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Growing corporate debt and the zombie company effect

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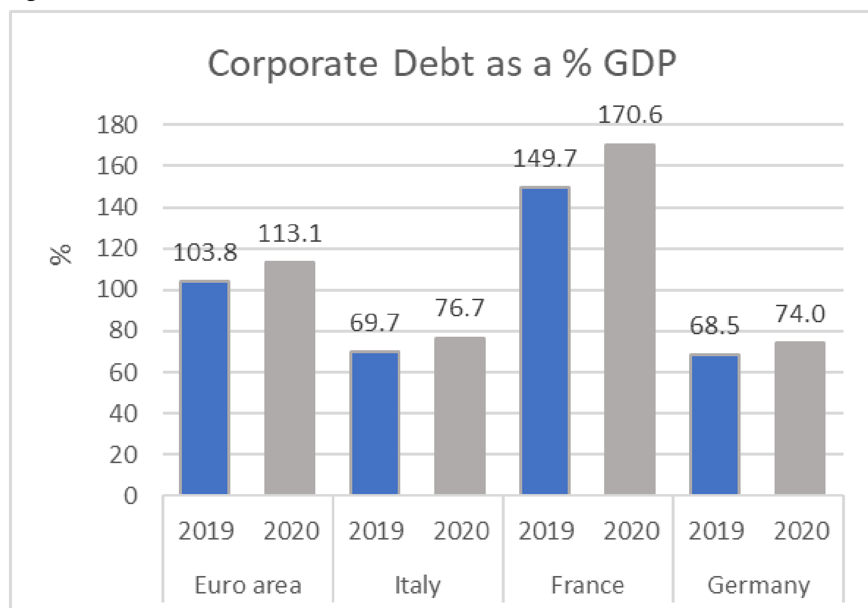
The Covid-19 pandemic has hit already undercapitalised and excessively leveraged European companies hard. As a result of the lockdowns in the spring of 2020, demand plunged for many businesses and their sources of earnings dried up. At the same time their costs increased, as their productivity and capacity dropped due to containment measures, supply chain disruptions and generalised uncertainty.

Due to the liquidity drains and the erosion of equity capital caused by the major economic shock associated with the pandemic and its containment measures, unprecedented monetary, fiscal and prudential policies were needed to help firms cope with the crisis and protect jobs. The ultimate aim was to prevent otherwise solvent firms from shutting down or going bankrupt.

More specifically, national governments' interventions included direct financial support in the form of grants, as well as guarantees for loans and moratoria from bankruptcy and loan repayments. These measures have proved crucial to preserve favourable credit market conditions, support bank lending to businesses and prevent a wave of insolvencies of otherwise viable and productive firms.

However, while all these relief measures provided vital support to the economy and ensured the survival of many businesses in the short term, given the emergency, they did not explicitly intend to separate viable firms from non-viable ones, or to address the impending erosion of the companies' equity base. On the contrary, coming in the form of debt, all these measures multiplied corporate indebtedness (see Figure 1), raising default risk in the medium term (Crouzet and Tourre, 2021) and potentially deterring firm investment (Hennessy et al.,2007; Demmou et al., 2021) and slowing the pace of economic recovery (Kalemli-Ozcan et al., 2018).

Figure 1



Source: Bank for International Settlements

Therefore, the same policy measures may have supported not just otherwise viable firms, but also firms that cannot sustain their business over time but continue operating, artificially kept alive by cheap credit and debt forbearance – i.e., *zombie* companies. This has in turn raised the question about a rise

in zombification in the euro area economy, which could constrain the post-pandemic recovery.[1]

According to Helmersson et al. (2021), 3.4% of companies in the euro area qualified as zombies even before the pandemic started. Bear in mind that the existence of a few zombie companies is physiological, because of frictions in credit markets or bankruptcy courts, and might be even beneficial in the short term because avoiding bankruptcy prevents layoffs and protects input markets. But major growth in corporate zombification is potentially very dangerous in the medium term.

In a smoothly-functioning economy, capital should flow towards more productive uses at the expense of less productive ones. A rich body of literature dating back to Hopenhayn (1992) has shown that the exit of low productivity firms and the reallocation of their resources to more productive firms are the keys to aggregate multifactor productivity and ultimately economic growth.
In a seminal paper on the Japanese stagnation during the 1990s, Caballero et al. (2008) show that zombie lending, which can be generalized to a manifestation of inefficiencies in the firms' exit margins, slows down such productivity-enhancing capital reallocation, reducing corporate restructuring and delaying recovery.[2]

More specifically, zombification leads to market congestion and inefficient capital allocation, which weighs on aggregate productivity growth. The reason for this is that zombie lending reduces the flow of bank credit available to more productive firms, and healthy firms compete with de-facto subsidized zombie firms in the input and product markets. Such negative spillovers on healthier firms in turn can eventually translate into lower economic outcomes such as employment, productivity, innovation, investment and sales growth.

This argument finds its theoretical roots in Hayek's seminal theory of business cycles, which identifies the misallocation of capital during periods of low rates as the main culprit for recessions. In addition, Myers' debt overhang theory asserts that excessive debt negatively affects firms' investment and employment.[3] Most recently, it is Acharya et al. (2021) who fully model the adverse economic externalities and the negative spillovers on healthier firms imposed by zombie lending and show how this delays economic recovery from crises and can potentially result in permanent output losses.

Empirically, this finds support in a large number of recent papers focused on zombie lending during the European sovereign debt crisis, which show that the spillover effects of providing credit to non-viable companies can be substantial. A more numerous presence of zombie companies is associated with a slower recovery and a deterioration of the relative performance of healthy firms (Storz et al. 2017; Adalet McGowan et al., 2018; Blattner et al., 2018; Andrews and Petroulakis, 2019; Schivardi et al., 2017).[4] More specifically, in Europe, Acharya et al. (2020) find that non-zombie companies experienced a reduction

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[1] A note by the ECB Single Supervisory Mechanism (2020) reports that public guarantees allowed banks to lend more that they would otherwise have been able to, pointing out that under these schemes banks were nonetheless required to maintain sound lending standards and to continuously assess the creditworthiness of borrowers.

[2] Depending on the industry, the presence of zombie companies reduced other firms' cumulative investment growth between 0.1 and 3 percentage points, and employment between 6% and 14%.

[3] In a seminal departure from the classic Modigliani and Miller (1958) Theorem on the irrelevance of the firm's capital structure, Myers (1977) showed that default risk undermines the incentives to invest for indebted firms. Some projects with positive net present value are not undertaken as equity holders do not benefit in case of default and part of the value added is transferred to creditors.

[4] Note that in all these papers, zombie lending emerges from the distorted incentives of weak banks that want to avoid provisioning and raising capital. With Covid-19, instead, the concern over zombie lending emerges from an eventual reduction in incentives to banks to screen and monitor borrowers if, as a result of public guarantees, the default risk is absorbed in full by the government and credit might accrue disproportionally to the non-viable firms more likely to demand it. Another concern could be that record low interest rates and the compression of yields from unconventional monetary policy reduce the debt service burden of non-viable firms. Also note however that Schivardi et al. (2020) question the causal interpretation of the results of these papers due to their identification problems.

of their investment rate between 7% and 24% depending on the industry, and an employment loss between 3% and 11%. All this was due to the presence of zombie companies in the years following the sovereign debt crisis.

In addition, increased corporate zombification also poses medium-term risks to the financial system. If the credit risk of zombies is not properly priced, banks, governments and investors will be left exposed should the viability of these companies be challenged following unexpected adverse shocks, a weak recovery or an unbalanced withdrawal of policy support measures.

Looking ahead, high levels of corporate debt by historical standards can be an obstacle to economic growth (Brunnermeier and Krishnamurthy, 2020). What's more, European policymakers are called to face complex tradeoffs between continuing to provide support to firms to minimize unwarranted bankruptcies and save jobs, containing fiscal cost and encouraging resource allocation toward the firms that are more productive.

Tackling the risk of zombification is already an onerous task. For European companies to recover, alternative types and sources of funding will be required to help mitigate their mounting debt burden. AFME (2021) estimates that €324 billion of the debt in the EU is unsustainable, of which 57% is attributable to SMEs. The resulting equity gap according to AFME is around €1 trillion, or 2-3% of the European gross domestic product (Ebeke et al., 2021).

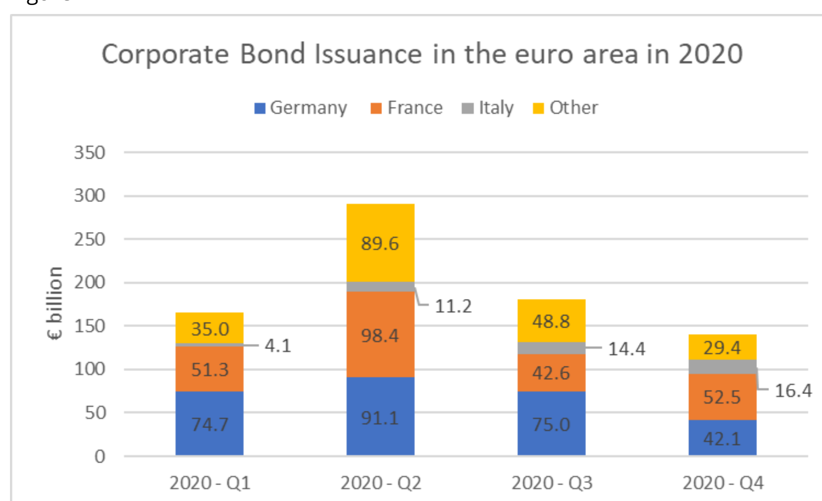
The objective of this column is to update the estimates about the recapitalisation needs of European firms to critically discuss what has been done so far and propose new policy measures to preserve business continuity, reduce corporate indebtedness and fill the equity funding gap.

