H2 2020, setting new records in the Americas (252.5 USD billion) and EMEA regions (45.8 USD billion).

[51] According to the World Federation of Exchanges (2021) capital raised by already listed companies reached new heights of 403.46 USD billion globally.

[52] Altman E.I. (2014)

[53] Kraemer-Eis, H., et al. (2020). See also Battaglia, F., Busato, F., & Manganiello, M. (n.d.).

values. They could offer an important benchmark in workouts and complement the viability assessment by stakeholders.

An active market for NPLs could help address pricing issues. Industry experts also report that, in practice, there is often a significant difference between bid and ask prices in distressed debt markets, reflecting the differing return expectations between the two sides of the market. The lack of an active market for NPLs may also be the consequence of a wait-and-see approach of banks: more active participation would obviously make the market more price-efficient. There is hence a potential role for the public sector to support the development of an active market for NPLs and distressed companies and help bridge the pricing gap.

Box 5: Creating active markets in Korea

In Korea, capital market-based corporate restructuring, including private equity funds (PEFs), have been operating and are actively participating in the restructuring. Efforts have been made to create an active market by (1) expanding the scope of Corporate Structure Innovation Fund and diversifying its investment approaches, (2) strengthening the role of United Asset Management Corp. (UAMCO) in restructuring process as well as public financial institutions, such as the Korea Asset Management Corporation (KAMCO). UAMCO is the company specializing in the sale and purchase of bonds and securities as well as in corporate restructuring and asset management business. KAMCO is the state-owned enterprise that specializes in purchase of distressed assets and corporate restructuring.

4.3. Government's claims to facilitate restructuring processes and public-private co-funds

Governments are sometimes a major creditor to non-financial corporates and small businesses through tax and social security claims. Some have argued that these claims should be used to facilitate the debt restructuring process of debtors. For example, Demmou et al. (2020) suggest that governments may adopt a cascading approach, including public support to corporate recapitalizations. Distressed corporates should be incentivized to recapitalize themselves by means of: 1) publicly sponsored equity and quasi-equity injections such as preferred stocks and convertible loans; 2) tax incentives aimed at reducing the fiscal preference for debt (i.e., the tax shield of debt); amongst these incentives the phasing-in of an allowance for corporate equity (ACE, see Box 6 for a discussion); 3) debt-equity swaps to provide firms with the required liquidity, without increasing their leverage; 4) state contingent loan repayment (e.g. linked to business returns) in the form of future taxes; 5) the conversion of loans into grants.

Box 6: Addressing the debt bias of the corporate tax: the Allowance for Corporate Equity (ACE)

Corporate income tax systems generally allow companies to deduct interest on debt, while the return on equity is not a tax-deductible cost. The asymmetric tax treatment between funding sources increases the cost of capital for equity-funded investment and generates a "debt bias", encouraging the use of debt over the level that would be otherwise chosen.[54] This debt bias may lead to an excessive leverage in the corporate sector that can be associated with a higher risk of defaults and insolvencies and an

---

[54] See Auerbach, A., Devereux, M. and H. Simpson (2010)

increased business cycle volatility.[55] The empirical literature confirms the relevance of the debt bias for non-financial firms.[56]

One possible solution to tackle the debt bias is the Allowance for Corporate Equity (ACE) system. Under the ACE regime, companies are allowed to deduct an imputed return to equity from the corporate income tax base, in parallel with the deduction of the cost of debt. The imputed rate of return to equity may be set equal to the average interest rate on the corporate long-term debt.[57] In principle, this tax system does not distort financial choices and does not affect the optimal level of investment. Another benefit of the ACE is that it specifically targets companies that strengthen their balance sheets. By increasing their equity these companies signal private information on their growth prospects, so that the ACE incentive tends to be directed to viable firms. However, the ACE also generates a revenue shortfall for the government by narrowing the tax base and may incentivize tax planning by multinationals.[58] The revenue losses can be reduced, in the short-run, by limiting the tax benefit only to the new equity relative to a reference year (so called "incremental" ACE), and in long-run if the potential positive tax revenue effects stemming from the boost to growth of the ACE reform materialize. Tax planning issues can be tackled through the implementation of a strict anti-avoidance framework, specifically targeting transactions between companies of the same multinational group.[59]

Over the last two decades, a number of countries introduced ACE-type regimes. Currently, variants of this system are in force in six jurisdictions in the European Union - Belgium, Cyprus, Italy, Malta, Poland and Portugal - as well as in Brazil, Liechtenstein and Turkey. At European level, starting from 2016 the planned reform of the EU corporate tax system has envisaged provisions to address the debt bias through an allowance for equity-financed investments.[60]

The empirical analyses on the ACE regimes indicate that they have been effective in reducing the debt bias[61] and the leverage[62], while the positive effects on real investments are less clear. The evidence from the introduction of an incremental ACE in Italy shows in addition that the policy has been particularly effective in reducing the leverage of smaller enterprises.[63] The literature also points to the importance of a strong anti-avoidance framework to limit the possibility for multinationals to manipulate their internal financial structure in order to take advantage of the ACE thereby leading to the erosion of the tax base.[64]

Blanchard et al. (2020)[65] have proposed a mechanism whereby public sector creditors accept a larger haircut in their debt claims than private creditors, so that debtor firms whose social value is higher than their private value can be maintained, for example because their liquidation would have very negative effects on their suppliers or on jobs. An alternative arrangement of this,

---

55 For a discussion of the issues related to the debt bias, see Fatica, S., Hemmelgarn, T. and G. Nicodeme (2012)

56 Feld, L., Heckemeyer, J and M. Overesch (2013)

57 See Griffith, R., Hines, J. and P.B. Sørensen (2010).

58 A typical tax planning structure could generate multiple ACE deductions out of an initial equity issuance, via triangular financial chains combining intra-group loans and intra-group equity injections (so called ACE cascading).

59 For a discussion of the tax base erosion risks related to ACE and the anti-avoidance framework of the Italian regime, see Zangari, E. (2014)

60 See European Commission (2021)

61 Zangari, E. (2020)

62 The empirical literature on ACE is reviewed in Hebous, S. and A. Klemm (2020.

63 Branzoli, N. and A. Caiumi (2020)

64 For empirical evidence of the potential side effects of the ACE regimes on tax base erosion by multinationals, see Hebous, S. and M. Ruf (2017)

65 Blanchard, O., Philippon, T., and J. Pisani-Ferry (2020

suggested by Boot et al. (2020)[66] could be such that the government gives haircuts on tax and social security claims and government-backed loans in exchange for shares in the debtor company or an income-tax add-on in the future. ESRB (2021) also discusses the possibility of providing public solvency support to viable firms via grants or debt relief in case of a high likelihood of the existing guarantee to be called.[67] Preminger et al. (2020) argue that companies should be given the option to swap government-backed debt for initially government-held tradeable equity shares; this measure could be complemented with debt relief and risk-sharing provisions, such as temporarily accepting a higher rate of corporation tax in exchange for part of the debt being written off.[68]

A variant of the above-mentioned policy is to subsidize voluntary restructuring by means of tax credits to haircut-consenting creditors. Greenwood and Thesmar (2020)[69] propose that, if the property owner forgives part or all the unpaid rents, the government would grant the property owner a tax credit of the amount of some percentage of the forgiven debt. The lowered haircut net of tax credits makes it less likely that landlords try to obtain the repayment of the rents through judicial procedures. The proposal focuses on unpaid rents because it is often the largest class of debts of small businesses after salaries and wages. For example, in France, the tax credit accounts for 50% of the unpaid rents. In Spain, landlords can include as deductible expenses in their income tax the whole amount of the forgiven rents.

In practice, public creditors may be reluctant to participate in debt restructuring agreements and to accept a partial write-down of debts to the state, for important legal, fairness and incentive-related reasons. In some jurisdictions there are legal constraints on public creditors accepting haircuts on public credit, mainly to avoid erosion of tax discipline. In other jurisdictions, public officials may be reluctant to accept a restructuring proposal given the liability risks involved. In these jurisdictions risks for public officials may potentially be mitigated by default rules for the acceptance of viability assessments and debt restructuring proposals of private creditors, provided that safeguarding clauses against abuse are met. For example, in Italy a public administration cram-down has been introduced, which allows the court to validate a restructuring plan on behalf of public agencies if it is more favourable for them than the liquidation of the debtor's assets (which is called the "best interests of creditors" test in US bankruptcy law). However, for the reasons stated above this may not be appropriate in all jurisdictions, since other factors will be the leading considerations.

