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Zombie companies and the pandemic

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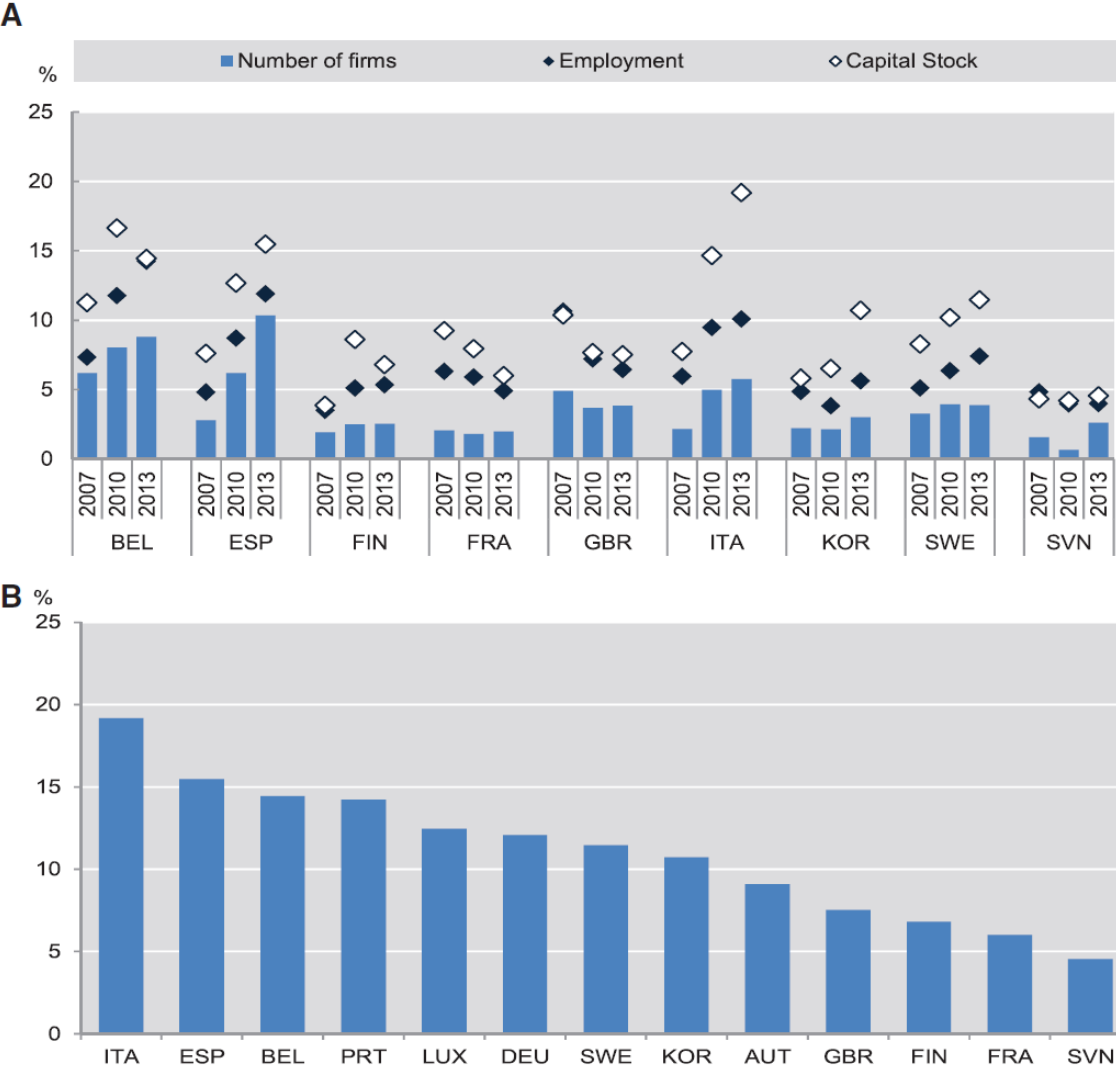
Zombie firms (i.e., firms that are unable to cover debt servicing costs from current profits over an extended period) are on the rise. Recent studies suggest that they constitute around 2 to 10% of all firms in an economy. This note discusses the origins of zombie firms and zombie lending, as well as the impact of the pandemic and government support on zombie firms. It proposes possible solutions to mitigate the importance of zombie firms in banks' portfolios, and formulates a few policy recommendations.

Non-financial firms typically rely on external financing for their investments and current operations. The COVID pandemic has led to a drastic increase in the debt mountain non-financial firms face all over the globe. While the pre-pandemic level of non-financial firm debt hovered around 90%, it jumped up to more than 100% at the end of Q3 2020. This increase paralleled the one in government debt and household debt.