Assessing the health of the European corporate sector and understanding the size and distribution of the equity injections required to rebalance companies' capital structure is not only timely but also of the utmost importance in designing policies going forward.

What is the market telling us?

In the months following the onset of the Covid-19 pandemic, corporate bond issuance surged, with gross issuance volumes substantially higher than in the pre-crisis period (see Figure 2).

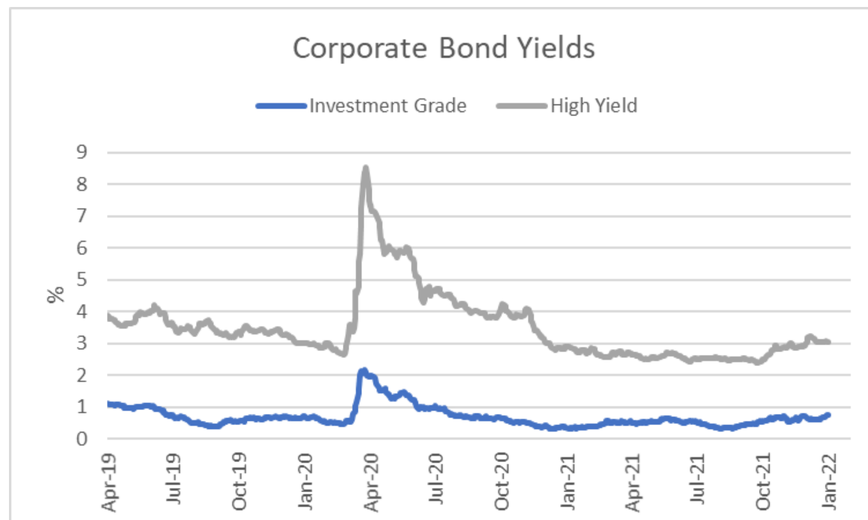
Figure 2



Source: Dealogic

Companies facing liquidity problems, especially the more creditworthy ones, found easy access to market funding. This was facilitated by central banks' accommodating monetary policy and asset purchase programs, which helped to maintain favourable financing conditions and reduced the cost of debt (see Figure 3).

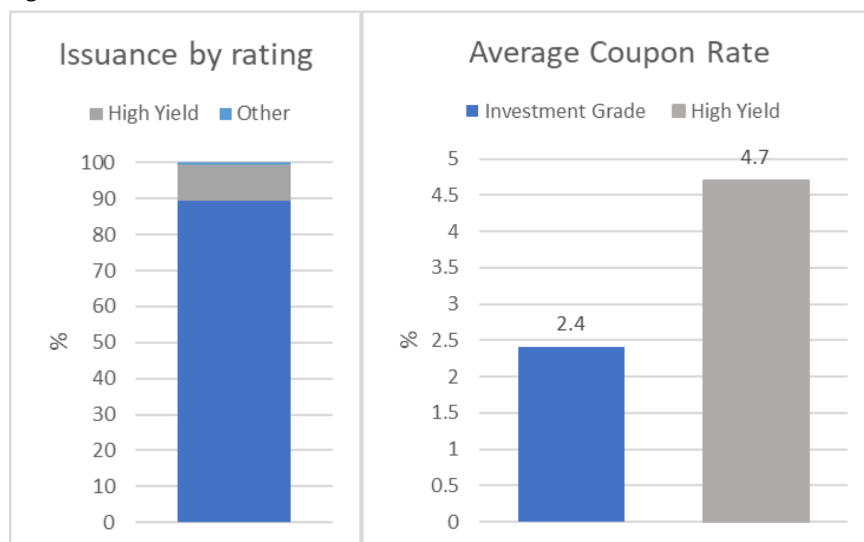
Figure 3



Source: Markit Iboxx € Corporates and Iboxx EUR High Yield

Pricing in capital markets also showed some signs of complacency for high yield issuers. The overall tightening of credit spreads was accompanied by decreased price differentiation with respect to fundamental credit characteristics (see Figure 4).

Figure 4

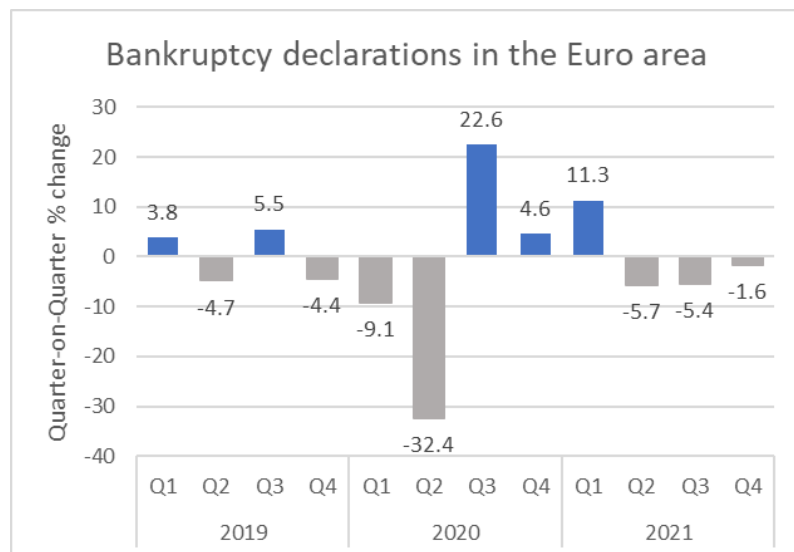


Source: Dealogic

More specifically, Helmersson et al. (2021) report very small differences between bond spreads of adjacent rating classes by historical standards. As of May 2021, all spreads were below the 5th percentile of their daily data series since January 2010. In particular, the spread between CCC and B rated issuers, as well as those at the B-BB and BB-BBB borders were all around 20 basis points, down by more than 40, 20 and 10 basis points respectively, compared to April 2020.

Another indication that firms at the lower end of the credit spectrum have benefited from favourable funding conditions comes from insolvency data, which suggest higher chances of survival. This in light of the fact that the number of bankruptcies dropped by approximately 25% since the outbreak of the pandemic compared to pre-crisis levels (see Figure 5).

Figure 5



Source: Eurostat

This same trend is confirmed in Italy as well, where despite an 8.9% drop in GDP in 2020 (ISTAT), Orlando and Rodano (2022) observe approximately one-third fewer corporate bankruptcies or exits compared to 2019. In addition, they find that the incidence of bankruptcies or exits is not correlated with the intensity of the economic shock at the sector level, nor does the number of companies going bankrupt or exiting the market in 2020 differ in any significant way from 2019. This, combined with the higher take up rates for the economic relief measures in those sectors that were more severely hit by drops in revenues, seems to suggest that emergency policies have been effective in preventing a wave of bankruptcies, and the resulting loss of productive capacity, employment and human capital.

What is a corporate zombie? Parameters and alternative definitions

Prior studies use alternative definitions of corporate zombies and diverse criteria for identifying them. In the seminal paper by Caballero et al. (2008) zombie companies are defined as firms that receive subsidized credit. Put another way, these are firms for which the interest payments over outstanding debt are below the prime rate, which is measured by the average rate charged to high-quality borrowers. No specific reference is made to firm profitability, and the underlying idea seems to be that zombie companies are kept alive by banks that lend to them at prices that do not reflect their true default risk.

However, more recent studies extend the notion of zombies to represent all low-productivity companies that would typically exit in competitive markets, either through bankruptcy or takeover. These are firms that do not generate enough cash flows after paying for labour and replacing existing capital to remunerate providers of external capital. Typically, they are identified by comparing measures of operating profits with interest expenses. A company is classified as a zombie if its operating profits are lower than interest expenses for a certain number of consecutive years.
In the absence of a single definition, prior studies have identified zombie firms by combining in various ways a component of performance coupled with some indication of subsidized credit or high debt:[5]

[5] The traditional definitions used in the literature to identify zombie companies may be of limited use when the number of zombie companies allowed to survive is very likely correlated to the economy-wide distribution of firm performance, as during a crisis (Schivardi et al., 2020). However, differently form typical macroeconomic shocks, Covid-19 has hit different sectors with widely

- Storz et al. (2017) and Helmersson et al. (2021) use the combination of negative returns on assets (ROA), negative net investment (change in total assets) and low debt servicing capacity (EBITDA over debt below 5%). A company is classified as a zombie if meets all three criteria over two consecutive years.
- Adalet McGowan et al. (2018), Banerjee and Hofmann (2018), Andrews and Potroulakis (2019) and Pelosi et al. (2021) all apply a measure that compares EBIT with interest expenditures, thus focusing on a firm's difficulty in meeting interest payments after paying for all inputs. A company is classified as a zombie if its interest coverage ratio is less than 1 or negative for 3 consecutive years, and the company is at least 10 years old.[6]
- According to Acharya et al. (2020), in addition to receiving subsidized financing, zombie firms have a rating of BB or lower, whereas Acharya et al. (2021) use interest coverage below the median and leverage above it.
- Schivardi et al. (2020) define zombies as low creditworthiness firms, which obtain an Altman Z-score of at least 8 out of 10, with higher values signalling a higher probability of default.

To better understand the differences across these definitions, Pelosi et al. (2021) apply a number of them to compare zombie companies and other firms in light of certain key firm characteristics. They show that proxies based on comparing profits to interest expenses are better able to classify low-productivity, high-default-risk companies.

Other recent studies explore the anatomy and life cycle of zombie companies (e.g., Banerjee and Hofmann, 2020; Bargagli-Stoffi et al.,2020; Helmersson et al., 2021). In line with the concerns that zombie firms may weaken overall economic productivity and growth, they are 20% smaller (in total assets) and 21% less productive compared to other firms. In addition, zombie firms grow less in terms of assets and employment, while investing less in physical and intangible capital. Their total factor productivity is lower, producing less per unit of labour and capital employed. At the same time, they are 60% more leveraged. But despite all this, the interest they pay on their debt is not substantially higher than other firms.