Governments could also set up funds with public money that provide new funding to distressed companies, where it is difficult to mobilise private money, either because the outcomes are uncertain, or risk is too high (Box 7). Since government-only equity injections, including DES and DDS of crisis loans, might be accompanied with deadweight losses, policymakers can instead incentivise the provision of risk money from private investors by using public funds as a catalyst or by developing equity co-funds.[70] Some FSB member jurisdictions have a framework for co-funding in which government funds provide equity at market conditions, jointly with private

---

66 Boot A, et al. (2020

67 ESRB (2021) *Prevention and management of a large number of corporate insolvencies*

68 Preminger J., G. Major, J. Rathbone (2020)

69 Greenwood, R. and D. Thesmar (2020).

70 OECD (2021)

investors. In the same vein, Gobbi et al. (2020)[71] argue for the creation of a special purpose vehicle in response to the COVID-19 shock, funded with public equity and long-term debt, that can purchase and restructure bank loans. By utilizing a co-funding scheme, viability assessment can lever on private sector expertise as governments usually do not have the expertise or capacity to perform viability assessments. The application of government support in the context of debt restructuring will have to be applied in line with state aid and competition rules. However in general public sector involvement would also normally be considered a last resort to be used in exceptional circumstances, with the focus being on private-sector led solutions.

Box 7: Public-private partnerships in France, Italy, Spain

France

France introduced in March 2021 a guarantee scheme encouraging the distribution of participating loans by banks and subordinated bonds by investment funds, in order to facilitate new investments supporting recovery from the COVID-19 crisis. The support takes the form of a State Guarantee on private investment vehicles, funded by private investors, that will acquire participating loans distributed by commercial banks as well as subordinated bonds. The scheme will be accessible to small and medium-sized enterprises and midcaps on the basis of the submission of an investment plan and minimum credit ratings. The scheme is expected to mobilise up to €20 billion of private long-term funding to support for companies affected by the economic impact of the coronavirus outbreak.

Banks will keep 10% of participating loans and transfer the remaining amount to specific investment vehicles. The State guarantee will cover up to 30% of the portfolio of participating loans and subordinated bonds acquired by the private investment vehicles and is calibrated to ensure that the risk borne by the private investors remains limited, in line with an investment grade credit rating, thus incentivising private investors (such as insurance companies, pension funds and asset management companies) to channel funding to the real economy. The participating loans and subordinated bonds eligible under the scheme must: (i) be issued before 30 June 2022, (ii) be used to finance investments and not pre-existing debt, (iii) have a maturity of 8 years, with a 4-year grace period on principal repayments.

Italy

Italy established in May 2021 a special-purpose asset fund (“Patrimonio Rilancio”, an ad hoc vehicle company managed by the Cassa Depositi e Prestiti, the National Promotional Bank) dedicated to equity and quasi-equity interventions in large non-financial firms (revenues above €50 mn) hit by the pandemic and falling into one of the following categories:

i) strategically important for the country given their assets/operations;

ii) potentially relevant negative effects on the job market in case of failure; or

iii) need of debt restructuring/turnaround.

The fund can operate under the EU Temporary State Aids Framework or at market terms. In both cases, private co-investments are required. In the latter case, private co-investments are required with no exception, not lower than 30% of the overall amount and at the same conditions accorded to the fund.

In parallel, Italy reinforced a measure for the development of alternative financing channels for small businesses. This is done by means of a special section within the Italian Guarantee Fund, dedicated to issuing guarantees on bonds or portfolios of bonds by companies.

Spain

[71] Gobbi, G., Palazzo, F. and A. Segura (2020)

In the context of the COVID-19 crisis the Spanish government approved a "line for the restructuring of financial debt with a state guarantee", endowed with €3 billion. The aim of this credit line is to enable the Instituto de Crédito Oficial (ICO), a state-owned bank, to join restructuring processes of company debt to which a public guarantee was given during the pandemic. Specifically, the following measures may be agreed as part of such debt restructuring:

- Extension of the maturity of loans supported by a public guarantee for a further period;
- Conversion of loans supported by a public guarantee into participating loans; and
- Granting of direct aid to reduce the amount of the debt (i.e., a debt haircut) as a last resort.

The implementation of these measures is based on a Code of Good Practices developed by the government, to which banks may voluntarily adhere, whose aim is to set in place a common framework for action in the restructuring of the balance sheets of firms and self-employed.

Pursuant to the Code, banks assess the total credit exposures of the debtor with or without government-guarantees between 17 March 2020 and 13 March 2021. In the event of restructuring of government-guaranteed loans, the banks will use "best efforts" to also restructure the exposures without government guarantees, so that the burden of the debt restructuring is shared between the state and the banks.

5. Facilitating the smooth exit of unviable firms

Whilst unviable firms should not remain in the market, they may in practice be allowed to survive for various reasons. As discussed in Section 2, allowing such firms to survive has adverse financial stability as well as macroeconomic implications. In practice, however, debtors are prone to keep running their businesses as long as they can, even if the businesses do not provide the required rate of return. In addition, the massive policy response to the COVID-19 shock, while effective in preventing undesirable liquidation of viable firms, may have contributed to preserving a large number of unviable firms as well.

Creditor banks often prefer to refinance debt to avoid regulatory consequences.[72] In addition to the incentive to ever-green their loans discussed in Section 2, participation in insolvency procedures (restructuring or liquidation) triggers the obligation to classify the loan to the firm as non-performing or doubtful, having to record loan loss provisions that leads to a deterioration of their capital buffers. Loss recognition will also be necessary when a creditor bank sells its NPLs.

Inefficient insolvency systems with lengthy and costly processes exacerbate the problem.[73] When faced with an unviable firm, the creditor bank has two options: i) it may participate in the insolvency procedure, in which case they have to classify the credit to the firm as non-performing or doubtful and wait years to recover a part of them; or ii) it may refinance the debt to this firm (ever-greening), thus avoiding the recognition of the corresponding loss for a certain period. The opportunity cost of the latter strategy is relatively low, particularly in jurisdictions with inefficient insolvency systems that reduce creditors' recovery rates. The credible threat of effective enforcement and liquidation procedures in each jurisdiction guides and disciplines the behaviour

---

72 Bonfim et al. (2020)

73 Andrews, D and F Petroulakis (2019). Consistent with this, McGowan, A et al. (2017) find that reforms to bankruptcy laws that smooth corporate debt restructuring and reduce the costs associated with the insolvency of sole proprietors and self-employed individuals decrease the share of capital held by zombie firms. This reallocation of capital normally increases the productivity of other firms that can make a more efficient use of this production factor.

of debtors and creditors during restructuring negotiations. Efficient debt enforcement and liquidation procedures are therefore indispensable for the avoidance of ever-greening and the "zombification" of companies and resource misallocation.

Supervisors can play a significant role to incentivise banks to avoid such ever-greening, including by setting out supervisory expectations or targets for viability assessments to be conducted by banks, requiring sufficient and forward-looking provisioning, and/or discussion with banks on their approach to credit risk associated with restructuring and insolvencies. When developing these expectations and targets supervisors may adopt a staggered approach, ensuring a smooth ebbing away if a particularly high number of liquidations would otherwise be expected within a short period of time.

To avoid this type of scenario, it is important that supervisors adopt policies that encourage the timely restructuring of debt and the recognition of the resulting losses. Banks should be incentivised to act early, assess viability and develop restructuring plans and refinancing options at a point in time where both restructuring and the exit of a large number of companies can be realised in a healthy manner. To this end, existing frameworks for managing credit risks and measuring expected credit losses may be subject of frequent review by authorities to allow and incentivise banks to react quickly amidst the new crisis.

6. Facilitating appropriate processes for the restructuring of debt

6.1. Corporate debt restructuring in out-of-court procedures

The implementation of the measures described in the sections above - the viability assessment, restructuring of debt and the provision of fresh money to viable companies, including via public-private partnerships - may take place within informal or formal arrangements or procedures. These may be the bank's ordinary credit risk management practices, but at the same time, most jurisdictions provide for dedicated restructuring procedures, in particular where coordination amongst creditors is required, be it in-court or out-of-court.[74] An out-of-court workout (OCW) is a privately negotiated debt restructuring between the debtor and all or some of its creditors. OCWs form a continuum of increasing formality, reflecting in broad terms the extent to which they entail institutional involvement. On the informal side of the continuum are purely informal negotiations or OCW procedures based on (non-binding) common principles or practices. Enhanced OCW procedures are in the middle of the spectrum. They do not involve courts but benefit from other features such as third-party coordination or a dedicated administrative structure, process or incentives framework. Hybrid OCWs are on the formal end of this spectrum as they involve courts at limited points in the process and for limited tasks, for example to order a stay on creditors' debt collection actions or to validate an agreement among creditors.

