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SOLVENCY SUPPORT FOR ENTERPRISES: KEY CONSIDERATIONS AND PRELIMINARY LESSONS FROM EUROPEAN PROGRAMS

Christian Ebeke, Jacques Miniane, Laura Papi, Manasa Patnam, Magnus Saxegaard, Volodymyr Tulin, and Laura Valderrama.

EXECUTIVE SUMMARY

As the pandemic has left many firms at risk of insolvency, authorities are turning to new forms of support for firms. While the policy response during the initial stage of the crisis rightly focused on easing liquidity pressures, firms remain exposed to significant solvency risks. Once moratoria and lifeline measures expire, bankruptcies could rise, especially in hard-hit sectors and small and medium enterprises (SMEs). Recognizing these risks, European governments are introducing a new generation of solvency support schemes to strengthen firms' balance sheets. These recapitalization programs are the subject of this note.

Countries are confronted with a number of challenges in the design of recapitalization programs. Key challenges relate to determining eligibility, assessing firms' viability, addressing adverse selection and moral hazard, calibrating the intervention size, and securing a timely government exit. Governments also need to balance many factors in selecting instruments including feasibility, fiscal costs, and adequate burden sharing with the private sector to prevent shouldering the losses while gains are privatized.

For EU member states, the EU temporary state aid framework provides some guidance. To some extent, it guides member states on eligibility (aiming at firms affected by the pandemic) and intervention size, incorporates governance safeguards, and encourages early exit. But several key choices—targeting, viability assessments, instrument choice, and the role of the private sector—are left to national programs.

Several national programs have promising features aimed at rehabilitating corporate balance sheets leveraging private resources. We have examined 18 such programs in Europe. Many programs are open to all firms, but a few are aimed at SMEs or at systemic firms. Eligibility conditions in most cases incorporate forward-looking viability assessments, often backed up by commercial assessments. Several programs provide incentives to mobilize private equity financing through public guarantees, tax credits, or by matching the amount of intervention to a fully paid-up capital increase. Some schemes ensure an upside to the government. The experience with the implementation of these schemes is limited so far as other

programs are still available, while these programs are new, instrument remuneration is sometimes elevated, and eligibility criteria and other conditions in some cases demanding.

Preliminary takeaways relate to targeting, instrument choice, and governance provisions. Firm size is a key determinant of program design. Given the difficulties in assessing viability and monitoring beneficiaries, direct equity support in the form of ordinary or preferred shares with strong safeguards is more appropriate for large and listed companies that are unable to raise sufficient equity in the market. Hybrid instruments and private sector mobilization are key to recapitalize SMEs. For micro enterprises, grants may be the main feasible form of solvency support, although in some cases subordinated or convertible loans may also be suitable. Backward-looking targeting is necessary. While forward-looking viability assessments are desirable, there is a clear trade-off between the accuracy of targeting and the simplicity and timeliness of the program. Simplified and standardized assessments are needed for SMEs, while even these may be impractical for micro firms. The duration of government support and private sector incentives should mitigate moral hazard and ensure sufficient “skin in the game”. Governance safeguards need to go beyond the EU’s state aid temporary framework to mitigate fraud risk. Finally, authorities should stand ready to recalibrate the programs to address implementation challenges and ensure adequate support to affected firms.

I. CONTEXT

The pandemic has left many firms with debt overhang and at risk of insolvency. Early on during the emergency phase of the crisis when the COVID shock was believed to be short-lived, the policy response rightly focused on providing liquidity and keeping credit flowing. But as the pandemic endures, increasing losses have given rise to solvency concerns, exacerbated by rising corporate indebtedness. We estimate that the share of European firms likely to be insolvent post-COVID, even after the massive policy support provided thus far, has increased by 6 percentage points to 17 percent in advanced Europe and to 23 percent in emerging Europe (IMF 2020, Ebeke and others 2021).¹ Solvency problems are more acute in contact-intensive sectors that are more exposed to the pandemic and, in SMEs,² wherein the percentage of insolvent firms could reach 40 percent and 19 percent, respectively. The equity gaps—defined as the equity needed to bring businesses’ equity to a position where they are no longer in difficulty³—of firms that were solvent pre-COVID amount to some 2–3 percent of GDP in Europe, with significant country variation from about 1 percent of GDP in Austria and Germany to close 10 percent of GDP in Ukraine. While widespread corporate stress has not yet come to the fore, this is expected to change as debt moratoria expire and the temporary insolvency protection for firms in financial difficulties are lifted.⁴

¹ The sample of these studies include 26 European countries, of which 21 are EU member states. The results show an increase in the share of insolvent firms under the October 2020 *World Economic Outlook* forecast by end 2020.