Of the total number of zombie companies that Banerjee and Hofmann (2020) identified since the 1980s, only 25% exited the market, while around 60% managed to recover. However, they remain weak and fragile compared other firms and are more likely to relapse into zombies.

Estimating the extent of the zombie firm phenomenon in Europe

According to prior studies, depending on the different definitions, zombie companies can account for up to 10% of incumbent firms, representing more than 15% of capital stock in countries like Spain, Italy or Greece (Adalet McGowan et al. 2018; Bargagli-Stoffi et al.,2020).

Their incidence is rather cyclical and linked to economic and credit cycles. In Italy, for example, the share of capital stock corresponding to zombie companies more than doubled from 7% to 19% between 2007 and 2013, and then declined steadily since the end of the European sovereign debt crisis (Adalet McGowan et al. 2018).

As of 2019, before the outbreak of the Covid-19 pandemic the incidence of zombie companies in the euro area was 3.4%, well below the peaks following the sovereign debt crisis but still above pre-financial-

differing degrees of severity, which provides researchers with a source of exogenous cross-sectional variation that they can exploit to more clearly identify the real effects of zombie lending, as for example in Pelosi et al. (2021).

[6] Rodano and Sette (2017) show that the incidence of zombie firms may be overestimated when the proxy used to identify these firms is based on profitability net of depreciation and amortization; these authors recommend using an EBITDA-based interest coverage ratio instead.

crisis levels (Helmersson et al., 2021).
In Italy, Pelosi et al. (2021) estimate that, depending on the industry, the share of zombie companies stood at around 3-5% of active firms, accounting for 4-10% of total assets and less than 5% of value added. Moreover, zombie companies employed about 2-4% of active workers and accounted for less than 8% of investment.

In this section we aim to provide updated estimates of corporate zombification for the three major economies of the euro area and present comparative statistics before and after the pandemic. With this in mind, we collect financial information for a large sample of non-financial companies in Italy, France and Germany between 2017 and 2020 from Orbis.[7]

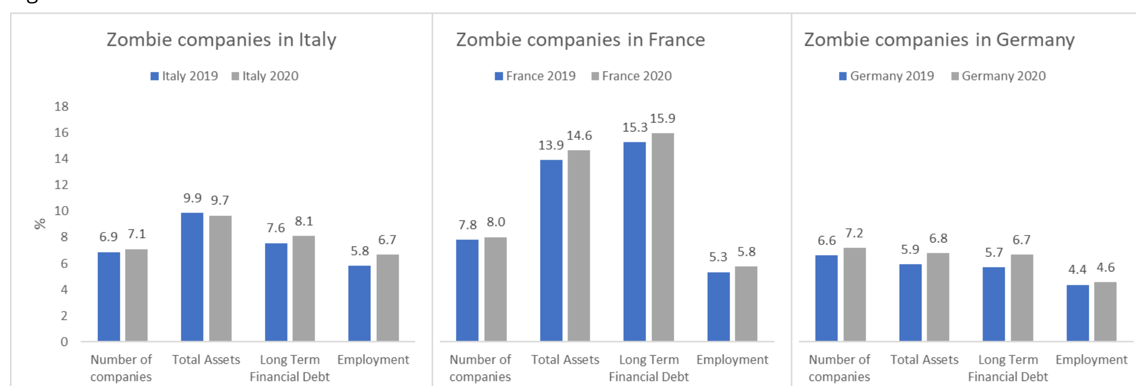
We include in our sample all active companies incorporated in either Italy, France or Germany with accounts available on Orbis for all the years in our sample period. We exclude companies that are not classified as corporate. Our sample counts all 1,155,366 companies, and 4,621,464 firm-year observations.

Based on the definitions provided in the previous section, we identify zombies as companies that meet at least one of the following criteria:

- Report a negative return on assets (ROA), a negative percentage change in net fixed assets and an EBITDA to debt ratio below 5% over two consecutive years, in line with Storz et al. (2017) and Helmersson et al. (2021); or
- Report an interest coverage ratio computed on the basis of EBITDA that is below 1 for two consecutive years, in line with Adalet McGowan et al. (2018), Banerjee and Hofmann (2018), Andrews and Potroulakis (2019) and Pelosi et al. (2021).

Overall, we find only a moderate uptick in the incidence of zombie companies in 2020 compared to the year before, prior to the outbreak of Covid-19 (see Figure 6). Depending on the country, the fraction of companies that classify as zombies can range between 7% in Italy and 8% in France. However, zombie companies account for a larger share of total assets (14.6%) and long-term financial debt (15.9%) in France than they do in Italy (9.7% and 8.1%, respectively) or Germany (6.8% and 6.7%). Vice versa, zombie companies weigh relatively more in terms of employment in Italy (6.7%, up by 0.9 percentage points since 2019) than in France (5.8%) or Germany (4.6%).

Figure 6



Source: Authors' elaboration

Unlike typical macroeconomic shocks, Covid-19 has hit different sectors with widely differing severity.

[7] Our analysis is based on financial information up to 2020, which is the latest available data for most of the companies. The full extent of corporate zombification from the pandemic will only be measurable as more post-Covid balance sheet data are published in the coming years.

The pickup in corporate zombification that we observe at the aggregate level could hide more pronounced impacts at the sectoral level. We explore this possibility by taking a closer look at the subsample of Italian companies. Here we find the incidence of zombie firms varies significantly across sectors, ranging from just above 2% for banking, insurance and financial services, up to approximately 13% for agriculture. Between 2019 and 2020 the fraction of zombie companies increases in 23 of the 29 sectors that we consider in our analysis. Not surprisingly, the largest upturn is in the travel and leisure sector, where the number of zombie companies grows by almost 20% (i.e., up by 2 percentage points). The most notable exception is in IT services, where this figure drops by about one-half to just above 2%. (See Figure 7 for an overview of the ten most affected sectors.)

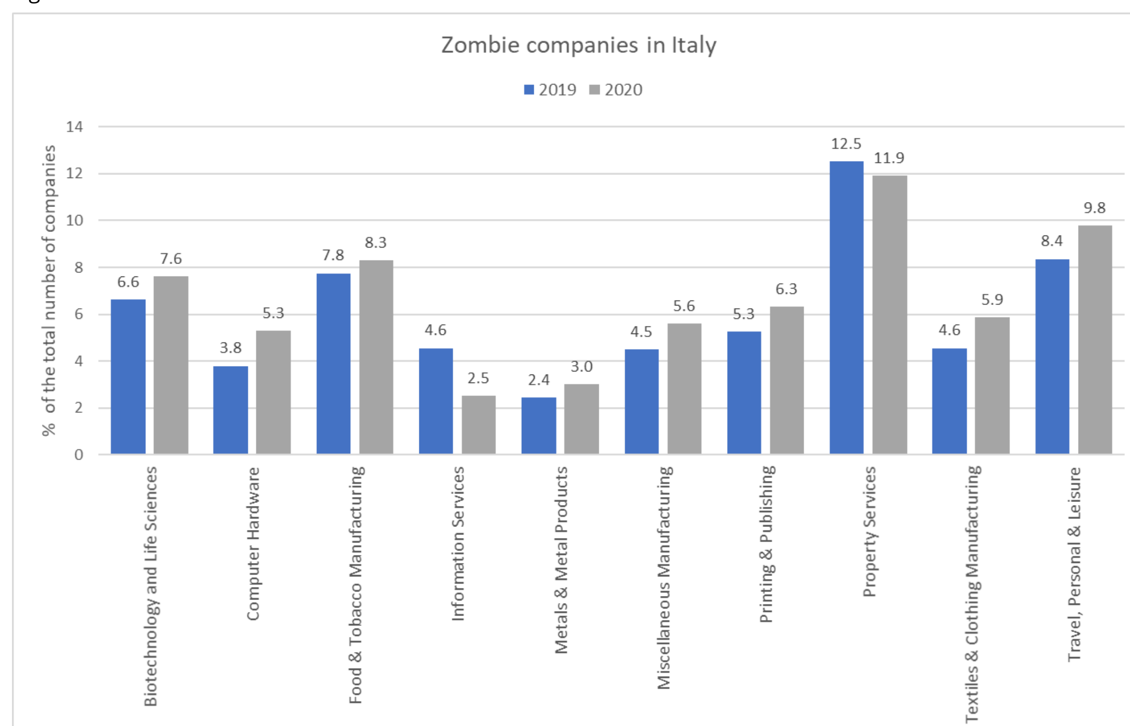
On the one hand, in line with Helmersson et al. (2021), our estimates confirm that eligibility criteria in line with the European Commission guidelines were successful in providing viable firms access to economic support measures. However, the same criteria may have been unable to prevent firms identified as zombies from being eligible for public support. On the other hand, our estimates also seem to indicate that economic relief measures are unlikely to have amplified the incidence of zombies significantly.

This result is consistent with Pelosi et al. (2021). In controlling for industry and province fixed effects that proxy for the intensity of the Covid-19 shock, they discover that zombie companies were between 16% and 21% less likely to receive a grant, between 4% and 7% less likely to put their debt into moratorium and between 14% and 22% less likely to obtain loans guaranteed by the government grant.

These authors also find that zombie companies also received smaller loans, as the size of their guaranteed loans were between 44% and 49% smaller than those granted to other firms, but their loans were 12% more likely to be fully guaranteed.

Therefore, while fewer companies exited the market overall in 2020, most of those that did were already zombie companies before the outbreak of the Covid-19-pandemic, mitigating concerns of zombification.