Where a large number of restructuring cases are expected, in particular for SMEs, simplified tracks of (in-court and) OCW procedures and more speedy decision-making rules would be an effective tool. These procedures would prevent courts from be being overwhelmed following a

74 See World Bank, (2012)

major aggregate shock by a high number of restructurings to be performed in ordinary in-court insolvency procedures.

However, effective and predictable (in-court) debt enforcement and liquidation procedures are indispensable for the success of OCW processes. The projected outcome of in-court insolvency procedures and/or of a liquidation provides a benchmark for the negotiation in an OCW process. Clear and reliable insolvency (debt enforcement and liquidation) frameworks that provide such prediction inform the decisions of debtors, creditors and potential new investors in their OCW negotiations.

Furthermore, the outcome of debt restructurings may be supported by a large array of legal framework elements such as tax, corporate and banking law. These enabling framework elements may impact on the incentives for debtors and creditors to engage in restructuring processes and support successful outcomes of debt restructuring negotiation.

Both in-court and out-of-court debt restructuring are guided by the relevant FSB Key Standards for Sound Financial Systems which is the Insolvency and Creditor Rights Standard (ICR Standard).[75] This standard is also the basis for the on-going FSB SCSI Thematic Peer Review on Corporate Debt Workouts, which will provide further insights on effectiveness and good practices of out-of-court debt restructuring processes. The following presents considerations which are examined further in the context of the peer review.

6.2. Increasing access of SMEs to simplified procedures

SMEs would particularly benefit from simplified fast-track procedures. Lack of resources may challenge SME's ability to pursue a restructuring procedure. The simplification of procedures may reduce costs, for example for insolvency advisors and for bridging liquidity until an agreement is reached. Speediness of procedures, for example through binding time limits for certain procedural steps, not only reduces costs, but also helps the debtor to achieve swift clarity on the outcome and the creditor to manage a high number of restructurings. The potential to simplify procedures may also be higher for small firms, as the requirements for creditor coordination may be lower or problems such as the holdout problem are usually less acute due to the smaller number of creditors that are relevant for the restructuring.

To further make these procedures more accessible for SMEs, simplified restructuring procedures could be subject to less stringent access requirements, such as lower thresholds and increased ceilings for the access to certain procedures or relaxation of other requirements such as application costs or the involvement of insolvency practitioners.

Box 8: New restructuring procedure for small firms in the US

Just on the eve of the COVID-19 crisis, in February 2020, the Small Business Reorganization Act became effective in the US by which a new Section V was added to Chapter 11 of the Bankruptcy Code.

[75] The ICR Standard combines the World Bank Principles for Effective Insolvency and Creditor/Debtor Regimes and the United Nations Commission on International Trade Law (UNCITRAL) Legislative Guide on Insolvency Law. The ICR Standard's implementation is assessed as part of the World Bank Reports on the Observance of Standards and Codes (ROSC) Initiative. See ICR Reports on the Observance of Standards and Codes (World Bank, 2015) and the ROSC assessment methodology developed by the World Bank in collaboration with the IMF and UNCITRAL. The ICR standard also includes principles regarding the wider legal framework supporting in-court and out-of-court debt workout procedures.

This new section offers a simplified restructuring procedure for certain small businesses. Initially, the threshold for the use of this procedure was set at non contingent, liquidated debts of not more than $2,725,625, at least 50% of which is business debt. As part of COVID-19 relief, the US has temporarily raised the debt limit to $7.5 million to open the procedure for a higher number of firms.[76]

There are several key differences between the Section V procedure and the normal Chapter 11 procedure.

- Subchapter V eliminates the absolute priority rule, meaning that the debtor's owners can retain their equity even if objecting unsecured creditors are not paid in full and provided that the proposed plan of reorganization otherwise meets the requirements for confirmation,[77] for the economic rationale that, for many small businesses, wiping out the owner's equity destroys the enterprise value, as the entrepreneur is indispensable for keeping the going concern value of the firm.
- A subchapter V trustee is appointed within 24-48 hours after filing to assess the viability of the business and facilitate the development of a consensual plan of reorganization.
- The timeline is expedited, and the debtor has only 90 days to file a plan of reorganization. The debtor has the exclusive right to file a plan.
- No creditors' committee must be appointed unless the court orders otherwise "for cause." Although the goal of subchapter V is the confirmation of a consensual plan, the court has the power to confirm a non-consensual plan, meaning it can cram-down on dissident creditors.

Where simplified procedures are established outside of courts, they may be supported by different types of administrative structures, such as mediation bodies, advisory centres, and debt counselling or debt workout agencies. Such "enhanced" procedures may even provide access to alternative dispute resolution or debt restructuring schemes offered by authorities. The latter have been established in several jurisdictions permanently or in the context of financial crisis on a temporary basis. Such simple procedural schemes may be fit to ensure the processing of a high number of, in particular small, firms with restructuring needs.

[76] The debt ceiling was initially increased through March 2021, though it has since been extended through March 27, 2022. H.R.1651 - 117th Congress (2021-2022) COVID-19 Bankruptcy Relief Extension Act of 2021.

[77] For unsecured claims, subchapter V requires that the plan must provide that the debtor's projected disposable income for a three- to five-year period will be applied to plan payments, or for the debtor to distribute an equivalent value of property under the plan. Moreover, the debtor's financial projections must show that there is a reasonable likelihood that the debtor will be able to make all payments under the plan, and the plan must provide remedies in case the debtor defaults on payments.

Box 9: Restructuring procedures with administrative support in Korea

Simplified rehabilitation procedures:

- Simplified rehabilitation procedures for small operating income owners are provided for in Chapter 9 of Part II of the Debtor Rehabilitation and Bankruptcy Act (DRBA).
- Small business owners with a debt value of no more than KRW 3 billion may file a petition for simplified rehabilitation procedures.
- In addition, in the simplified rehabilitation procedures, it is allowed to appoint CPAs, court officials, etc., rather than accounting firms, as examiners, reducing examination expenses and thus enabling small business owners to file a petition for the proceedings at greater speed and lower cost.

S-Track ('Small and medium-sized enterprise tailored rehabilitation Track') (SMEs)

- S-Track is a system designed to provide seamless transition of the **restructuring** procedures (from the point when a company applies for rehabilitation procedures to the point when it normalizes its management) which involve various organizations. The Seoul Bankruptcy Court, which is a specialized insolvency court, initiated the system in November 2017.
- Companies or start-ups with the debt value of less than KRW 15 billion are eligible to apply for the system. The support provided by the system includes: (1) pre-procedure consultation; (2) arranging discussion with stakeholders such as creditors and helping to find appropriate financing methods; and (3) helping to come up with equity return plans and to implement rehabilitation plans.

Workouts under the CRPA:

- In a case where a company applies for workouts under the Corporate Restructuring Promotion Act (CRPA), the procedure initiates when creditors so decide. An MoU on the implementation of corporate restructuring plans, including debt restructuring, is signed after asset-liability due diligence.
- The principal creditor bank monitors on a quarterly basis how the restructuring plans under the MoU are implemented. After three years, it evaluates the possibility of corporate improvement and reports the results to the creditor banks' council.
- The CRPA includes provisions that ease some requirements for SMEs.

Simplified tracks for workouts may also be based on industry initiatives, for example by master agreements or codes of conduct developed by the banking industry. To support such initiatives, governments may wish to make efforts to establish frameworks that enable and encourage these activities, such as the Code of Conduct Practices in Spain presented in boxes 5 and 10. Government measures may range from encouraging financial institutions to improve communication and work constructively with borrowers, and increased supervisory expectation regarding intensified loan management, to direct encouragement and proposals for specific initiatives.

To achieve more speed while preserving creditors' rights, several jurisdictions have simplified certain elements of their procedures. For example, some jurisdictions allow restructuring plans which have been negotiated out of court (pre-packaged plans) and are supported by a majority of creditors to be approved by court. The unanimity requirement in out-of-court creditor coordination processes may delay the adoption of restructuring proposals among creditors. However, majority decisions and overruling of the interests of minority creditors ('cram down') affects the rights of the dissenting creditors.[78] Majority voting and cram-down rules are one of the procedural elements that could be simplified to increase efficiency of out-of-court procedures.