² For the purposes of this note we use the [European Union definition of SMEs](#) as firms with 10–250 employees and micro firms as those with fewer than 10 employees.

³ We use the EU definition of an “undertaking in difficulty,” which states that accumulated losses should not exceed 50 percent of firms’ subscribed share capital (all firms), and that the debt-to-equity ratio should not exceed 7.5 (large firms).

⁴ Even though a “bankruptcy gap” has emerged between predicted measures of bankruptcies and the level of realized bankruptcies (Banerjee, Noss, and Pastor 2021), this is likely due to debt moratoria, new borrowing by financially stressed firms, and the temporary suspension of the obligation to file for bankruptcy under COVID-19, which may push bankruptcies into the future. This being said, according to Eurostat, EU27 bankruptcy filings started to rise in the third quarter of 2020 and have reached 90 percent of their precrisis level in the first quarter of 2021. Moreover, bankruptcy declarations have increased in the more affected sectors, namely, accommodation and food services with filings 40 percent above their precrisis level and economywide in several jurisdictions, such as Spain.

II. WHY IS FIRMS' EQUITY CRITICAL FOR LONG-TERM ECONOMIC RECOVERY?

An under-capitalized corporate sector is likely to depress private investment and prevent the efficient allocation of resources, thus stunting growth. Over-indebtedness and under-capitalization—two aspects of the same coin—are likely to dampen private investment through higher borrowing costs and by forcing a deleveraging process during which firms cut back on investment and shed jobs (see for example, Lamont 1995; Kalemli-Özcan, Laeven, and Moreno 2018). Moreover, persistent over-indebtedness could result in a plethora of zombie firms that crowd out healthy and more productive firms, while causing an increase in nonperforming loans (NPLs) (see for example, Caballero, Hoshi, and Kashyap 2008; Gopinath and others 2017, Nurmi and others 2020). An over-indebted corporate sector is also more vulnerable to shocks. Inefficient liquidation of otherwise viable firms would exacerbate scarring.

III. LIFELINE PROGRAMS VS. FIRM RECAPITALIZATION SCHEMES

This note focuses on government-supported programs aimed at recapitalizing the corporate sector. While most corporate support schemes implemented so far provided liquidity, some also improved firms' solvency. For example, job retention programs and grants for fixed costs improve both liquidity and solvency. However, these are for the most part "lifeline" programs that address a revenue shortfall and provide temporary relief for working capital needs.⁵ In contrast, the focus of this note is on support programs where public resources and public institutions are involved in recapitalizing firms to strengthen their balance sheet. Given the protracted nature of the crisis, equity support programs including with co-investment of the private sector are increasingly being favored, rooted in fiscal considerations (as grants carry ex ante higher costs) and the need to support the recovery.

It should be noted that recapitalization programs should be considered as part of a broader package of support for firms and the economy. In particular, they should continue to coexist with lifelines until the recovery of firms. Enhancing insolvency proceedings and enacting policies that facilitate reallocation of resources complement the efficacy of these programs. Some structural measures such as consolidation, particularly among smaller firms and in countries with traditionally strong mergers and acquisitions, can also help minimize the economic cost associated with bankruptcies, while lowering the fiscal cost (see IMF 2021b).

IV. WHY SHOULD THE GOVERNMENT STEP IN? ⁶

There are several reasons why *public* recapitalization programs need to be considered:

- **Excessive uncertainty and tail risks may deter the deployment of private capital, particularly in SMEs.** Macroeconomic uncertainty, together with tail risks posed by the pandemic, mean that in practice private investors are likely to postpone equity investments in pandemic-affected firms, as the option value of waiting rises considerably. Under these circumstances, even large or listed firms could require government

⁵ While lifeline programs primarily deliver temporary liquidity relief, some of the programs, namely those involving non-repayable grants, wage subsidies and tax exemptions, also have a solvency impact. Many European countries deployed such large-scale lifeline programs, the Spanish COVID-19 Line to crisis-affected self-employed workers and non-financial firms being but one example.