Figure 7



Source: Authors' elaboration

Quantifying the unsustainable debt/equity gap in Italy

The current low number of insolvencies in Europe belies the fragile health of the corporate sector going forward. The EU commission estimated the damage to corporate equity from the losses incurred as a result of the containment measures of Covid-19 in the range of €0.7 - 1.2 trillion (AFME, 2020). While state-guaranteed loans have helped businesses avoid a liquidity crisis, European companies are facing historically high debt levels, deteriorating profitability and undercapitalisation, which is a bad combination for solvency in the medium run.

In one of the first papers that tried to quantify the impact of Covid-19 lockdown measures on firm leverage and possible financial distress, in a large sample of Italian companies, Carletti et al. (2020) estimate that a drop in their net income in line with a 10% reduction of GDP would produce an equity shortfall of approximately €117 billion, or about 7% of GDP. These authors also predict that the resulting erosion of equity capital would drive as much as 17% of the companies in their sample into financial distress, as the book value of their equity would become negative. These are typically smaller, less profitable, less capitalised and more labour-intensive companies, while larger enterprises are expected to fare relatively better. Overcoming the equity shortfall of these companies alone would require an equity injection of €31 billion, according to forecasts by Carletti et al.

At the European level, Ebeke et al. (2021) quantify the impact of both the pandemic and country-specific business sector relief measures on corporate liquidity and solvency risk using a simulation approach. They find that the public support measures can fill up to 60% of companies' increased liquidity needs, but cover just 30% of the increase in the overall equity gap. According to their estimates, additional equity capital equivalent to about 2-3% of the GDP of the European Union is required to close this gap and provide struggling firms with sufficient capital so they would no longer be in difficulty.

Consistently, using feedback from large and small corporates and private sector investors, AFME (2021) quantifies the size of total equity financing needs to recapitalize EU companies post-Covid-19 and avoid a very damaging medium-term rise in leverage and operating flexibility of the overall corporate sector at about €1 trillion. This figure is obtained by extrapolating the aggregate expected contraction in companies' equity following a negative shock to GDP between -8% and -15% with respect to a baseline pandemic-free scenario.

Following up on these forecasts, in this section we aim to provide an updated estimate of the equity gap of Italian corporates. To do so, we focus on the 657,965 companies introduced in the previous section and obtain our estimates of their equity shortfalls by comparing their actual capitalization ratios (equity to total assets) with alternative target levels that would make them financially sound.

Note that our task is fraught with difficulties stemming from the many different assumption that we need to make. Therefore, in our analysis we consider a range of alternative scenarios about the main unknowns, that is, what target level of capitalisation would make a company financially sound.

To this end, we start our analysis by collecting information on the capitalisation ratio of all the companies in the euro area with an issuer rating by S&P of BBB-, the lowest investment grade notch, or lower (see Table 1).

Table 1 Book Value of Equity over Total Assets (%)

	#	MEAN	SD	MIN	MED	MAX
BBB-	26	40.2	15.3	12.7	37.8	78.8
BB+	23	37.3	18.2	10.8	36.1	83.6
BB	16	31.9	11.8	14.8	33.3	51.4
BB-	17	31.5	17.8	-5.6	34.4	60.1
B+	8	27.9	13.4	12.4	28.6	42.4
B	12	35.3	13.9	18.0	35.7	59.4
B-	10	21.8	23.6	-13.1	18.5	61.4
CCC+	9	11.8	23.4	-26.2	10.1	40.1

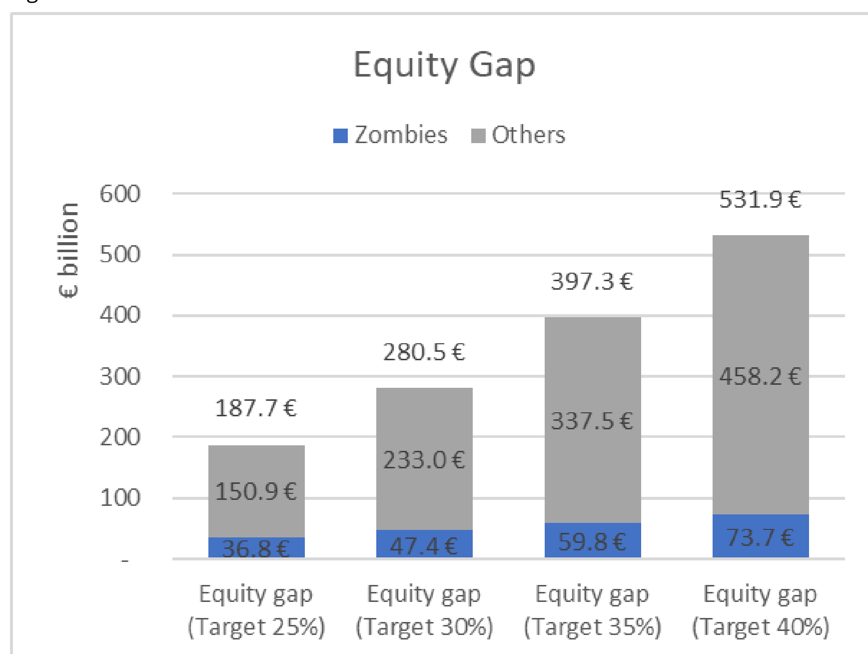
Source: Capital IQ, 2020

While there is significant heterogeneity within each rating category, capitalisation ratios are almost monotonically inversely related to company creditworthiness. Therefore, based on these capitalization ratios we can calibrate our estimates of equity gaps according to four different target scenarios:

- Target 25%, to represent the crossover from C-rated to a B-rated category;
- Target 30%, to represent the crossover from a B-rated to BB-rated category;
- Target 35%, to represent the upper notches of the BB category; and
- Target 40%, to represent the crossover from high yield to investment grade rating classes.

We calculate that the additional equity capital required to restore the balance sheet of Italian companies ranges from about €188 billion in aggregate terms for them to obtain a B-rating, to approximately €532 billion for them achieve an investment grade rating, depending on the alternative target capitalisation ratios (see Figure 8).

Figure 8



Source: Authors' elaboration

Our estimates might be regarded as upper bounds for two reasons. First, our calculations assume new equity injections are required to return to solvency, while not taking into account deleveraging via asset sales or retained earnings. In this respect, our approach is quite demanding since for a given level of total assets it requires a one-to-one substitution of debt for equity.

Second, our estimates also include the equity shortfalls of zombie companies, while the most desirable outcome would be their exit from the market. Their contribution to the aggregate equity gap is substantial, ranging from approximately €37 billion to just below €74 billion, depending on the target capitalisation ratio.

Remarkably, these estimates can also provide us with an approximate indication as to what portion of the outstanding debt of Italian companies is currently unsustainable. The equity shortfall of companies in financial distress, that is, those with negative book value of equity, amounts to €20.7 billion, with approximately one-third of this amount corresponding to zombie companies. This suggests that at least €14 billion of debt outstanding is already unsustainable and needs restructuring.

Policy recommendations going forward

With corporate leverage at record levels, many fear that the emergency lending facilities associated with the Covid-19 pandemic have pushed debt ratios up even higher while earnings have fallen, potentially amplifying the risks from debt overhang.

Moreover, with a substantial share of corporate debt secured by state guarantees, and expected default rates on the rise, many see in the disorderly execution of these guarantees an increasingly worrisome time bomb for public finances.

Considering that the economic cost of excessive leverage rises when inefficient debt restructuring and liquidation impede the resolution of corporate financial distress, future policy should prioritise actions aimed at ensuring the business continuity of viable firms while handling the exit of zombie firms in an orderly fashion.

In this spirit, in the following pages we present the case of Italy more in detail. We also formulate a proposal to address the problem of fully supporting viable companies in a post-pandemic economy, while preventing negative externalities from zombie companies from slowing down the speed of the recovery.

A focus on Italy

2020 was an exceptionally challenging year: the impact of Covid-19 Pandemic on the Italian economy – and the world's - was significant and the economic and social effects will last for years to come. Indeed, the International Monetary Fund (IMF, 2021) has estimated that the economic impact of Covid-19 will persist until 2025, and further uncertainty is now triggered by the recent outbreak of the Ukrainian-Russian conflict.

In this context, the Italian GDP registered a sizeable downturn in 2020 (-8.9% compared to 2019 according to ISTAT, 2021) standing at €1,653 billion. The contraction was mainly driven by the sharp drop in the second quarter, coinciding with the restrictive measures adopted by the Italian Government in response to the worsening health emergency. Overall, all demand components contracted sharply, except for public spending (+1.9% compared to 2019 (ISTAT, 2021)) since the Government was forced to intervene with extraordinary measures. The debt-to-GDP ratio jumped from 134.3% in 2019 to 155.6% in 2020 mainly due to GDP contraction (ISTAT, 2021).

In March 2020, all non-essential economic activities were forced to shut down operations in compliance with government measures to contain the health crisis, together with mobility restrictions. Small and medium-sized enterprises, which represent the backbone of the Italian economy, were among the most affected by the pandemic.

Against this backdrop, the Government set up several rescue measures to prevent a credit crunch for enterprises. These measures focused almost exclusively on debt instruments, mainly traditional bank lending, such as a moratoria on existing indebtedness and state-guaranteed financing, which are described in detail in the following sections.