The expansive monetary policy stance of central banks around the world implies that, for the time being, servicing this debt is not extremely costly due to the low level of interest rates. The servicing of the debt could become difficult when monetary policy tightens, or when firms' actual operations and prospects further deteriorate. This can lead to non-viable firms (so-called "zombie firms"), i.e., firms whose operating cash-flows persistently fall below their interest payments (Hu and Varas, 2021). Zombie lending occurs when a lender keeps a zombie firm alive through forbearance measures such as repayment holidays and temporary interest-only loans, or even increases exposure to zombie firms.

While the concept "zombie firms and zombie lending" was first coined in relation to the Japanese situation in the 1990s, a number of recent studies have investigated the importance of zombie firms in other jurisdictions. Banerjee and Hofmann (2018), for example, argue that zombie firms make up about 12% of all publicly traded firms across 14 advanced economies. Adalet McGowan, Andrews and Millot (2019) include also private firms for 13 countries, and find that the fraction of zombie firms (defined as firms older than 10 years with negative interest coverage ratio) varies in between 2% to 10% (see Figure 1). In that study, Belgium has around 6% zombie firms in 2007 and 9% in 2013, and classifies in the higher range. Estimates of the share of the capital stock sunk in zombie firms in 2013 range from under 5% in Slovenia to up to 19% in Italy, while the share of labor sunk in zombies is similarly low in Slovenia and is around 14% in Belgium. Over time, we see an increase in both the prevalence of zombie firms and the resources sunk in them.

Figure 1: The rise of zombie firms. (A) The share of zombie firms over time; 9 OECD countries. (B) The share of capital sunk in zombie firms in 2013; 13 OECD countries



Source: Adalet McGowan, Andrews and Millot (2019)

Note: Firms aged ≥ 10 years and with an interest coverage ratio < 1 over three consecutive years. Capital stock and employment refer to the share of capital and labor sunk in zombie firms. The sample excludes firms that are large than 100 times the 99th percentile of the size distribution in terms of capital stock or number of employees. Figure A1 shows zombie shares for two additional countries (Greece and Japan), which are not included in the following empirical analysis due to lack of productivity data.

Zombie lending may impact the macro-economic allocational efficiency in an economy. This happens when there are drops in productivity that stem from credit misallocation. As Laeven, Schepens and Schnabl (2020) note, the credit misallocation has an indirect and direct channel. The indirect channel takes place when zombie lending leads to distorted competition in the product and input markets (Schivardi et al., 2020, Tracey 2019). The direct channel reduces aggregate productivity by keeping low-productivity firms alive

and by imposing credit constraints on the high-productivity firms (Andrews et al. 2019; Banerjee and Hoffmann 2018, 2020; Blattner et al. 2021; Acharya et al. 2020).

In this note, we address the question whether and how the pandemic and its associated government support has impacted the prevalence of zombie firms, and which policy measures we have at hand to tackle them. In the remainder of this contribution, we first recap why zombie lending may occur. Next we look at how the pandemic and the associated government support may have affected the prevalence of zombie firms. Finally, we discuss remedies to zombie lending, and conclude.

Why does zombie lending occur?