⁶ Not surprisingly then, think tanks, academia, and other institutions have put forth a variety of proposals for public recapitalization programs. See Blanchard, Philippon, and Pisani-Ferry (2020), Diez and others (2021), Demmou and others (2020), Association for Financial Markets in Europe (2021), G30 (2021), European Commission (2020), Boot and others (2020a, 2020b), Megginson and Fotak (2021), and Groom (2020).

intervention to fulfill their capital needs. The fact that recapitalization needs are concentrated in SMEs, where frictions are even greater, only amplify these concerns.

- **Knock-on effects of widespread firm failures.** Cascading bankruptcies would trigger widespread job losses, depressing demand with follow-on effects including on financial stability. Bankruptcy inefficiencies would amplify the macroeconomic costs of firm failures. These inefficiencies are pervasive in insolvency proceedings involving SMEs due to greater bankruptcy frictions, while existing court and administrative capacity may not be sufficient to handle the spike in bankruptcies that Europe could experience once lifelines and moratoria expire. Moreover, while individual bankruptcies may be optimal from the point of view of creditors, they will not internalize the spillover effects on other firms and workers resulting in above-optimal firm failures.

V. WHAT ARE THE CHALLENGES WHEN GOVERNMENTS GET INVOLVED?

Countries are confronted with several choices and challenges in the design of recapitalization

programs. These relate to uncertainty regarding the severity, duration, and long-term economic implications of the pandemic, fiscal space, and the depth of capital and financial markets. Many specific design issues arise (see also Figure 1):

- **Setting goals.** Public intervention should generally be guided by the need to address the market failures and externalities highlighted in the previous section. Within the EU, it is a requirement that the public intervention contributes to the objectives of “common interest”.⁷ In practice, the objective should be to avoid excessive bankruptcies of viable enterprises while allowing for a market-based reallocation of resources.⁸ Countries may also want to avoid the exit of strategic, systemically-important firms to avoid the disruption of critical goods and services, and to support firms or sectors that have important network effects (for example, important firms in the supply chain). Countries may also have additional objectives, for example, the desire to support a green economy. A key challenge will be weighing among different objectives and deciding whether some objectives are best addressed using more traditional policy instruments including subsidies or tax benefits.
- **Targeting beneficiaries.** At a basic level, recapitalization schemes should exclude: (1) firms that were in financial difficulty precrisis (except for micro or small firms) or that even with public support would not be going concerns and (2) firms that would survive without public support or are able to raise private capital on their own, or for which other interventions (for example, liquidity support) would be sufficient to stabilize the firm. In recapitalization programs, forward-looking conditionality will be desirable given the state contingent nature of the instruments and to ensure that the rehabilitation of balance sheets lasts. Requirements under

⁷ Article 87.3 of the EC treaty identifies 5 types of aid that is in the common interest, namely: (1) aid to promote the economic development of areas where the standard of living is abnormally low or where there is serious underemployment; (2) aid to promote the execution of an important project of common European interest or to remedy a serious disturbance in the economy of a Member State; (3) aid to facilitate the development of certain economic activities or of certain economic areas, where such aid does not adversely affect trading conditions to an extent contrary to the common interest; (4) aid to promote culture and heritage conservation where such aid does not affect trading conditions and competition in the Community to an extent that is contrary to the common interest; and (5) such other categories of aid as may be specified by decision of the Council acting by a qualified majority on a proposal from the Commission. For further details see the EC report on “[Common Principles for an Economic Assessment of the Compatibility of State Aid under Article 87.3](#)”.

⁸ “Excessive bankruptcies” refer to the liquidation of viable firms leading to a significant impact on the real economy, investment, or labor market.

the EU Temporary State Aid Framework also limit aid to firms that are unable to find financing on the markets at affordable terms (Box 2).

An important choice is whether to target sectors most affected by the crisis, firm types (micro, SMEs, large), or base the intervention on firm-specific indicators. Targeting by firm size will most likely be needed, as SMEs require different instruments and pose more complex challenges than interventions for large firms (see below). The trade-off between sectors versus individual firms is that the first may appear simpler, while the second will be more accurate. At the same time, targeting firms using pandemic related losses can be an effective way of containing costs and may be easier to administer than sectoral targeting, as many sectoral definitions exist, and firms may operate in more than one sector. More generally, countries face trade-offs between simple but imperfectly targeted schemes and complex targeting mechanisms that increase delays, administration costs, and potentially the scope for lobbying and fraud.