Box 10: Majority vote decisions in the UK and in Spain

UK

The UK has implemented a new restructuring procedure for companies that have encountered, or are likely to encounter, financial difficulties that are affecting, or will or may affect, its ability to carry on business as a going concern. The new 'cram-down' procedure works across creditor classes and reduces the ability of junior creditors to block a restructuring proposal. It will allow the court to impose arrangements even if a vote has not led to a 75% majority in each class of creditors. This is subject to two conditions:

- the court has to be satisfied that if the arrangements are imposed, then none of the members of the dissenting class would be worse off than if "the relevant alternative" had happened (usually liquidation); and
- the arrangements have been agreed by 75% in value of all those creditors who would receive a payment or have a genuine economic interest in the company if "the relevant alternative" had come to pass.

Spain

The Code of Good Practices in Spain (Box 5) establishes coordination rules among the creditor banks that provided loans to a specific firm or self-employed person. Where government-guaranteed loans are involved, the Code establishes simple and qualified voting majorities for the imposition of the measures to dissident creditors.

- A simple majority (a support of at least 50% of the outstanding guaranteed credit) is required for the conversion of loans supported by a public guarantee into participating loans.
- A qualified majority (a support of at least 66% of the outstanding guaranteed credit) is required for a debt haircut.
- However, in the case of SMEs and sole proprietorships, even if those majorities are not reached, the restructuring agreement can be imposed to dissident creditors if such an agreement is supported by the two (conversion into participating loans) or the three (debt haircut) banks with the highest exposure to the government-backed loan. Moreover, the banks must commit to keep the credit lines for working capital of the debtor until, at least, 31 December 2022.

However, in the case of loans without a public guarantee, for the conversion of those loans into participating loans or debt haircuts there is no possibility of imposition to dissenting creditors: it is required that 100% of the credit (i.e., all banks with exposure to the debtor) vote in favour of those measures.

Another limitation of the Code is that secured credit (generally, a pledge or a mortgage) is excluded from these coordination rules. In addition, in the case of guarantor loans, the guarantor must confirm that she will keep her commitment.

78 Skeel, D. (2020), Cit.

7. Addressing excessive indebtedness of micro enterprises and natural persons who run these businesses

Debt overhang issues of micro enterprises, and natural persons who run these businesses i.e. self-employed and sole proprietors[79] present an additional challenge given their structural vulnerabilities. Micro enterprises are more vulnerable to demand shifts and have difficulty to adapt quickly to some market evolutions, which may be a serious problem in the current crisis.[80] In addition, the number of available financing options for micro enterprises is more limited. The types of businesses most affected by the lockdown policies (such as restaurants and retail services) are in some jurisdictions mostly organised in micro enterprises run by self-employed and sole proprietors.

The debt restructuring of micro enterprises requires some additional practical considerations:

- The first issue specific to micro enterprises is the larger informational asymmetries. Micro enterprises are often subject to less financial reporting and disclosure. This makes it more difficult to attract external players to take part in their restructuring. This is already the case for SMEs and may be even more challenging when restructuring of micro enterprises. For example, private equity funds are rarely interested in investing in them. Instead, existing creditors, especially regional and community banks, play a greater role as they are the stakeholders that holds sufficient information to enable a viability assessment.[81]

- A second specificity of micro enterprises is the relatively high burden in terms of cost and knowledge of carrying out a work-out or business transformation.[82] This is already an issue for SMEs and may be even more difficult for micro enterprises. A fully-fledged viability assessment requires a forecast of future cash-flows of a company, but it would not be appropriate for micro enterprises to pay high (fixed) costs to external consultants, for only a marginal increase of the enterprise value after restructuring relative to the fixed costs.

---

79 Self-employed individuals are *natural persons* acting as service providers without employment relationships with their clients. They undertake an economic activity without the umbrella of a different legal entity, and they do not benefit from limited liability protection. Examples may include a surgeon, a plumber, a taxi driver, a musician, a lawyer and an architect if they do not belong to the payroll of any firm. Sole proprietors are *natural persons* that run an activity under a different legal business entity, which is subject to enterprise tax. A sole proprietorship does not have limited liability. Since there are no single universal definitions for them, these are only working definitions. The objective of the proposed categories is to set a common terminology, but we acknowledge that definitions of such economic agents are not harmonized across jurisdictions. There is a wide variety of entities differing in type, attributes, and size. Definitions vary also within jurisdictions, across administrative components and legislations.

80 Japanese government launched a grant program (1.1 trillion yen) for the business reconstruction of smaller agents whose sales have been severely damaged by the Covid-19 shock. The objective of the policy is to cover the costs incurred in shifting their business models to adapt to the post Covid-19 world.

81 These companies may obtain new credit from their main bank thanks to relationship lending. To the extent that relationship lenders have an informational advantage over transaction lenders, this may allow them to grant credit to small, distressed firms in crisis times. Bolton, P., Freixas, X., Gambacorta, L. and P. E. Mistrulli (2016).

82 For example, filing a US Chapter 11 process would typically imply high costs, making liquidation the main choice for smaller agents, which led to approving a special restructuring procedure for small firms (Subchapter V, see above box 9). Greenwood (2020) points out that, due to this financial burden, in fact liquidation (i.e., US Chapter 7) is the main choice by small corporates (more than 95% of corporates with $0 - $1M of liabilities), in contrast to the majority of large corporates choosing reorganization in their insolvency procedures (more than 70% of corporates with $1B+ of liabilities). Therefore, there is ample evidence that small firms use other procedures different from bankruptcy to deal with financial distress. See: Morrison E. (2009). and Garcia-Posada, M., and Mora-Sanguinetti, J. S. (2014).

- Thirdly, the liquidation of the micro enterprise might lead to entrepreneurs incurring the liability of the company. There is an intersection between natural persons and corporates when entrepreneurs or business owners incur or guarantee the debt of their company. Lenders often ask for personal guarantees or a mortgage on the owner's residence, which *de facto* eliminates the owner's limited liability protection.[83] In some jurisdictions, tax and labour debt of companies is *de jure* claimed on entrepreneurs. For self-employed the liability might even be incurred directly, without the protection of a limited liability structure. Therefore, restructurings of debt of micro enterprises can easily be entangled with that of their owners.

- Fourthly, the individual or individuals who own the business also constitute the management and sometimes represent the majority of the human capital in the business. This often makes agreeing restructuring proposals that include options such as changing the management difficult.

Given that most of these specificities are common with SMEs, the restructuring of the debt of the corporate part of these micro-enterprises may also benefit from simplified debt work-out processes for SMEs, as described in section 6.

Additionally, a successful restructuring of debt of micro enterprises often requires the restructuring of the debt of the natural person behind the business, the self-employed or sole proprietor. Where the personal debt of self-employed or sole proprietors is not addressed alongside the debt of the micro enterprise entrepreneurial capacity is lost. Excessive indebtedness discourages the motivation of these persons to work, as it prevents them owning the rewards of their efforts, leading to below potential productivity, entrepreneurship, and consumption in the economy. Alternatively, they might engage in the informal economy to avoid paying back their debts.

In many jurisdictions, debt restructuring procedures for natural persons therefore provide for a "fresh start policy" based on a discharge of debt after a period of demonstrated good behaviour. These procedures allow liabilities of natural persons to be discharged after they demonstrate their willingness to repay by, for example, a designated portion of their earnings for a certain period, commensurate with their ability to generate an income stream. These procedures are guided by the ICR Standard which contains elements of effective insolvency systems for natural persons.[84] The World Bank has also prepared applicable material.[85]

Box 11: Sole Proprietors and Partnerships Scheme in Singapore

To speed up and reduce the cost of the debt restructuring process for unincorporated businesses operating as sole proprietors and partnerships, Singapore has established the Scheme for Sole Proprietors and Partnerships (SPP). The targeted businesses can apply for this scheme to restructure

83 Berkowitz, J. and M. White (2004); Mayordomo, S., et al. (2020).

84 The ICR Standard as the relevant FSB Key Standard contains elements regarding the insolvency of natural persons in a micro enterprise context. The United Nations Commission on the International Law (UNCITRAL) is preparing recommendations on simplified insolvency regimes for these players to key objectives and features of that regime, including standardized procedures and pre-commencement finance. UNCITRAL Working Group V (2020) *Draft text on a simplified insolvency regime*.

85 See also World Bank (2014).

their unsecured liability owed to multiple lenders including banks, finance companies, and financial institutions participating in the Enterprise Singapore loan schemes.

Under the SPP scheme, borrowers can apply for lower monthly instalment by extending their loan tenures. Interest rates for the restructured loans will be subject to a cap of 7% p.a. As the terms of the scheme have been agreed to by participating lenders in advance, it is expected that businesses will have access to a faster loan restructuring process across multiple lenders.

