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Large-scale government and central bank interventions in the context of the COVID-19 crisis have reinvigorated the debate on the threat of a zombification of the economy if unviable firms are kept alive. This column surveys the existing literature and argues that the COVID-19 crisis is very different from previous experience. It proposes a number of policy actions that can prevent a zombification of the economy.

The COVID-19 crisis has prompted extraordinary financial support to firms by governments and central banks. This support has taken the form of public credit guarantee schemes, debt moratoria, direct support to firms via financial aid programmes, central bank lending and purchase programmes, and a loosening of micro- and macro-prudential supervisory rules.

While this support is crucial to keep a cash-strapped economy afloat, it has invigorated a debate on whether such policies are promoting 'zombie' lending and 'zombie' firms.[1]

Zombie lending is generally defined as lending to non-viable (i.e. zombie) firms. The literature proposes different methods to measure zombies, which remains challenging, however.[2] The 'zombification' of the economy refers to a situation where public support programmes and bank lending actions keep unviable firms alive. This term gained widespread prominence following the Japanese crisis of the 1990s, when a collapse in real estate prices followed by a prolonged period of low growth resulted in many weak banks and firms, with weak banks preserving their lending relationships with weak firms, rolling over credits to unviable firms.

Why would banks lend to alleged zombie firms? The literature has put forward two main explanations. On the dark side, banks may want to engage in the 'evergreening' (i.e. rolling over) of existing loans to avoid loan loss recognition. Recognising loan losses implies a deterioration of capital buffers. It therefore follows that especially low-capitalised banks have an incentive to lend to zombies (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). On the bright side, banks may lend to zombies to preserve valuable relationships. To the extent that relationship lenders have an informational advantage over their customers, this may allow them provide credit to illiquid but viable firms in crisis times (Bolton et al. 2016). Provision of such liquidity to firms in distress has the positive externality that it can avoid disruptions of supply chains (Giannetti and Saidi 2019, Gourinchas et al. 2020).

Zombification and the role of central banks

A zombification of the economy is of great concern because it can lead to a drop in productivity through credit misallocation. This credit misallocation channel can operate both directly and indirectly. The direct channel arises mechanically because keeping zombies alive reduces aggregate productivity, or through a crowding-out effect when zombie lending tightens the credit constraints of high-productivity firms (Andrews et al. 2017; Banerjee and Hoffmann 2018, 2020; Blattner et al. 2019; Acharya et al. 2020). The indirect channel arises from congestion effects, whereby subsidies to weak firms may distort competition in both

product and input markets, and lead to a reduction in long-term investments of zombie firms (Caballero et al. 2008, Acharya et al. 2019, Andrews and Petroulakis 2019). The relevance of this indirect channel is, however, debated in the literature (Schivardi et al. 2020, Tracey 2019).

Financial support from governments and central banks can affect the scope for zombie lending. While government support schemes will provide relief to cash-strapped firms, and allow illiquid but viable firms to survive, they can impede creative destruction and generate moral hazard when there is no efficient sorting mechanism in place to ensure that only firms that need it receive support.

Similarly, the provision of central bank liquidity and low interest rates can support illiquid but viable firms. However, they may also mask zombies because indebted firms become more viable at lower interest rates and such policies may prevent an orderly restructuring of firms when kept in place for a prolonged period of time (Acharya et al. 2020, Acharya 2020). The literature has not found a clear link between the level of interest rates and the incidence of zombification. Within Europe, the large variation of 'zombie' shares across countries would also suggest that the single monetary policy is unlikely to be the main driver of zombification (Obstfeld and Duval 2018, Bindseil and Schaaf 2020). By contrast, there is broad agreement within the literature that strong bank capitalisation reduces the scope for zombie lending, as especially low-capitalised banks are prone to zombie lending (e.g. Acharya et al. 2020, Caballero et al. 2008, Giannetti and Simonov 2013, Schivardi et al. 2019). Additionally, efficient insolvency frameworks can reduce zombie lending, as evergreening incentives are stronger in countries with weak insolvency frameworks (Andrews and Petroulakis 2019).

This time is different

The COVID-19 pandemic has given rise to unprecedented policy support to firms, which has also intensified the debate on a potential zombification of the economy. There are at least three reasons to believe that this time may be different from some of the earlier experiences.

- First, the pandemic shock is hitting firms in sectors that are otherwise generally viable. The shock was not caused by excessive risk-taking by firms or banks, as in previous financial crises. Many sectors that have gone into (partial) lockdowns, such as tourism, will rebound after the pandemic. For these sectors, this shock is therefore a liquidity squeeze not a solvency shock.
- Second, banks entered this episode with relatively high capital positions and therefore should be able to absorb loan losses to a larger extent. This should, at the same time, reduce adverse incentives.
- Third, the health and economic ramifications of the pandemic have brought about exceptionally large-scale government support, which has mitigated the liquidity squeeze and the risk that illiquidity turns into insolvency.