- **Assessing viability.** A key challenge is determining viability, which is a forward-looking concept. For example, a firm in a severely affected sector that was adequately capitalized before the pandemic could have suffered large losses during COVID, eroding its capital buffers and leaving it insolvent (if it fails to meet its financial obligations in due time or if its assets are lower than its debt). At the same time, this firm could be viable if it is expected to have a good business model that would allow it to return to healthy profitability after the pandemic.⁹ The public sector may be ill-equipped to conduct viability assessments with the private sector generally having better expertise. In all instances, however, public authorities can still have a coordinating role in providing common macroeconomic scenario assumptions to serve as inputs for business forecasts (see also IMF 2021b, which proposes a range of corporate indicators that can be used for standardized viability assessment by firm size). Besides expertise, governance issues may arise when the government “picks winners” and/or engages in clientelism. Nevertheless, the private sector is also not immune from governance challenges: private agents need to have “skin in the game” to prevent the privatization of gains and socialization of losses.¹⁰
- **Containing adverse selection.** Adverse selection arises because firms hold private information about their financial situation. These distortions are particularly salient for SMEs given shortcomings of company registers and a dearth of timely financial data. The current crisis may amplify such asymmetries, as the pandemic may generate unexpected losses in firms (for example, linkages that were difficult to predict) or may generate unexpected opportunities in firms (for example, due to behavioral changes). Financially stronger firms will be less willing than weak firms to accept equity dilutions and will likely be more sensitive to the adverse signaling effects of accepting support from the government (that is, bailout stigma). Stipulations in the EU State Aid Temporary Framework requiring that the state be sufficiently remunerated could unintentionally discourage viable firms with deteriorated creditworthiness from participating. The result could be an equilibrium with recapitalization schemes that attract mainly weaker firms, including those gambling for resurrection. To mitigate adverse selection concerns, governments could delegate viability assessments to the private sector with sufficient skin in the game. Where private sector involvement is not possible (for example, for firms with no adequate credit history), the assessment could harness public and private information, such as public registers and tax authority records, for a more efficient and portfolio-based contract design.

⁹ Typically, recapitalization programs assume a 1–3-year horizon for viability assessments.

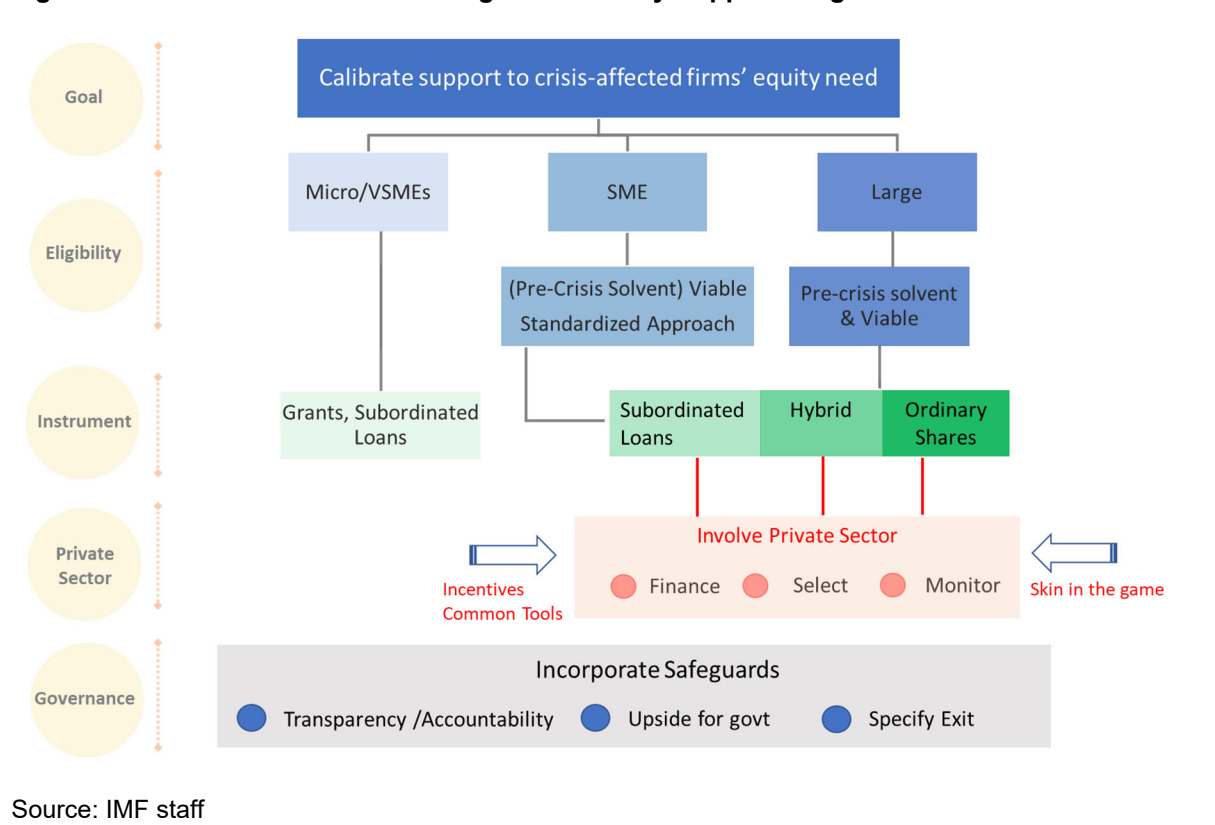
¹⁰ For instance, provisions laid out in the EU Capital Requirements Regulation require that the originator of a securitization position retains at least 5 percent of the nominal value of each tranche sold to investors. However, even this may be insufficient to ensure that viable firms are selected given differences in payoffs between holders of securitized exposures and the owners of the firm.