Annex: Debt overhang in figures

Change in corporate debt and debt servicing

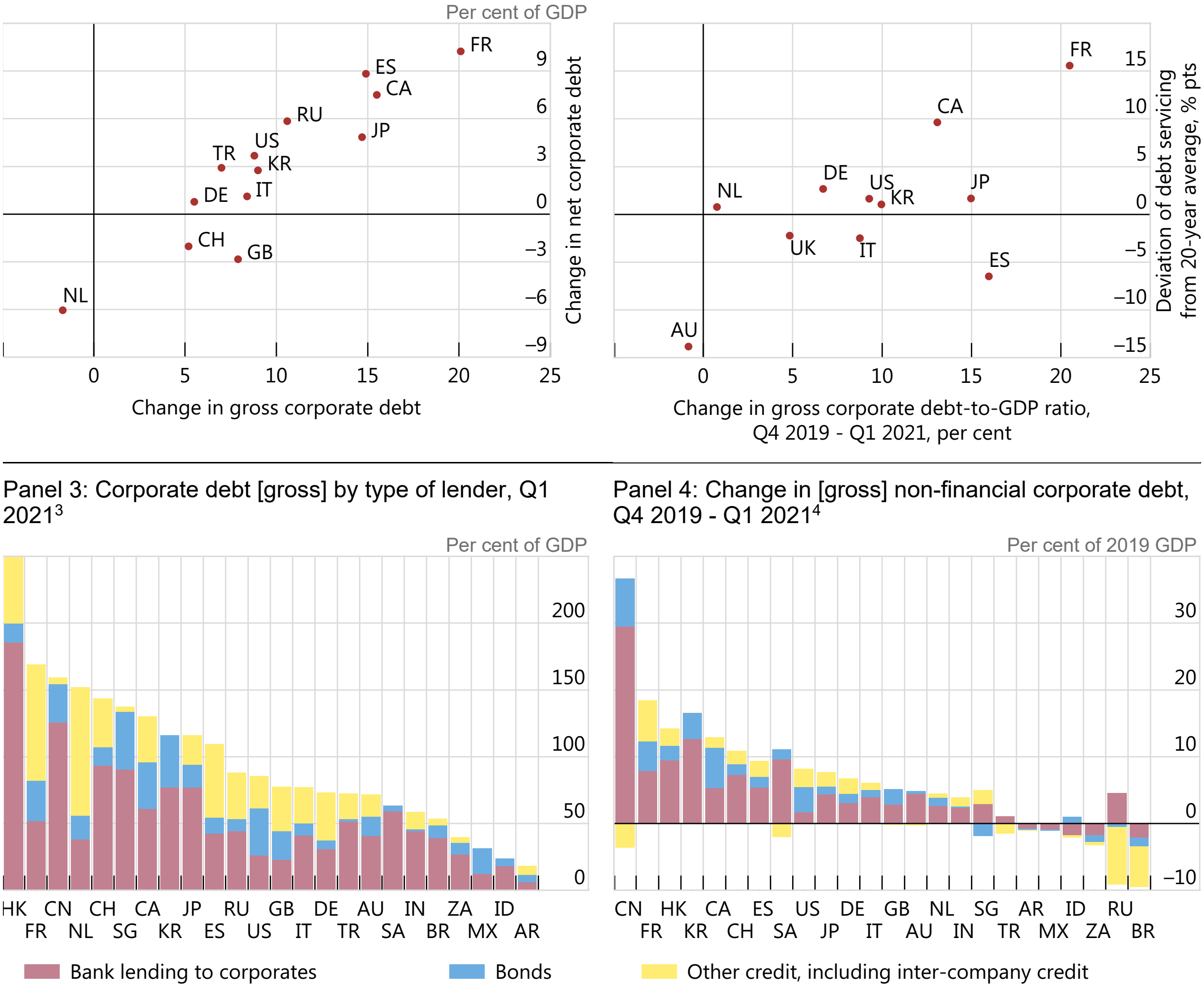
Graph 1

Panel 1: Change in non-financial corporate debt, 2019 - 2020[1,2]

Panel 2: Non-financial corporate sector debt servicing, Q1 2021

Panel 3: Corporate debt [gross] by type of lender, Q1 2021[3]

Panel 4: Change in [gross] non-financial corporate debt, Q4 2019 - Q1 2021[4]



Latest available data by country is used for all the graphs.

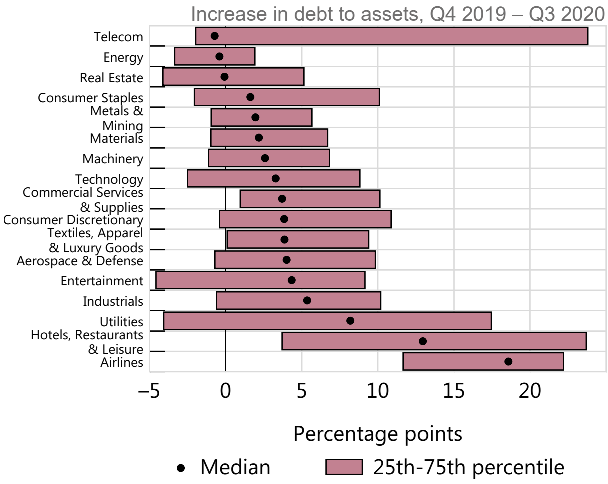
[1] Corporate debt is based on the BIS statistics regarding credit to the non-financial sector, which is calculated on a non-consolidated basis (BIS (2013), *How much does the private sector really borrow - a new database for total credit to the private non-financial sector*). For some countries, the debt statistics include partially consolidated entities, therefore include some netting of intragroup loans that does not occur for countries where the data are based on the lowest non-consolidated entity. [2] Net corporate debt is calculated by subtracting currency and deposits of non-financial corporations on the countries' financial balance sheets from gross corporate debt. [3] Data for bond financing are from BIS debt securities statistics. Other credit, including intra-company credit is calculated by residual. [4] The change in bond financing is taken from BIS debt statistics, the change in bank loans is from national statistical agencies and other credit is a residual.

Sources: BIS; IMF; OECD; FSB calculations.

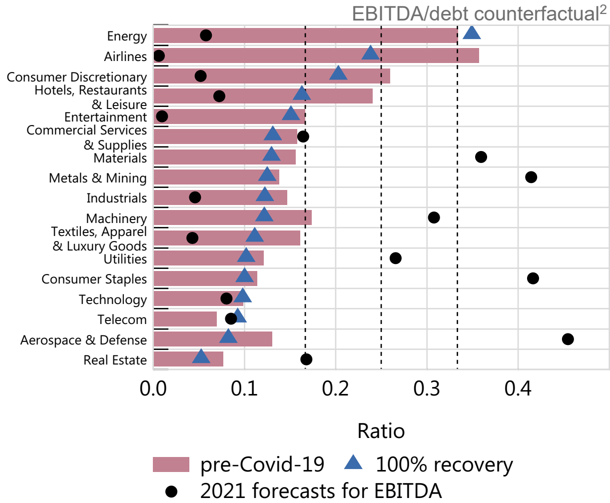
Corporate debt levels and debt servicing – By industry

Graph 2

Panel 5: Corporate leverage – changes[1]