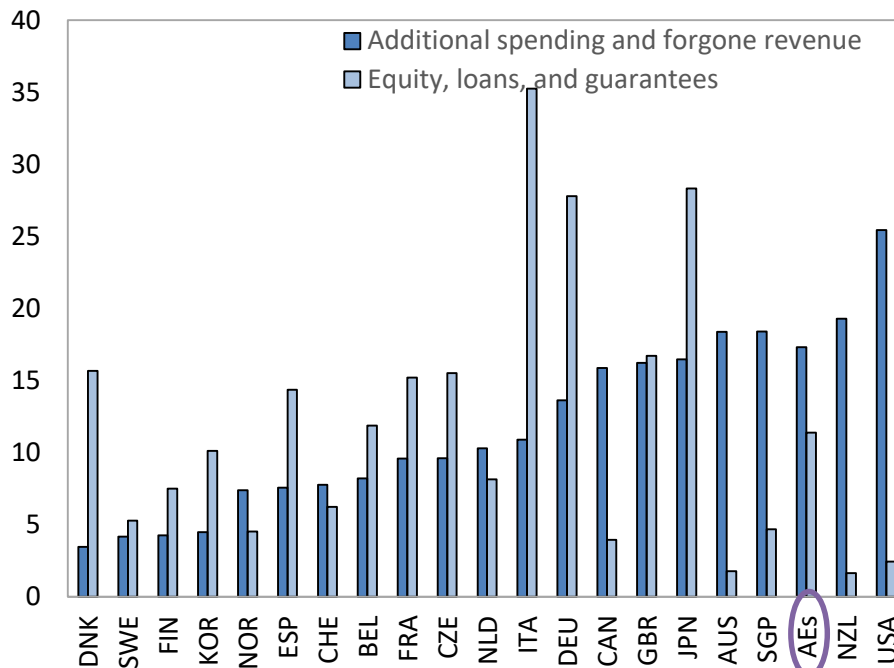
Zombie lending by banks occurs when banks engage in it and supervisors are not adequately dealing with it. Banks could engage in zombie lending for at least three reasons. First, as Hu and Varas (2021) point out, banks optimally continue lending to sufficiently reputable firms after learning bad news about them (i.e., after these reputable firms become zombie firms) due to the prospect of these firms accessing market or uninformed finance at a later stage. Second, banks may engage in zombie lending to specific firms to preserve valuable relationships stemming from information or cross-selling possibilities to the firm itself (e.g., Bolton et al., 2016), or to prevent disruptions of supply chains towards other bank customers (e.g., Giannetti and Saidi 2019, Gourinchas et al. 2020). Third, banks can lend to zombie firms to keep their own book equity unaffected by preventing distressed zombie borrowers going into loan default. Banks could do so by increasing their loan exposure to those borrowers such that previously granted loans do not go into default status, i.e., evergreening of loans (e.g., Peek and Rosengren 2005, Caballero et al. 2008, Giannetti and Simonov 2013, Bruche and Llobet 2014, Schivardi et al. 2020, Acharya et al. 2020). Such behavior is eventually reflected in a lower ability to repay these loans. A bank's capitalization plays a key role, since lowly capitalized banks have greater incentives to keep their book equity unaffected relative to highly capitalized banks (Andrews and Petroulakis, 2019).

The possibility to engage in zombie lending also depends upon the supervisory incentives in handling zombie lending. Banks' possibilities to engage in zombie lending depend upon the scrutiny of bank supervisors and supervisory forbearance. The degree of optimal regulatory forbearance of zombie lending by national regulators is modeled in Acharya (2003) and Steinkamp et al. (2021). In Acharya (2003), there is too much regulatory forbearance compared to the first best due to externalities among regulators and their supervised banks. A greater degree of forbearing in one country negatively affects the competitive position of banks in less forbearing countries, leading to greater regulatory forbearance in equilibrium. Steinkamp et al. (2021) further point to the common-pool problem of a monetary union. National regulators have incentives to be lenient regarding 'loan performance' as 'performing loans' can be pledged as collateral to the Eurosystem of central banks. The potential costs of bank failures are then partially shifted to the Eurosystem.

Pandemic and impact government support

Figure 2 provides the government support (as % of GDP) for different advanced economies (AEs) in response to the pandemic as of June 5, 2021 (IMF 2021). The dark blue bars present the “additional spending and foregone revenue” whereas the light blue bars the “equity, loans and guarantees”. We observe that Belgium has provided somewhat less direct fiscal support but about average liquidity support compared to other AEs, and finds itself to be somewhat the average of France and the Netherlands.

Figure 2: Government support in selected advanced economies.



Source: IMF; Database of Country Fiscal Measures in Response to the COVID-19 Pandemic; and IMF staff estimates

Note: Estimates as of June 5, 2021. Numbers in percent of GDP are based on July 2021 World Economic Outlook Update unless otherwise stated. Country group averages are weighted by GDP in US dollars adjusted by purchasing power parity. Data labels use International Organization for Standardization country codes. AEs = advanced economies

In its analysis of financial stability implications of the Covid19 support measures, the ESRB (2021) makes three key findings. “First, fiscal measures have protected the real economy and therefore the financial sector from the impact of the pandemic. These measures have ensured the continued provision of financial services: up to 35% of new bank lending to non-financial corporations (NFCs) during the pandemic has been associated with those measures. Second, differences in fiscal measures are closely correlated to the exposures of countries to the pandemic... Third, the report stresses the importance of continued monitoring of the effects of the pandemic on solvency in the corporate and banking sectors.”

While in the aggregate successful, the question still arises whether these policy measures have been primarily directed to non-zombie companies, or whether substantial misallocation of resources towards

zombie firms took place. In a frictionless world, government resources should not be directed to existing zombie firms, and also not to firms which see their business model deteriorate due to the permanent changes after covid, and could become zombie. However, due to the existence of externalities related to the possible failure of zombie firms, some allocation of resources to “borderline” zombies might be warranted.

While it is very early to draw definitive conclusions, initial insights can be gleaned from two studies. The first by Tielens, Piette and De Jonghe (2021) focuses on Belgium. They study the allocation issue in detail after the first wave of the pandemic. To do so, they sort firms according to labor productivity and profitability before the pandemic, and find that 40% most unproductive firms account for only 15% of the total debt moratorium volume. In contrast, temporary unemployment accrues disproportionately to relative labor unproductive firms (by design of the support measure). All in all, their conclusion after the first wave was that the leakage towards the zombie firms was relatively mild.