- **Avoiding moral hazard.** Moral hazard occurs because it is difficult or costly for the government, as a stakeholder in the firm, to observe and control the effort applied by company managers and to verify whether they are acting in the public interest. The problem is exacerbated because the recapitalization scheme may create expectations of future bailouts and hence spur excessive risk taking. Constraints on firms' actions—such as restrictions on dividend payouts, share buybacks, management compensation, and aggressive acquisitions—can mitigate moral hazard. Also, dividend clawbacks provide incentives to the shareholders to exert more oversight on the firm to ensure that the firm can survive through periods of financial distress. Importantly, the type of instrument chosen also has important consequences (Box 1). However, the subset of financing instruments (for example, ordinary shares) that would enable the government to observe managerial effort would entail prohibitively large administrative costs for recapitalization schemes that involve a high number of beneficiaries (for example, schemes targeted at SMEs and micro firms). In addition, public sector expertise in managing individual companies is typically limited and could adversely affect managerial decision-making. Hence, delegating the administration of the scheme to a private entity or to a public entity with expertise and at arm's length could help mitigate moral hazard. To ensure the private entity diligently monitors firms' performance and has incentives well aligned with those of the government (so that they themselves do not engage in excessive risk taking) it is important that they contribute financially to the recapitalization and bear some risk.
- **Addressing governance challenges.** Public recapitalization programs can create governance challenges related to conflicts of interest created by government ownership of private enterprises and the potentially conflicting priorities of the government and the private sector. Transparency—for example, disclosure of beneficiaries and recapitalization amounts with materiality thresholds—and accountability—for example, review of alignment with program objectives by an independent entity, audits—are critical for the legitimacy of the program and to prevent and uncover fraud. Further restrictions may be necessary to prevent beneficiaries from taking advantage of their strengthened balance sheet to engage in anti-competitive behavior. In the case of large firms that cannot raise sufficient equity in the market, if direct equity support is provided, it should incorporate strong safeguards to ensure that the aid does not create undue distortions and be supplemented with measures to re-organize or restructure the company where necessary (IMF 2021b).¹¹ Governments will also have to contend with political pressure to make recapitalization schemes more generous, and lobbying by individual firms or industry groups attempting to expand the perimeter of support.
- **Securing a timely government exit.** There is a risk that temporary public support programs become difficult to terminate both politically and economically. Intervention instruments must be designed so as to ensure that public recapitalization support is temporary, state-contingent, and should include an option and incentives for early redemption or accelerated exit. From this perspective, direct equity support in the form of ordinary or preferred shares (Box 1) can be more suitable for large or listed companies where an easy exit is possible.

¹¹ The EU state aid framework requires a case-by-case approval for aid to individual enterprises of more than €250 million by the European Commission, which will assess (among other things) whether existing financing in the market or horizontal measures to cover liquidity needs are insufficient to ensure the viability of the beneficiary; that the selected recapitalization instruments and the conditions attached to them are appropriate to address the beneficiary's serious difficulties; that the aid is proportionate. In addition if the beneficiary in these cases is an undertaking with significant market power member states must propose additional measures to preserve effective competition in those markets and also report on how the aid received supports their activities in line with EU objectives and national obligations linked to the green and digital transformation.