Panel 6: Corporate debt service coverage ratio

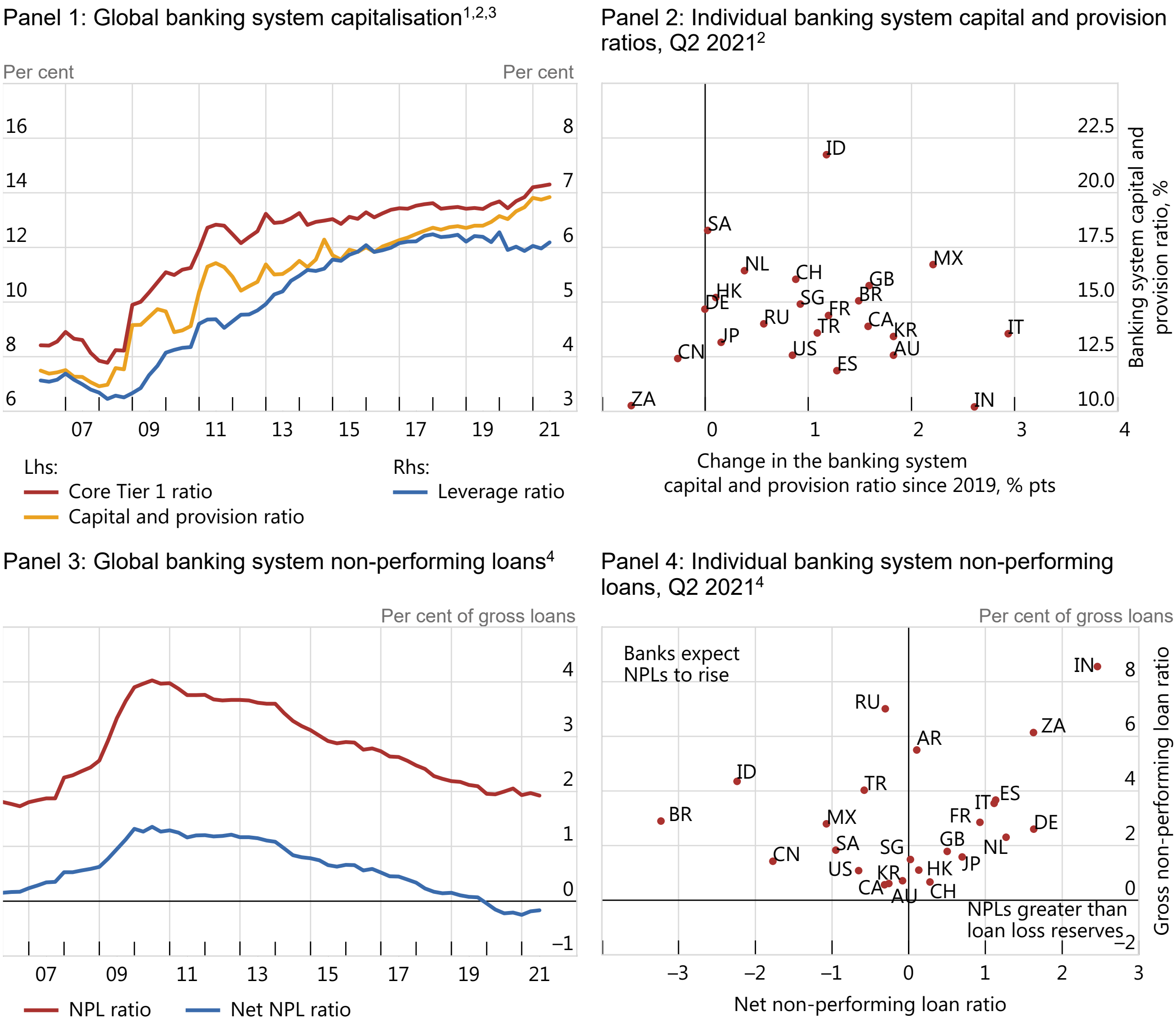


[1] Based on public and large private companies in all non-financial sectors across AU, CA, DE, ES, FR, GB, IT, JP and US that have negative cumulative operating profits from Q1 2020 to Q3 2020. [2] Vertical dashed lines show debt-to-EBITDA ratios at 3, 4, and 6. Forecasts are based on 2021 EBITDA consensus estimates from S&P Capital IQ as of February 2021.

Source: R Banerjee, J Noss and J M Vidal Pastor (2021), "Liquidity to solvency: transition cancelled or postponed?", BIS Bulletin, no 40.

Bank balance sheet indicators

Graph 3

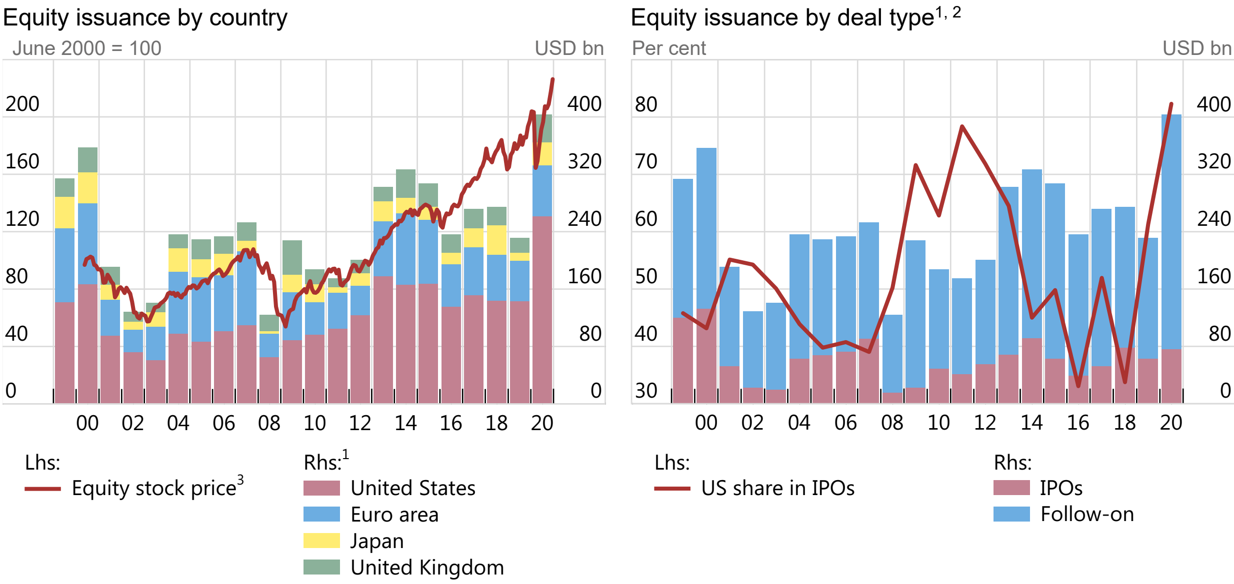


[1] Data for the global banking system are based on a sample of more than 4,000 banks from 33 economies (FSB members plus other economies identified by the IMF as having systemically important financial centres). The chart shows asset-weighted averages across the sample. [2] The capital and provision ratio is core Tier 1 capital plus loan loss reserves less non-performing loans, shown as a percentage of risk-weighted assets. [3] For the leverage ratio US banks' assets have been adjusted for derivatives netting. [4] The net non-performing loan (NPL) ratio is gross nonperforming loan ratio less loan loss provisions to gross loans.

Sources: Bloomberg; SNL Financial; FSB calculations.

Boom in equity issuance

Graph 4



[1] By non-financial corporations (NFCs), excluding preferred shares and convertibles. [2] Sum across the euro area, Japan, the United Kingdom and the United States. [3] Closing price of the S&P 1500, EURO STOXX 50, TOPIX and FTSE All-Share equity indices, weighted average based on market capitalisation of the respective indices; monthly averages of daily data.

Sources: Bloomberg; Dealogic; FSB calculations.

Annex Box: Summary of recent policy proposal to address debt overhang

The challenges posed by debt overhang issues in a post-COVID-19 environment and possible policy approaches have been discussed in several papers of international organisations and think tanks. This box provides a reference to a selection of them, with a view to providing alternative point of views on the approaches to the issues addressed in this note. The papers adopt the same starting point – the increase in corporate leverage as a result of COVID-19 policy support measures, and the potential for problems of debt overhang, underinvestment and resource misallocation to unviable companies, or wave of insolvencies and excessive liquidation of viable companies. Although from different perspectives, all point to: i) the importance of solvency support measures involving forms of equity financing on top of debt restructuring for viable firms; ii) the need for an improved set of debt restructuring and insolvency tools and procedures; iii) the importance for authorities and financial institutions to start planning and take early action where possible.