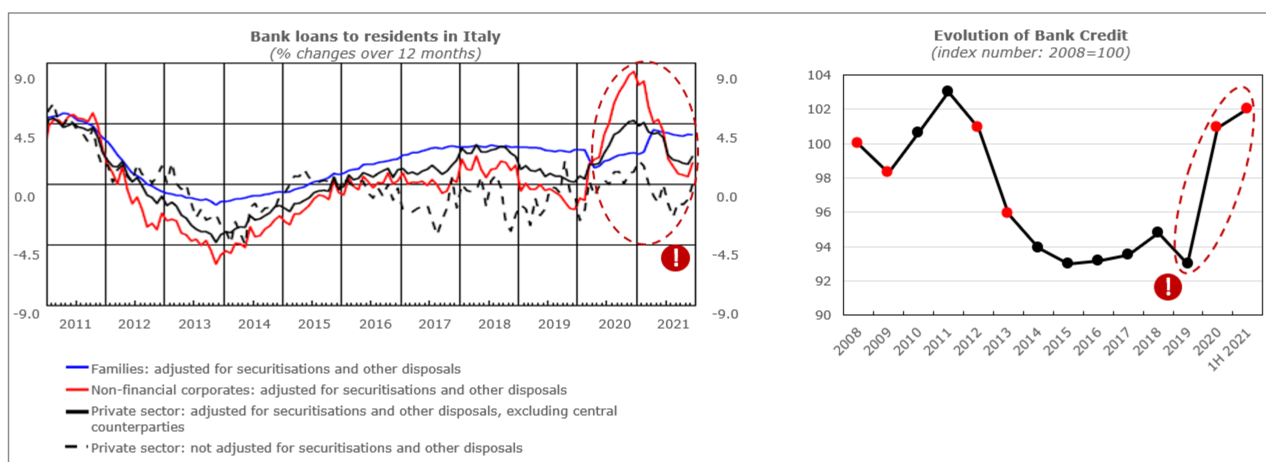
The purpose of this second part of the third Quarterly Column is to analyse the effect of the Covid-related measures implemented to date by the Italian Government to support companies and assess what needs to be done further. In particular, the following sections focus on (i) the recent evolution of the Italian credit market, (ii) the description of government measures and the public entities involved, (iii) the amount of resources deployed to support companies, and (iv) potential inflows of Covid-related NPEs and a possible solution to manage the impact on economic activity and public finances triggered by the expected wave of corporate defaults.

Recent evolution of the Italian credit market

With reference to the rescue measures put in place by the government, the main evidence of the liquidity provided to Italian firms to date is the increase in loans granted to corporates registered year by year both in 2020 and 2021.

In fact, the stock of bank loans to corporates increased by +8.5% in 2020 compared to 2019 (Banca d'Italia, 2021). This trend continued in 2021: December figures show a rise of +1.6%[8] in loans compared to 2020 (see Figure 9).

Figure 9



Source: Banca d'Italia, Banche e Moneta: national series, January 2021

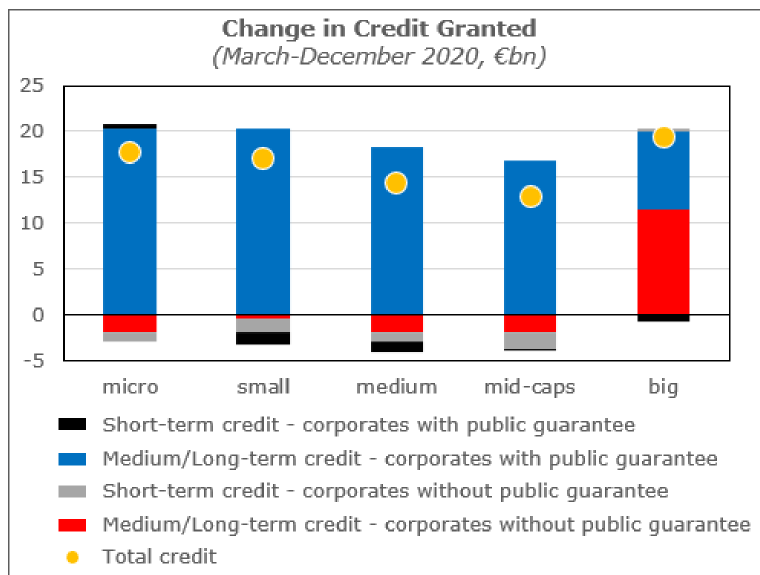
Figure 9 shows that lending to corporates peaked sharply over the period 2020-2021 compared to previous recessions (red markers), which instead registered a decline in credit to corporates (i.e. -2% in 2009, -7% over the 2012-13 period, according to Banca d'Italia).

Furthermore, Banca d'Italia analysed the evolution of credit granted by banks and financial institutions between March and December 2020, finding that medium-long term financing was the most relevant form of financing.

Figure 10 shows growth in medium and long-term financing mainly driven by loans backed by public guarantees, and a slight decrease in short-term debt which affected all enterprises indistinctly. This reflects companies' choice of a more stable source of financing in a period of high uncertainty as far as the economic outlook. Also, guaranteed financing was the preferred option for small and medium-enterprises, while large enterprises opted for financing without a public guarantee.

[8] Banca d'Italia, Banche e Moneta: national series, February 2022 and January 2021. The increase in loans is adjusted for securitisations and other loans sold and written off from banks' balance sheets.

Figure 10

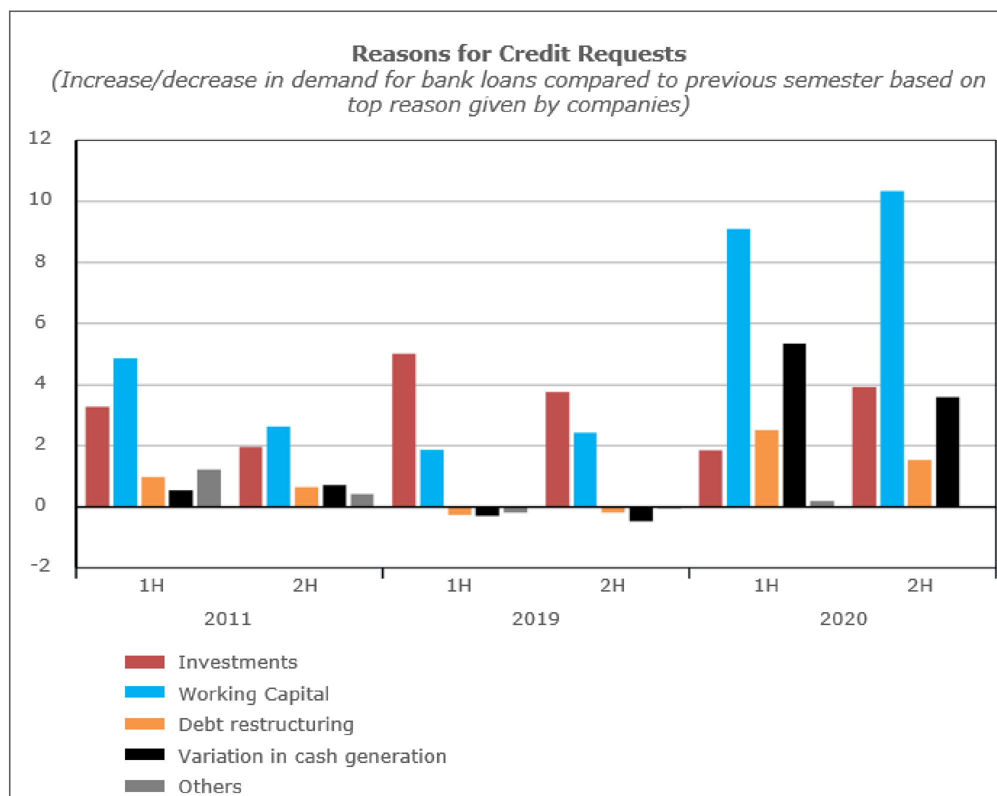


Source: Banca d'Italia (2021)

However, it is worth mentioning that, in addition to measures put in place by the Government, credit has also been supported by low interest rates. The EONIA interest rate dropped below -0.5% since April 2020, together with the 3-month Euribor which is currently at rock bottom, the record lowest level since 2016 (Bloomberg and ECB). Indeed, the expansionary monetary policies of the ECB and the decrease of the risk premium required by lenders have strongly supported credit, especially in the Covid-19 context.

As can be expected in a scenario such as the pandemic, the main uses for the liquidity granted to companies throughout 2020 related to covering short-term needs, such as working capital gaps and cash flow shortages, at the expense of investments (see Figure 11).

Figure 11.

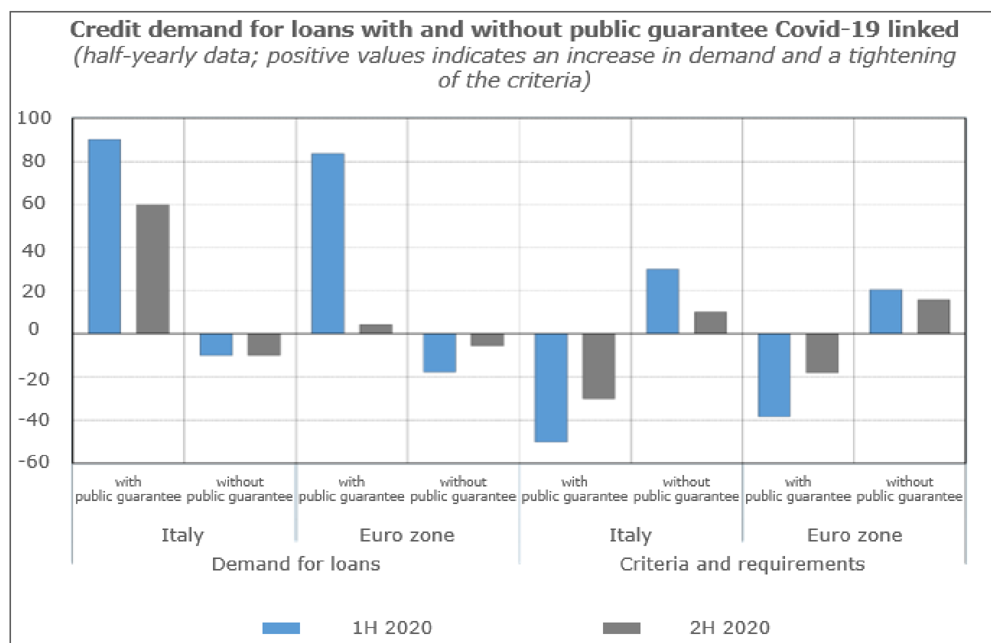


Source: Banca d'Italia (2021)

An additional direct effect of the measures in question relates to the proliferation of guaranteed loan and looser requirements for access to credit.