- Calibrating the size of intervention.** To limit the fiscal cost of the scheme and to address competition concerns the size of the public intervention should be capped at the level necessary to ensure the continued viability of the firm as a going concern. This principle can be operationalized in different ways under baseline or stressed conditions, taking into account the expected participation of the private sector in the recapitalization.
- Determining the timing of intervention.** Early intervention is preferable even if some public funds may accrue to firms that end up failing or risks overestimating the amount of support necessary to stabilize firms. However, given uncertainty, interventions could be phased in to allow program adjustments as needed. Flexibly and dynamically adjusting the program as crisis conditions change can enhance selectivity by targeting aid to only those that continue to be affected by the crisis and reduce risks. Nevertheless, very frequent changes could also be confusing. Finally, the relationship between recapitalization schemes on the one hand and debt restructuring procedures on the other will also have to be considered. Any effort at improving the liability side of a firm's balance sheet will reduce the size of the needed equity injection, minimizing the fiscal cost of recapitalization programs. On the other hand, debt restructurings can be lengthy processes and create losses for creditors, and it may be preferable for the government not to wait for these processes to play out before injecting equity: the judgement will have to be based on the firm's situation. During the recovery phase, as state support gradually wanes, and especially for overleveraged firms, recapitalization programs should be complemented with programs that support financial restructuring to re-establish the firms' viability. This could also provide a fair burden sharing between governments and financial creditors.

Figure 1. Considerations for the Design of Solvency Support Programs



VI. KEY DESIGN ELEMENTS OF EUROPEAN COUNTRIES' RECAPITALIZATION PROGRAMS

With the end of the pandemic in sight, governments are turning to policies that foster recovery and are appropriate post pandemic, including recapitalization programs. A new generation of support schemes to strengthen corporate balance sheets using various equity and equity-like financial instruments are being implemented. We analyze 18 of these programs in Denmark, France, Germany, Hungary, Ireland, Italy, Latvia, Poland, Spain, and the United Kingdom. The intention is not to be comprehensive but rather to highlight interesting design modalities.

For EU member states, the Temporary State Aid Framework (Box 2) provides overarching guidelines for the design of national solvency support programs. The Framework addresses several of the issues discussed in the previous section, including program goals, size of intervention, measures to prevent moral hazard and anti-competitive behavior by beneficiaries, minimum remuneration rates for governments, and government exit strategies. However, it addresses only to a limited extent issues related to viability assessments, adverse selection, and how to encourage firms to accept equity dilution and leaves open the whole gamut of instruments. Little is also said about the role that the private sector should play and how it can be incentivized to be part of the solution.

The remainder of this section discusses design modalities of select national recapitalization programs. Table 1 provides the details of the programs.

- **Setting the goals.** While not always explicitly stated, all public recapitalization programs are aimed at preventing indiscriminate and excessive bankruptcies. Public recapitalization programs within the EU are in addition required to pass a “common interest” test. For example, the German support scheme is aimed at preventing firm failures that would trigger a significant loss of employment, threaten technological sovereignty, or cause substantial disruptions, while in Spain the objectives of some of the recapitalization funds include supporting firms that are strategic and those that play a significant role in facilitating the green and digital transitions. In Hungary, an objective of the recapitalization fund scheme is to support firms whose exit would lead to an irreversible loss of human capital.
- **Targeting beneficiaries.** With a few exceptions, programs do not target sectors specifically but rather firms based on their impact from the crisis. Besides being affected by the pandemic, the EU Temporary State Aid Framework requires that recapitalization programs exclude firms that were in financial difficulty pre COVID (micro and small firms were subsequently exempted from this requirement) and firms that continued having access to market funding during the pandemic. The French programs primarily target SMEs, while the schemes in Germany, Hungary, and Poland target a combination of large firms and SMEs. Spain has two recapitalization programs¹² with the equity fund for strategic companies targeting mainly large firms while the equity fund for non-strategic companies focuses on SMEs. Similarly, Italy has two separate programs for large firms (*Patrimonio Rilancio*) and SMEs (Capital Strengthening). In Denmark and Latvia the recapitalization programs are restricted to large firms given the lack of financing instruments and liquidity in the local financial market as well as the reluctance of investors to take higher risks during the crisis.