The different nature of the crisis means that many firms that normally would be classified as zombie firms are in fact viable firms.[3] They are experiencing temporary liquidity squeezes because the distancing measures have led to a collapse in aggregate demand. Banks will therefore play their part to preserve valuable lending relationships to firms that are experiencing temporary weaknesses. Moreover, the usual crowding-out effect of zombie lending is less likely in an environment with extraordinary liquidity support and depressed credit demand.

The scale of the shock clearly calls for a broad-based government intervention to prevent unnecessary bankruptcies (Gourinchas et al. 2020). The challenge is that there exist no efficient sorting mechanisms that can be put in place to ensure that government support is only reaching firms that are illiquid but not insolvent. During a crisis of this nature it is extremely hard to distinguish illiquid from insolvent firms. Government intervention therefore faces a trade-off in keeping the economy afloat at the risk of funding some insolvent firms (Gourinchas et al. 2020, Gagnon 2020).

Of course, the longer the pandemic lasts, the more damage will be done to the real economy, reducing cash buffers and pushing firms over the cliff into bankruptcy, resulting in a greater depletion of bank capital. The risk then grows that zombification arises.

How to prevent zombification?

The crucial question is, therefore, how zombification can be prevented. Research suggests four policy areas to reduce the scope for zombie lending.

First, government credit guarantees and subsidies that were necessarily put in place quickly during the outbreak of the pandemic need to be fine-tuned to ensure that money goes as much as possible to viable firms with liquidity problems. At the same time, one has to think carefully about how and when to exit credit guarantee schemes. Gobbi et al. (2020) argue that the introduction of credit guarantees increases the collateral value of a loan above its non-guaranteed value, encouraging bank lending. By the same token, the removal of guarantees will likely reduce collateral values, potentially encouraging loan foreclosures. These considerations would call for a smooth phasing out of government credit guarantees, to avoid cliff effects on bank lending. At the same time, incentives for zombie lending and the associated risks of cliff effects would be much reduced if firms were financed with equity instead of debt, also counteracting a looming debt overhang. Therefore, the phasing out of credit guarantees could be usefully complemented with measures that promote the use of equity (or equity-like) instruments to reduce the excessive reliance on debt-based instruments.

Second, supervisory authorities need to ensure that banks maintain sound capital positions, because especially low-capitalised banks are prone to zombie lending. After the crisis, many banks may display markedly reduced capital buffers. Recent supervisory recommendations for banks to temporarily scrap dividends and share repurchases are important from this perspective to maintain solid capital levels, and thereby lower the risk of zombie lending.[4]

Third, as the pandemic evolves and it becomes clearer which borrowers are viable or not, supervisory authorities need to ensure that banks provision adequately for loan losses on a forward-looking basis. Recognising and provisioning for loan losses reduces zombie lending as it removes the incentive to hold on to these loans (Bonfim et al. 2020). Moreover, there is a need to promptly tackle the build-up of non-performing loans in case of rising corporate defaults.

Finally, and from a longer-term perspective, it is of great importance to improve the efficiency of insolvency frameworks and bankruptcy laws, as evergreening incentives are stronger in environments with weak insolvency frameworks. Within Europe, this calls for further efforts to harmonise insolvency frameworks across countries, as foreseen under the Capital Markets Union action plan. This will help put the zombies to rest rather than having them haunt the economy for a prolonged period of time.

Authors' note: The views expressed here are our own and do not represent those of the ECB or the Eurosystem.

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Endnotes

1 See, for example, "Here's one more economic problem the government's response to the virus has unleashed: Zombie firms", *Washington Post*, 23 June 2020; "Reasons to fear the march of the zombie companies", *Financial Times*, 24 June 2020; "Bank of Japan coronavirus loans may ensure 'zombie' firms", *Japan Times*, 10 September 2020.

2 In practice, research uses a broad range of proxies to identify zombie firms, ranging from the inability to make interest payments from operating income (e.g. McGowan et al. 2017, Acharya et al. 2019) or receiving credit at subsidised rates (Caballero et al. 2008) to the persistent lack of profitability (e.g., Storz et al. 2017, Schivardi et al. 2019), or a combination of these proxies. In defining zombies, it is important to differentiate between crisis and normal times, and to consider whether firms experience a temporary drop in cash flow or have a long-term inability to repay debt. The literature typically focuses on crisis-related events when liquidity and solvency issues often become blurred and it is harder to identify zombies.

3 Based on the usual classifications used in the literature based on profitability and interest coverage, virtually all firms in sectors adversely affected by social distancing (e.g. airlines) would be classified as zombies. Indeed, Nurmi et al. (2020) show that typical classifications used in the literature often mislabel firms that experience temporary revenue declines as zombie firms.

4 See, for example, https://www.federalreserve.gov/newsevents/pressreleases/bcreg20200930b.htm and https://www.bankingsupervision.europa.eu/press/pr/date/2020/html/ssm.pr200728_1~42a74a0b86.en.html.