As shown in Figure 12, the Italian credit market has experienced significant changes both in terms of demand and supply, as have most European economies.

Figure 12



Source: Banca d'Italia (2021)

On one hand, the Italian market has shown a significant escalation in demand for guaranteed funding, in line with the Eurozone. The stronger demand registered in the second half of 2021 compared to the rest of Europe is mainly due to delays in the implementation of the Decreto Liquidità (Liquidity Decree, described below).
On the other hand, the Italian Government has significantly loosened the criteria and requirements for guaranteed loans, together with other European economies (i.e. France and Spain) (ECB, 2021). However, the overall credit standards for non-guaranteed loans have experienced a parallel tightening.

Overall, it comes as no surprise to see that, from a short-term perspective, the rescue measures have been effective in preventing severe impacts on the liquidity profile of Italian firms. Yet it remains to be seen whether these measures will have a significant impact on public finances and taxpayers' money, and more generally on the soundness of the Italian economy.

Covid-19 rescue measures implemented by the Italian government

Between March and June 2020, the Italian government issued two Decree Laws:

- On 2 March 2020, Decree Law 9, later incorporated into the subsequent broader legislative intervention in Decree Law 18, '*Cura Italia*', dated 18 March 2020;
- On 8 April 2020, Decree Law 23, *'Liquidità',* later incorporated into the subsequent broader legislative intervention in Law 40, dated 5 June 2020. This Decree further strengthens the existing policies of the *Cura Italia* while introducing new and more effective provisions at the same time.

Both decrees activated measures to provide liquidity to companies and business activities heavily affected by the pandemic, introducing provisions focused on debt instruments in order to avoid a new credit crunch. In more detail, the government put in place the following measures to prevent liquidity shortages of small and medium-sized as well as large enterprises:

1. Moratoria ex-lege. The *Cura Italia* Decree introduced, among other things, Article 56 which provides a

moratoria on loan payments, as well as derivative contracts and other credit lines. Companies eligible to take advantage of this measure were micro-, small- and medium-sized enterprises,[9] based in Italy, which were not in a distressed situation and did not have any debt exposures classified as non-performing, unlikely to pay or overdue. The possibility to benefit from the moratoria was subject to a declaration provided by creditors, banks, financial intermediaries, and other entities qualified to grant credit in Italy. Said declaration had to be accompanied by a self-certification from the company attesting to the sudden lack of liquidity due to the pandemic.

In addition, to facilitate access to credit, banks and other lenders could request a guarantee equal to 33% of the loan amount, in accordance with a dedicated section of the *Fondo Centrale di Garanzia per le PMI* (*Central SME Guarantee Fund*, described below). Originally, €1,730 million were allocated to this special section of the Fund in 2020. The amount was subsequently adjusted €1,438 million in 2020 (pursuant to DecreeLaw 23/2020 and Decree Law 104/2020) and €300 million for 2021 (pursuant to the 2021 Budget Law178/2020, Article 1, paragraph 254).

The moratoria was initially set to be valid until 30 September 2020, and later extended to 31 December 2021 (limited to instalments only) by Decree Law73/2021 ("*Sostegni-bis*" Decree).

2. Central SME Guarantee Fund. Operating since 2000, this Fund was first enhanced by the *Cura Italia* Decree, to then be further strengthened by the Liquidity Decree which introduced new provisions as exceptions to the normal rules for the Fund. In particular, the Liquidity Decree introduced, among other things:

- raising the cap on the guarantee from €2.5 million to €5 million;
- waiving fee payments;
- automatically extending the guarantee linked to the Covid-related moratoria;
- granting automatic access to 100% guarantee coverage (up to 90% starting from July 2021) to new loans of up to €30,000 granted to SMEs and individuals conducting business activities that were negatively affected by the Covid-19 outbreak, with no assessment required.

Designed to facilitate access to credit and support economic growth of micro-, small-, and medium-sized enterprises, the Fund represents the most important public credit guarantee scheme in Italy (Caselli et al., 2020). However, starting from March 2021, the 2021 Budget Law provided for the "migration" of guarantees for loans granted in favour of mid-caps (i.e., enterprises with up to 499 employees, determined on the basis of the FTEs recorded for the year 2019, as specified in Article 64-bis of Decree Law 104/2020) to the *"Garanzia Italia" SACE* (described below).

With respect to financial resources allocated to this program, the Fund was initially refinanced by the Liquidity Decree with €1,729 million for 2020. However, subsequent decrees, together with the 2021 Budget Law, provided for additional refinancing of almost €18 billion, of which ca. €4 billion in 2020 and ca. €14 billion for the period 2021-2026. Moreover, the resources from the Next Generation EU Programme (Law 178/2020, Article 1, paragraphs 246 and 247) will also contribute €500 million for the year 2022. The 2022 Budget Law further multiplied the resources allocated to the fund for ca. €3 billion, bringing the total additional resources to ca. €21 billion.

Banca del Mezzogiorno - Mediocredito Centrale (described below) was mandated by the Ministry of Economic Development to manage the Fund together with five financial institutions who act as sponsors (i.e. Artigiancassa – BNP Paribas Group, MPS Capital Service Banca per le Imprese, Intesa Sanpaolo, BFF Bank and UniCredit).

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[9] In accordance with the EU Commission Recommendation of 6 May 2003 concerning the definition of micro-, small and medium-sized enterprises. Said definition includes enterprises which have less than 250 employees and a turnover of less than €50 million or an annual budget below €43 million.

The period of validity for these extraordinary provisions (initially set at 2020 year-end) has been extended until 30 June 2022 by the 2022 Budget Law and the "*Milleproroghe" Decree.*[10]

3. "Garanzia Italia" SACE. Through the Liquidity Decree, the government introduced an additional provision to support businesses through a state guarantee, which is provided by a government-controlled entity, SACE. Originally, SACE was mandated to support the export and internationalization of Italian firms. The Liquidity Decree widened the SACE's mandate to include, inter alia, the possibility to support companies severely impacted by the pandemic, guaranteeing from 70% to 90% of bank loans (the percentage of coverage is inversely proportional to company size). In particular, the SACE Guarantee benefitted SMEs (including self-employed and VAT-registered professionals), provided that they had already made full use of the Central SME Guarantee Fund, if eligible. In this respect, the *Garanzia Italia* acted like a complementary measure to the Central SME Guarantee Fund.
The total budget allocated to the SACE Guarantee was set at a maximum of €200 billion (of which, at least €30 billion was earmarked to support SMEs, including self-employed and VAT-registered professionals).

The validity period of these extraordinary provisions (initially set at 2020 year-end) was extended until 30 June 2022 by the 2022 Budget Law. Public financial institutions played a crucial role as administrators of national credit-support programs on behalf of the government (Anderson et al., 2021). Besides banks, to implement these measures, the Italian government leveraged on the following institutions:

- *MedioCredito Centrale (MCC):* fully owned by the Italian government since 2017 (precisely, by Invitalia[11]) and directly supervised by *Banca d'Italia* under ECB supervisory oversight, it operates mainly to support investment and development in Southern Italy. The MCC aims to facilitate SMEs' access to credit, to foster synergies between credit policies and development initiatives, and to strengthen public interventions in strategic areas.
- *SACE*: previously owned by *Cassa Depositi e Prestiti (CDP)* and recently re-acquired by the MEF, it supports Italian companies and SMEs in the process of internationalisation, through financing activities, guarantees to export trade credits, technical assistance, and professional consultancy services, together with the 76% controlled subsidiary *SIMEST.*[12] During 2020, the Liquidity Decree widened the scope of SACE's operations to include, inter alia, the possibility to grant guarantees (i.e. *Garanzia Italia*) in favour of lenders to facilitate SME access to credit. However, considering the provisions introduced in the Liquidity Decree, 90% of the commitments deriving from SACE's guarantee activity, for non-market risks, are taken on by the State.

The following table summarises the key supporting measures against Covid-19 effects put in place by the Italian government (see Table 2).

[10] The *Milleproroghe* Decree set the maximum amount of the guarantee at €5 million, and also made it available for high-risk enterprises (i.e. level 5 of the MCC Valuation Model).
[11] MCC, Annual Report, 2020.
[12] Simest is outside of the transaction perimeter involving the sale of SACE from CDP to the MEF.