- OECD (2021) *Insolvency and debt overhang following the COVID-19 outbreak: Assessment of risks and policy responses.*[86] The paper suggests to policymakers a multidimensional cascading approach to issues of debt overhang: 1) flattening the curve of insolvency while reducing debt overhang risk; 2) encouraging timely debt restructuring; 3) improving the efficiency of liquidation procedures. The paper suggests that equity financing could play an important role in recapitalising firms, and relevant policy instruments include equity and quasi-equity injections (e.g. preferred stocks), phasing in an allowance for corporate equity and debt-equity swaps. Complementarily to equity type of financing, debt restructuring can change both the timing of distressed firms' potential default and their possibility to invest. Policy makers may consider establishing legal conditions favouring new financing for distressed firms (e.g. granting priority over unsecured existing creditors) and promoting pre-insolvency frameworks. For SMEs, the paper proposes state-contingent loan repayment via future taxes, and conversion of government (crisis related) loans into grants for ways to contribute to companies recapitalisation, and establishing specific procedures for SMEs (e.g. by promoting informal debt restructuring) for easing pre-insolvency procedures.
- G30 (2020) *Reviving and Restructuring the Corporate Sector Post-Covid: Designing Public Policy Interventions.*[87] The report recommends for policymakers: (i) a set of universal core principles to guide the design of the policy response; (ii) a set of potential tools with which to respond; (iii) a decision framework to determine appropriate policy responses for a specific jurisdiction. The proposed toolbox of policy measures to tackle debt overhang issues comprises for viable firms among other things: i) Targeted credit programs or guidance to encourage lending to viable, solvent firms; ii) Infusions of equity or equity-like investment in viable firms; iii) balance sheet restructuring of otherwise viable businesses, including through modified bankruptcy processes and workout procedures. The paper also proposes that governments implement measures to deal with bad debt efficiently and effectively, for example buying or guaranteeing bad assets, establishing "bad bank" structures, or encouraging the use of specially designed Asset Management Companies to take on nonperforming assets.
- ESRB (2021) *Prevention and management of a large number of corporate insolvencies*.[88] The ESRB assess the risk of a rise in insolvencies over the next year or two, as well as the possible implications that this may have for the economic recovery and financial stability. It discusses how a steep rise in insolvencies could be prevented, notably through the swift identification of fundamentally viable firms and their restructuring. In terms of policies, the note suggests that

---

86 OECD (2021)
87 G30 (2020)
88 ESRB (2021)

governments and banks should start planning for the end of the pandemic and design a smooth phasing out of the support measures. Again, attention is put to the need for improved restructuring frameworks, which are particularly important in the current crisis to the extent that a rise in insolvencies has been forestalled by allowing corporate debt to rise. Debt relief or equity injections facilitated by the public sector would keep viable companies in business, reducing economic losses and lowering the ultimate losses borne by the state and the financial sector. For those companies that are found to be unviable in the post-COVID-19 economy, efficient insolvency procedures should be developed to facilitate the swift redeployment of resources to more efficient uses.

- *IMF Global Financial Stability Report (2021) Chapter 2: Nonfinancial Sector: Loose Financial Conditions, Rising Leverage, and Risks to Macro-Financial Stability*.[89] The paper proposes that policymakers should stand ready to tighten macroprudential policies as the recovery takes hold, with regard to country-specific circumstances, depending critically on the pace of recovery, postcrisis vulnerabilities, and the policy toolkit available to policymaker. Targeted macroprudential policies can help contain or even reverse leverage build-ups and improve the intertemporal trade-off, thereby reducing risks to future financial stability. Given the possible lags between activation and full impact, policymakers should take early action to tighten selected macroprudential tools to address rising financial vulnerabilities. The swift implementation of macroprudential tightening as soon as macroeconomic conditions permit should be accompanied by well-designed policies to deal with highly indebted firms and greater supervisory attention to risk taking.
- IMF (2021) *Insolvency Prospects Among Small-and-Medium-Sized Enterprises in Advanced Economies: Assessment and Policy Options*. This paper focuses in particular on challenges related to SMEs, which are overrepresented in hard-hit sectors. In light of the potential impact on banks' capital ratios and considering also that the fall in capital could be twice as large in hard-hit countries where SMEs are predominant (up to 3 percentage points Tier1 ratio drop), the paper proposes that government shift gradually away from liquidity towards solvency support, while also strengthening insolvency procedures. SME distress needs to be addressed through a three-pronged-approach combining continued liquidity support, "quasi" equity injections, and comprehensive insolvency and debt restructuring tools. Governments may consider providing quasi equity injections on generous terms, conditional on adequate fiscal space, accountability, governance, and the capacity to reach the intended firms. Although technically challenging, these could take several forms, including (junior) "profit participation" loans—through either fresh loans or conversion of existing government loans. conditional on private investors injecting equity. The paper points to policy simulations illustrating large efficiency gains, in terms of viable SMEs saved per dollar spent, from targeting solvency support. Solvency support should be complemented by an effective set of insolvency and debt restructuring tools, including dedicated out-of-court restructuring mechanisms, hybrid restructuring, and stronger insolvency procedures—including simplified reorganization for smaller firms, to raise the system's capacity.
- World Bank (2021) *The Calm Before the Storm: Early Evidence on Business Insolvency Filings After the Onset of COVID-19*.[90] This paper explores early evidence on business insolvency filings and provides analysis into the reasons of their decrease in the onset of the crisis. While a combination of monetary, fiscal regulatory and legal reasons has helped many firms avoid insolvency, several factors, including lower sales, higher unemployment, firm liquidity challenges, and heightened corporate vulnerabilities, and the expected rise in NPL levels point to an increase in the number of business insolvency filings. The paper suggests addressing the prospect of a wave of bankruptcies by strengthening insolvency frameworks designed to save viable businesses while disposing of non-viable businesses.

89 IMF (2021)

90 World Bank (2021)

List of References

Acharya, V. V., T. Eisert, C. Eufinger and C. Hirsch (2019) *Whatever It Takes: The Real Effects of Unconventional Monetary Policy* The Review of Financial Studies, 32, pp. 3366-3411.

Acharya, V. V., M. Crosignani, T. Eisert and C. Eufinger (2020) *Zombie Credit and (Dis-)Inflation: Evidence from Europe* NBER Working Paper 27158.

Andrews, D, M A McGowan, and V Millot (2017) *Confronting the zombies* OECD Economic Policy Paper No. 21.

Alvarez, L., M. Garcia-Posada and S. Mayordomo (2021) *Distressed firms, zombie firms and zombie lending: a taxonomy* mimeo. Available at SSRN:

Altman E.I. (2014) *The Role of Distressed Debt Markets, Hedge Funds and Recent Trends in Bankruptcy on the Outcomes of Chapter 11 Reorganizations* ABI Law Review. Vol. 22, Issue 2, 75-112.

Altman, E. I. and R. Benhenni, (2019) *The Anatomy of Distressed Debt Markets* Annual Review of Financial Economics, Vol. 11, pp. 21-37

Andrews, D and F Petroulakis (2019) *Breaking the shackles: Zombie firms, weak banks and depressed restructuring in Europe* Working Paper Series 2240. European Central Bank

Armour, J. (2004) *Personal Insolvency Law and the Demand for Venture Capital* European Business Organization Law Review, 5, pp. 87-118.

Armour, J. and D. Cumming (2006) *The Legislative Road to Silicon Valley* Oxford Economic Papers, October, New Series, Vol. 58, No. 4, pp. 596-635.

Auerbach, A., Devereux, M. and H. Simpson (2010) *Taxing corporate income*, in Adam, S., Besley, T., Blundell, R., Bond, S., Chote, R., Gammie, M., Johnson, P., Myles, G. and J.M. Poterba (eds.), *Dimensions of Tax Design*, Oxford University Press.

Battaglia F., F. Busato and M. Manganiello (mimeo) *Equity crowdfunding: brave market or safe haven for the crowd during the COVID-19 crisis?*

Banerjee, R., J. Noss, J. M. Vidal Pastor (2021) *Liquidity to solvency: transition cancelled or postponed?*, BIS Bulletin no. 40

Banerjee, R. N. and B. Hofmann (2020) *Corporate zombies: Anatomy and life cycle* BIS Working Paper No. 882.

Benmelech E., (2021) *Leverage and the Macroeconomy: Implications of Low Interest Rates for Corporate Debt*, Paper presented at the 65th economic conference of the FRB Boston on *The Implications of High Leverage for Financial Instability Risk, Real Economic Activity, and Appropriate Policy Responses*

Berkowitz, J. and M. White (2004) *Bankruptcy and Small Firms' Access to Credit* 35:1 Rand Journal of Economics, pp. 69-84.

BIS Annual Economic Report 2021, ch. 1. *Covid and Beyond*

Blanchard O., T. Philippon, J. Pisani-Ferry (2020) *A New Policy Toolkit is Needed as Countries Exit COVID-19 Lockdowns* PIIE Policy Brief 20-8.

Blanco R., S. Mayordomo, Á. Menéndez and M. Mulino (2021) *Impact of the COVID-19 crisis on Spanish firms' financial vulnerability* Banco de España Occasional Documents, N.º 2119.

Bolton, P., Freixas, X., Gambacorta, L. and P. E. Mistrulli (2016) *Relationship and Transaction Lending in a Crisis* The Review of Financial Studies, Volume 29, Issue 10, pp. 2643–2676.

Bonfim, D, G Cerqueiro, H Degryse, and S Ongena (2020) *On-site inspecting zombie lending* CEPR Discussion Paper No. 14754.

Boot A, E Carletti, R Haselmann, H Kotz, J P Krahnen, L Pelizzon, S Schaefer and M Subrahmanyam (2020), *The coronavirus and financial stability*, VoxEU.org, 24 March.