A second study as summarized by Coeuré (2021) focuses on France. In general, he finds that firms with increased turnover received less of the government money. In particular, starting with the allocation in the first wave, firms reporting a higher turnover in Q2 2020 than in Q2 2019 accounted for 27% of employment and received only 14% of subsidies paid out by the Solidarity Fund and job retention scheme by the end of September 2020. Disbursements were even better targeted during the second wave. Firms reporting a higher turnover in Q4 2020 than in Q4 2019 accounted for 47% of employment and received 10% of subsidies from October 2020 to March 2021. Furthermore, they find that firms identified as ‘zombies’ before the crisis did not mobilise the government supporting schemes beyond their share of the economy (that is, 7.5% of employees and 4% of value added) in either the second or first wave. In sum, Coeuré (2021) concludes that “few firms have requested the full support to which they were entitled; zombie firms haven’t been disproportionately supported; and support was channeled ex post to firms most impacted by the crisis, particularly during the pandemic’s second wave.” The initial findings thus suggest that allocation of government resources did not go disproportionately to zombie firms.

Solutions to zombie lending

How to reduce the presence of zombie firms in an economy? How to reduce zombie lending? A few solutions to zombie lending exist. The first comes from the firm’s side where injection of new equity (preferably by conversion of debt or other fixed claims) may help in resolving the zombie status of companies. To the extent that a social planner finds the possible negative externalities of failure of zombie firms important, we could envisage to stimulate this conversion by providing fiscal incentives when all stakeholders contribute to this.

Other solutions are to solve incentives creditors face to engage in zombie lending. There is evidence that requiring banks to hold substantially more *capital* can be an effective tool, since low-capitalized banks are more prone to zombie lending (e.g. Acharya et al. 2020, Caballero et al. 2008, Giannetti and Simonov 2013, Schivardi et al. 2020), and have greater incentives to wipe the problems under the carpet.

Bonfim et al. (2021) ask whether stricter bank supervision and supervisory scrutiny can help. They show that supervisory on-site inspection programs may offer part of the solution, in case banks adjust their

behavior when facing stricter supervisory scrutiny. They show that tighter supervisory scrutiny through on-site inspections reduces zombie lending: inspected banks reduce lending relative to other banks towards the same zombie firms following the on-site inspections. They further find that zombie firms are more likely to default following the stricter supervisory inspections of their main bank. Industries with a higher exposure to the inspections experienced a higher rate of firm creation and increases in average productivity. Therefore, these results suggest that the inspections had a cleansing effect in the economy.

The literature therefore suggests two important ways to deal with zombie lending after the pandemic. First, banks should have sufficient capital buffers such that they are able to recognize losses on non-performing loans to zombie firms. Second, supervisors should put extra scrutiny to make sure that banks do not continue lending to zombie firms. This extra scrutiny may come from arm's length supervisors and international bodies that are not too close to the supervised banks and political influence.

Conclusions and policy recommendations

The pandemic has had an unprecedented impact on the society – sanitary but also economically. Government support towards households and firms had a broad scope and limited conditionality in many countries. While important data such as financial statements for 2020 and 2021 are still lacking to make an in-depth assessment, it is an important question on whether government support has been effective and was allocated to viable, healthy firms with business models that are future proof.

Zombie firms were already an important part of many economies across the world, and were on the rise in recent years, with numbers ranging between 2 to 10 % of all companies. The pandemic generated a partial standstill of the economy with some sectors being more hit than others. The regulator also introduced a moratorium on bankruptcies implying that the necessary creative destruction was prevented. A natural question then arises whether government support went towards zombie firms or not. Initial findings for Belgium and France seem to suggest that zombie firms did not disproportionately benefit from such support. While this is reassuring, the question of course is what the benchmark should be. In a world without externalities, you would want to prevent government funds to go to zombie firms. In a world with externalities due to interlinkages across firms and households, some leakage to zombie firms may be warranted.

We conclude by giving some policy recommendations towards fiscal authorities and bank supervisors, to limit the possible further zombification of the economy.

- Fiscal authorities. Government support has focused heavily on liquidity and only recently moved towards solvency. Equity-like injections or debt-equity swaps are important at this stage in order to make sure “borderline” viable firms turn viable. Fiscal stimuli to encourage such schemes could be warranted.
- Bank supervisors. Banks can only engage in zombie lending to the extent that supervisors let them do so. Forcing banks to hold enough capital to absorb losses when recognizing zombie lending combined with strict on-site inspections by (independent) supervisors may limit the zombie lending problem, and induce the necessary creative destruction.

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