Table 2: Key Covid-19 support measures

	Moratoria	Central SME Guarantee Fund	*Garanzia Italia*
Reference Decree	*Cura Italia*	*Cura Italia*; Liquidity; *Milleproroghe*	Liquidity
Implementing body	Banks/Single entities	*MedioCredito Centrale*	SACE
Key contents	Moratoria loan payment	Public credit guarantee to SMEs	Public credit guarantee to large enterprises
Resources	n.a.	- Additional €1.7 bn moratoria-related - Additional €21 bn to traditional activities	Up to €200 bn
Duration	Ended in December 2021	Valid until June 2022	Valid until June 2022

Firepower: the amount of resources deployed to fight the effects of the Covid-19 pandemic

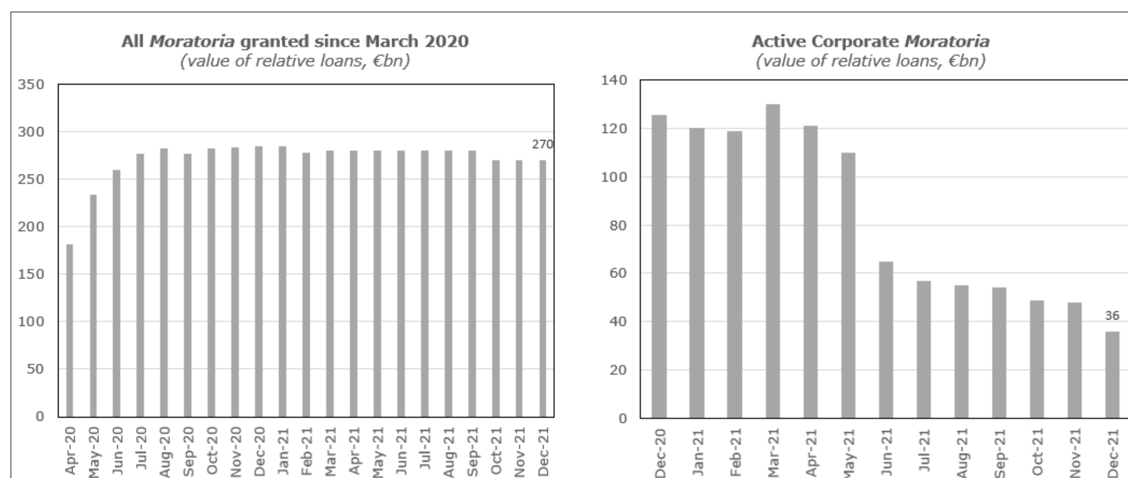
In order to assess the magnitude of all the above-mentioned measures adopted by the Italian government, it is worthwhile to quantify the resources put in place and assess whether or not they have been effective in curbing bankruptcies.
For the sake of simplicity, this study has considered the three measures described above (i.e moratoria, the Central SME Guarantee Fund and the SACE Guarantee), as these represent the main forms of financing to corporates against the backdrop of the pandemic.

Starting from the moratoria, it is worth highlighting that, compared to other measures, neither the government nor banks have provided any type of new liquidity to companies. The latter instead have leveraged on postponing repayment of selected loans instalments, providing additional comfort for cash-flow generation in the short-term. Consequently, the magnitude of this provision has to be measured based on the amount of outstanding loans that received the lenders' approval for the moratoria.

The amount of loans that benefitted from this measure reached ca. €285 billion (of which ca. €182 billion to corporates)[13] as of December 2020. Requests peaked in 2020 at 2.7 million of applications or notices of moratoria received by lenders (see Figure 13). However, active corporate moratoria stand at ca. €126 billion as of December 2020.

[13] Equita estimates based on Task Force, press release, January 2021.

Figure 13



Source: Task Force, Press Releases (2020-2021)

In 2020, it is estimated that ca. 95% out of the 2.7 million requests were approved by banks or financial institutions, while only 4% were rejected[14] by year-end.

As of December 2021, the amount of corporate loans with an active moratoria stood at ca. €36 billion,[15] as most loans expired over time. Therefore, figures show that ca. 20% of the total approved amount to corporates as of December 2020 is still active to date. However, it still represents a significant number considering that all the active moratoria expired in 2021 (no extension provision foreseen in the 2022 Budget Law).

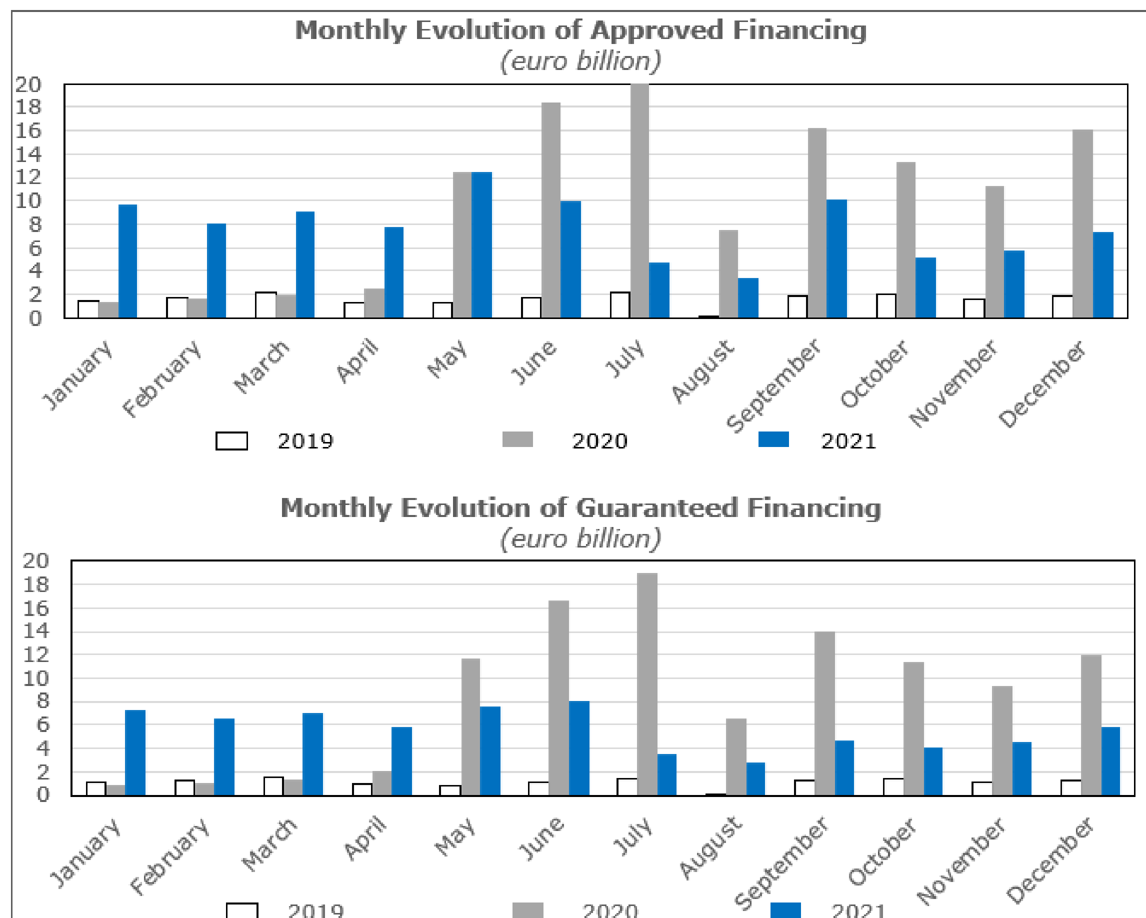
With respect to the Central SME Guarantee Fund, the extraordinary resources granted to enterprises who requested a Covid-related guarantee amounted to over €125 billion16 as of December 2020. The total number of approved requests reached ca. €1.6 million and were almost entirely Covid-related (with less than 1% being ordinary requests).

As of December 2021, the amount of guaranteed financing rose by over €65 billion, exceeding €190[17] billion, with almost 2 million Covid-related approved requests. Furthermore, over €27 billion was deployed based on Article 56 of the *Cura Italia* Decree related to moratoria (almost 700 thousand requests).

As shown in Figure 14, in 2020, the months of May, June and July were the most intense both in terms of requests and value of guaranteed financing (excluding September, which registered an exceptional upsurge in terms of value as it was the latest deadline to submit the request).

[14] The remaining 1% was under review by lenders.
[15] Equita estimates based on Task Force, press release, January 2022.
[16] Central SME Guarantee Fund, Report as of December 2020.
[17] Equita estimates based on Task Force, press release, January 2022.

Figure 14



Source: MedioCredito Centrale (2020-2021-2022)

In 2020, the average financing ticket guaranteed by the Fund was €79,000[18] (€288,000 excluding financing of up to €30,000 and moratoria-related guarantees); most of the requests (ca. 86%) were made by micro- and small-sized enterprises. In 2021 instead the average ticket reached 94,000[19] euro (€196,000 excluding financing of up to €30,000 and moratoria-related guarantees).

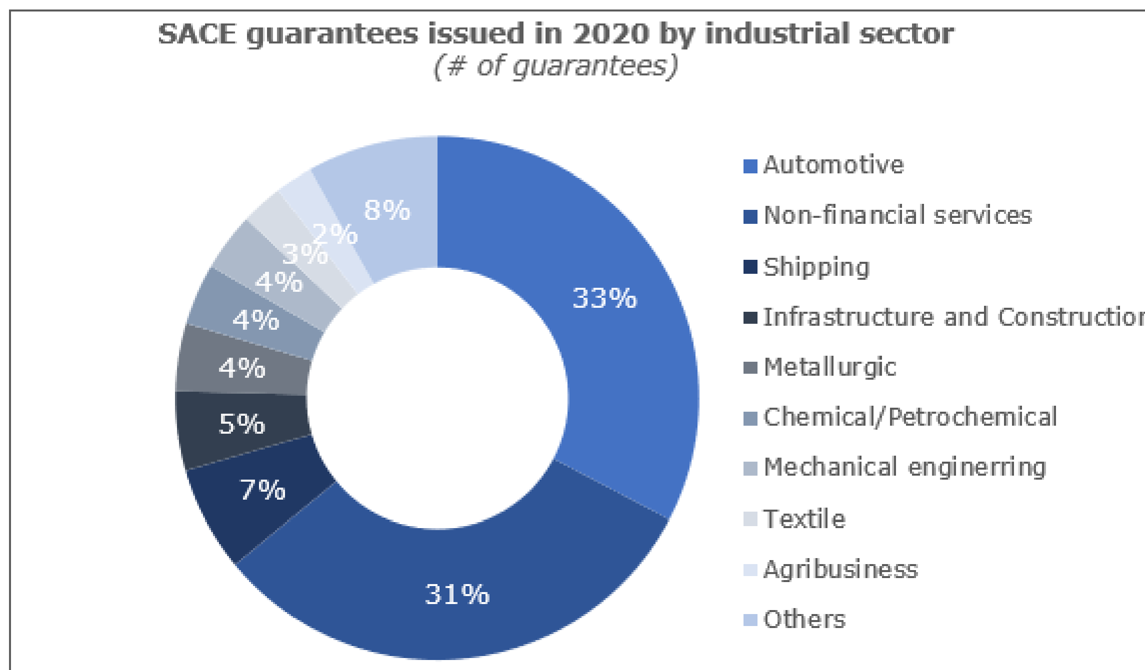
With respect to SACE, limiting the new mandate relating to *Garanzia Italia*, the Liquidity Decree set the budget at €200 billion. Yet as of December 2020, the total value of granted loans reached ca. €21 billion, corresponding to approximately 10% of the total firepower, while the total number of guarantees reached 1,410. The biggest guarantees totalled almost €9 billion (i.e., 7 guarantees accounting for 43% of the total value of granted loans as of December 2020), all in favour of large enterprises (i.e., enterprises with over 5,000 employees or a turnover of over €1.5 billion).