Branzoli, N. and A. Caiumi (2020), "How effective is an incremental ACE in addressing the debt bias? Evidence for corporate tax returns"*, International Tax and Public Finance*, 27(3).

Brealey R., S. Meyers, F. Allen (2011) Principles of Corporate Finance, 2011, p.616

Bruche, M and G Llobet (2014) *Preventing Zombie Lending* Review of Financial Studies 27(3): 923–956.

Caballero, R., T. Hoshi and A. Kashyap (2008) *Zombie Lending and Depressed Restructuring in Japan* American Economic Review, 98(5), pp. 1943-1977.

Demmou I., S. Calligaris, G. Franco, D. Dlugosch, M.A. McGowan, S. Sakha (2021) *Insolvency and Debt Overhang Following the COVID-19 Outbreak: Assessment of Risks and Policy Responses.*

Diez F., Martinez Peria S., S. Kalemli-Ozcan, R. Duval, J. Garrido, N. Pierri, C. Maggi and J Fan (2021) *Insolvency Prospects Among Small-and-Medium-Sized Enterprises in Advanced Economies: Assessment and Policy Options,* IMF Staff discussion notes N. 2021/002

Djankov, S., O. Hart, C. McLiesh, and A. Shleifer (2008) *Debt Enforcement around the world* Journal of Political Economy, vol. 116, no.6.

ECB (2021) *Financial Stability Review*, May and the World Bank *Business Pulse Survey*.

Ernst Young (2021) *See Thirteen Sources of Finance for Entrepreneurs*

European Bank Coordination "Vienna" Initiative (2012) *Non-Performing Loans in Central, Eastern and Southeastern Europe*

European Commission (2021), *DEBRA – Debt Equity Bias Reduction,* Ref. Ares(2021)3879996 - 14/06/2021.

ESRB (2021) *Prevention and management of a large number of corporate insolvencies*

Fatica, S., Hemmelgarn, T. and G. Nicodeme (2012) *The Debt-Equity Bias: consequences and solutions* Taxation Papers n. 33, Directorate General Taxation and Customs Union, European Commission.

Favara, G., C. Minoiu, and A. Perez-Orive (2021) *U.S. Zombie Firms: How Many and How Consequential?* FEDS Notes No. 2021-07-30-2

Feld, L., Heckemeyer, J and M. Overesch (2013) Capital structure choice and company taxation: A meta-study, *Journal of Banking* and Finance, 37: 2850-2866.

FRB May 2021. The Fed - 2. Borrowing by Businesses and Households

FSB (2015) *Corporate Funding Structures and Incentives*, 28 August 2015

FSB (2021) *COVID-19 support measures: Extending, amending and ending*

Fukuda, S. and J. Nakamura (2011) *Why Did 'Zombie' Firms Recover in Japan? The World Economy,* 34(7), July 2011.

G30 (2020) Reviving and Restructuring the Corporate Sector Post-Covid.

García-Posada, M. and J. S. Mora-Sanguinetti (2014) *Are there alternatives to bankruptcy? A study of small business distress in Spain* SERIEs, Journal of the Spanish Economic Association, 5(2-3), pp. 287-332.

Giannetti, M and A Simonov (2013), *On the real effects of bank bailouts: Micro evidence from Japan* American Economic Journal: Macroeconomics 5(1): 135-67.

Gobbi, G., Palazzo, F. and A. Segura (2020) *Unintended effects of loan guarantees during the Covid-19 crisis* VoxEU post, 15 April 2020

Greenwood R., B. Iverson and D. Thesmar, 2020 *Sizing Up Corporate Restructuring in the COVID-19 Crisis* Brookings Papers on Economic Activity, vol 2020(3), pages 391-441.

Greenwood, R. and D. Thesmar (2020) *Sharing the Economic Pain of the Coronavirus* Harvard Business School Working Paper.

Griffith, R., Hines, J. and P.B. Sørensen (2010) *International capital taxation*, in Adam, S., Besley, T., Blundell, R., Bond, S., Chote, R., Gammie, M., Johnson, P., Myles, G. and J.M. Poterba (eds.), *Dimensions of Tax Design*, Oxford University Press.

Haque S. and R. Varghese (2021) *The COVID-19 Impact on Corporate Leverage and Financial Fragility,* IMF WP 2021/265

Hebous, S. and A. Klemm (2020), "A destination-based allowance for corporate equity", *International Tax and Public Finance*, Vol. 27: 753–777.

Hebous, S. and M. Ruf (2017) "Evaluating the effects of ACE systems on multinational debt financing and investment", *Journal of Public Economics*, 156: 131-149.

IMF (2021) Global Financial Stability Report Ch 2 *Nonfinancial Sector: Loose Financial Conditions, Rising Leverage, and Risks to Macro-Financial Stability*

Jordà Ò, M. Kornejew, M. Schularick, and A. M. Taylor (2020) *Zombies at Large? Corporate Debt Overhang and the Macroeconomy* NBER Working Paper No. 28197

JEL No. E44,G32,G33,N20

Kraemer-Eis, H., A. Botsari, S. Gvetadze, F. Lang, W. Torfs (2020) *European Small Business Finance Outlook 2020: The Impact of COVID-19 on SME Financing Markets* EIF Working Paper.

Laeven L., G. Schepens, I. Schnabel (2020) *Zombification in Europe in time of a pandemic* VoxEU 11 October

Mayordomo, S., Moreno, A., Ongena, S. and M. Rodríguez-Moreno (2020) *Bank capital requirements, loan guarantees and firm performance* Journal of Financial Intermediation, forthcoming.

McGowan, M. A., D. Andrews and V. Millot (2017) *Insolvency regimes, zombie firms and capital reallocation* OECD Economic Department Working Papers Eco No 31.

McGowan, M. A., D. Andrews and V. Millot (2018) *The Walking Dead? Zombie Firms and Productivity Performance in OECD Countries* Economic Policy, pp. 687-736.

Miller, M. and J. Stiglitz (1999) *Bankruptcy protection against macroeconomic shocks: the case for a 'super Chapter 11'* CSGR Hot Topics: Research on Current Issues 08, Centre for the Study of Globalization and Regionalization (CSGR), University of Warwick.

Morrison, E. (2009) *Bargaining around Bankruptcy: small business distress and state law*. Journal of Legal Studies vol. 38(2):255–307.

Myers, S. C. (1977) *Determinants of Corporate Borrowing* Journal of Financial Economics, 5 (2), pp. 147–175.

Nurmi, S., J. Vanhala and M. Virén (2020) *The life and death of zombies – evidence from government subsidies to firms* Bank of Finland Research Discussion Paper 8/2020.

OECD (2015) *New Approaches to SME and entrepreneurship financing: broadening the range of instruments*

OECD (2020) *COVID-19 Government Financing Support Programmes for Businesses*

OECD (2021) *Insolvency and debt overhang following the COVID-19 outbreak*

Peek, J and E S Rosengren (2005), "Unnatural Selection: Perverse incentives and the misallocation of credit in Japan", American Economic Review 95(4): 1144–1166.

Preminger J., G. Major, J. Rathbone (2020) *Rescuing and resetting the UK economy after COVID-19 via debt-to-equity swaps*, Small Business Charter.

Schiller, R. (2003): The New Financial Order - Risk in the 21st Century, Chapter 10: Income-Linked Loans: Reducing the Risks of Hardship and Bankruptcy

Schivardi, F, E Sette, and G Tabellini (2019), “Credit misallocation during the European financial crisis”, Working paper.

Skeel, D. (2020) *Bankruptcy and the Coronavirus* Brookings Working Paper.

Vishwanathan, N.S. (2018) *It is not business as usual for lenders and borrowers*, Speech delivered at NIBM Pune

World Bank (2012) *Out-of-court debt restructuring*, World Bank Report No. 66232.

World Bank (2014) *Insolvency and Creditor/Debtor Regimes Task Force. 2014. Report on the Treatment of the Insolvency of Natural Persons*

World Bank (2021) *The Calm Before the Storm: Early Evidence on Business Insolvency Filings After the Onset of COVID-19.*

World Bank *COVID-19 Business Pulse Survey*

World Federation of Exchanges (2021) *H1 2021 Market Highlights Report*

Zangari, E. (2014) *Addressing the Debt Bias: A Comparison between the Belgian and the Italian ACE Systems*, Taxation Papers n. 44, Directorate General Taxation and Customs Union, European Commission.

Zangari, E. (2020) “*An economic assessment of the evolution of the corporate tax system in Italy”*, Banca d’Italia, Temi di discussione, No. 1291.