As of December 2021, the total value of loans reached ca. €32 billion, corresponding to approximately 16% of the total firepower (again, €200 billion), while the overall number of guarantees surpassed 4,300. The biggest guarantees came to almost €10 billion (i.e., 16 guarantees accounting for 31% of the total value of loans as of December 2021).

[18] Central SME Guarantee Fund, Report as of December 2020.
[19] Central SME Guarantee Fund, Report as of December 2021.

In 2020, the majority of guarantees were granted to most the heavily affected industries, such as Automotive and Services, as shown in Figure 15.

Figure 15



Source : SACE (2021)

During the first Covid-19 wave, the moratoria represented the most significant relief measure in terms of capital deployed as well as immediate execution. However, considering the underlying characteristics of this provision, the outstanding amount of corporate loans benefitting from moratoria decreases over time due to the progressive maturing of debt or the voluntary decision of companies to resume ordinary repayments. Thus, as of today, the amount of loans backed by the Central SME Guarantee Fund represents the biggest portion of outstanding Covid-related resources deployed in favour of enterprises (ca. 75% of total).

To summarise, the total outstanding value of resources deployed since the outbreak of the pandemic to support the liquidity of Italian enterprises through the above-mentioned relief measures stood at a value close to €260 billion as of December 2021, as shown in Table 3.Table 3: Summary of outstanding resources deployed

€M	Dec-20	Dec-21
Amount of loans with active *moratoria*	126	36
Amount of guaranteed financing (Central SME Guarantee Fund)*	125	190
Amount of guaranteed financing (SACE)	21	32
Total outstanding resources	272	258

*The amount excludes resources deployed as per provisions in Article 56 of the Decreto *Cura Italia* (Moratoria) for ca. €27 billion

Source: Equita estimates based on Task Force press releases (2021-2022)

Considering that widespread corporate defaults have not materialized yet (Orlando and Rodano, 2022), it is safe to assume that these measures have been effective to date in preventing, at least partially, a credit crunch for enterprises. This is especially true for small- and medium-sized companies, which structurally depend on bank credit.

However, policy makers as well as banks should now focus their efforts on the feared "cliff effect": short-term rescue measures such as the moratoria will no longer be effective, while no medium/long-term

provisions have been considered yet. Therefore, there is a concrete risk of a spike in the rate of defaults in 2022 and 2023, especially among SMEs. This risk is exacerbated by the recent simultaneous rise in inflation, higher energy prices, the outbreak of the Ukraine-Russia war and a less accommodating monetary policy by the ECB, all factors pointing to a future interest rate hike.

Going forward: timing is crucial

The need for a major financial recovery measure is emerging in the government agenda. The new 2022 Budget Law together with the *Milleproroghe* Decree provide a gradual phasing-out from current measures to ensure smooth recovery for enterprises hit by the pandemic. In particular, the new Budget Law calls for the extension of the public guarantee scheme together with the re-introduction of a commission in favour of MCC based on the internal rating system. (Riskier companies would pay a higher commission in order to obtain a guarantee.) Access requirements to credit would also be tightened slightly. However, there seems to be a mismatch between the resources that could be available to large enterprises compared to SMEs.
On one hand, large enterprises are backed by sufficient forms of public aid (e.g. Enterprise Safeguard Fund; GID Fund[20]; *Patrimonio Rilancio*) to finance and support the hoped-for recovery.

On the other hand, public support to SMEs seems insufficient: current measures are temporary (e.g. Central SME Guarantee Fund, *Garanzia Italia*, Moratoria) at least until a proper recovery package has been formulated.

Therefore, despite government measures, an increase in newly deteriorated inflow to banks' balance sheets is expected, mainly driven by small and medium-sized enterprises.

Despite the complexity of the current market conditions, it is estimated that the amount of new NPE inflows deriving from loans backed by the above-mentioned Covid-related measures will stand in a range of €24 to €30 billion over the period 2022-2024, with default rates around 330 – 370 bps on average[21] (see Table 4).

Table 4: Expected new NPE inflows related to Covid-19 relief measures

New Covid-related NPE (€M | %)	2022E	2023E	2024E	Total 22-24E
Default rate	4.0%-4.3%	3.3%-3.7%	2.6%-3.0%	**3.3%-3.7%**
Expected Loss	10-12	8-10	6-8	**24-30**

Source: Equita estimates based on market consensus

Despite the unprecedented impact of the pandemic on Italian enterprises, default rates are expected to be limited compared to record-high levels recorded during the sovereign debt crisis (ca. 7.5% in 2012 according to ABI-Cerved). However, an uptick in default rates is expected compared to recent years.

It must be pointed out that the basic assumption behind default estimates is that banks will not take in consideration any renegotiation: if banks are backed by a strong public guarantee, they will be physiologically inclined to disregard any renegotiation or restructuring proposal aimed at recovering NPEs with a less favourable timeframe or conditions, as opposed to collecting funds directly from SACE or MCC (Leuzzi and Rinaldi, 2021). Furthermore, with respect to MCC-backed loans, it is not structurally

[20] Fund dedicated to large enterprises in financial distress
[21] Estimates based on market consensus (i.e. Banca Ifis, ABI-Cerved Outlook)

possible to renegotiate the timeframe beyond what is already provided by the temporary framework. Thus, it is important to formulate new and dedicated solutions in order to avoid defaults.

A feasible solution would be to leverage on servicers which would proactively manage credits backed by public guarantee that are likely to show signals of worsening. Banks would sell their loans backed by state guarantees to dedicated SPVs in exchange for senior and junior notes issued by the latter,[22] which would consequently start proactive credit management, including renegotiating the repayment schedule or eventually new financing to ensure business continuity while avoiding, or at least postponing, the liquidation of the state guarantees in favour of banks. This proactive approach would indeed prevent banks from requesting guarantee payments for NPE exposure, which would then be passed to MCC and *Agenzia delle Entrate* for the recovery of the amounts in question. Given the wider range of instruments available to the servicer industry compared to the *Agenzia delle Entrate*, the proactive management of troubled cases would result in a limited loss for public finances and, ultimately, of taxpayers' money.

Furthermore, in case of persistent financial distress of the debtor, servicers nominated by the government would start a restructuring process with the goal of achieving a "best-effort" recovery, which would include the liquidation of the State guarantees upfront to avoid the temporary timeframe and eventually extend the repayment schedule, thus ensuring that the whole economic system would benefit from the future cash-flows generated by the debtor.

The above-mentioned solution would benefit both the government and enterprises: on one hand, the Italian government would maximise the chances of credit recovery throughout servicers and avoid the intervention of the *Agenzia delle Entrate;* on the other hand, it would ensure the business continuity of enterprises through a smoother recovery as companies' counterparties would be represented by servicers instead of the *Agenzia delle Entrate*.

To summarise, given the current context, timing is crucial: a gradual phase-out would ensure that enterprises with good continuity prospects would survive despite the effect of the pandemic, while at the same time limiting the survival of zombie companies (Velimukhametova, 2019) with targeted measures. In this respect, the servicing industry would play a crucial role in bringing about an overall derisking of the financial system, which would in turn benefit all the involved parties while ensuring continuity of SMEs.

Furthermore, an important role will be played by the National Recovery and Resilience Plan (NRRP), which represents an unprecedented stimulus package. Italy is the top beneficiary in absolute terms of the Next Generation EU funds. Specifically: the RRF (Recovery and Resilience Facility) alone guarantees €191.5 billion to be used in the period 2021-26 (of which €68.9 billion in non-repayable grants and €122.6 billion in loans). In addition to the RRF, the government has allocated an extra €30 billion (1.5% of GDP) through an additional budget deviation.

The investment boost from the NRRP, if resources are efficiently spent and accompanied by growth-enhancing reforms, could help recover lost ground on productivity compared to other European countries. It is clear that the development of more liquid, easy-to-access and competitive capital markets is crucial, given the fundamental role played by equity and debt fundraising in relaunching macroeconomic recovery.

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[22] Servicers would physiologically pay banks an amount higher than the guaranteed portion of the loan in order to encourage banks to sell those credits. For example, in case of a 80% state guarantee, servicers could pay an amount equal to 85% of the total credit: banks would then receive senior notes in exchange for the guaranteed portion (e.g. 80%), while the remaining percentage (e.g. 5%) would be conferred in exchange for junior or mezzanine notes.

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