In most cases, the recapitalization schemes that have been announced are open to all nonfinancial firms, though in a few cases firms operating in the agriculture (France, Hungary, Ireland) and real estate (France, Latvia, Poland) sectors are excluded, while the coal and steel industry is excluded in Ireland (Sustaining Enterprise, Temporary Restructuring). To further strengthen the triage process, several programs (the Polish scheme) require eligible beneficiaries to show that they have exhausted the maximum financial

¹² Regional governments in Spain (Valencia, Andalusia, Catalonia and Asturias) have also introduced business solvency support mechanisms, including through public-private partnerships.

possibilities of government lending programs, while Germany requires firms to prove that they cannot access market funding at affordable terms due to a deterioration of their financial ratios. In Hungary, potential beneficiaries are required to submit at least two rejection letters from financial institutions or investors as part of the application process.

- **Assessing viability.** Several programs require viability assessments. To assess viability, programs utilize a combination of techniques, often relying on private sector expertise, including using backward-looking firm financial indicators as well as conducting forward-looking scenario analysis to guide firm-level equity and leverage projections. About three-fourths of the programs analyzed (Table 1) explicitly include the forward-looking element of postcrisis viability as a selection criterion. The Italian and UK programs do not include this criterion in program eligibility requirements but, as they are investor-led, implicitly incorporate it. In the Hungarian Recapitalization Fund scheme, this assessment is done by the investment committee of the public administrator who evaluates the eligibility and examines the risk profile of each individual applicant. In other programs, the viability assessment is performed by the financial intermediary granting the instrument (France) or by independent advisors carrying out a due diligence analysis including a “know your client” assessment (Poland), or by the firm itself using a government-provided template as in the Irish Pandemic Stabilization and Recovery Fund (PSRF) scheme.

In some programs, the assessment of viability includes an explicit forward-looking element under a range of scenarios, including in Latvia where applicants are required to present a “viable business plan” that includes scenario-based financial projections, and in the Irish PSRF scheme wherein potential beneficiaries are asked to submit a market review that includes best- and worst-case scenarios and have to demonstrate an ability to grow in a post-COVID economy. In most programs, the authorities apply a two-folded test: first the amount to stabilize the firm is computed; second, the amount is determined so as not to improve the financial position of the firm beyond what it was pre-COVID (December 2019) and so that the recap amount does not exceed nominal caps by firm as established in the program. To stabilize the firm, most programs indicate that the net gearing ratio at the end of the forecasting horizon should not exceed 3.0 or 3.5 (this threshold may depend on the size of the firm and the sector), once the recap amount has been taken into account. In some cases, including situations in which the gearing ratio is not relevant (for example, the firm has no financial liabilities or shows negative earnings), another indicator is the equity position of the firm. Most of the programs forecast the financial position of the firm over a 1–3-year horizon.

- **Containing adverse selection.** To address adverse selection challenges, many schemes leverage private-sector involvement. In some cases, such as the United Kingdom, the government seeks to coinvest with the private sector to leverage their expertise in making investment decisions. This also includes the Italian Capital Strengthening program wherein the public support is in the form of a nonrepayable subsidy or tax credit with the amount of support linked to the amount of capital provided by the private investor, and France (Box 3) where the government gives incentives in the form of guarantees to mobilize subordinated loans. Banks sell most of the loans to outside investors but are required to keep at least 10 percent on their books to ensure they have incentives to conduct accurate viability assessments of the applicants. In the Irish Temporary Restructuring scheme, adverse selection is mitigated by a requirement that firm owners and existing investors contribute a share of the restructuring costs (40 percent for medium-sized firms and 25 percent for small firms) with the government contributing the rest.
- **Limiting moral hazard.** Many of the programs include mechanisms to monitor beneficiaries. Where the beneficiary is a large corporation, public support may be provided through direct equity injection whereby the government acquires shares that confer voting rights (Germany, Hungary, Ireland, Latvia, Poland, and Spain). In Spain’s equity fund for strategic companies, the government may, in addition, have veto rights on strategic decisions related to firm viability, workers dismissal, and adoption of less polluting production

processes. Similarly, in Latvia the recapitalization scheme grants the government the authority to restrict aspects of the beneficiaries' operations related to the issuance of loans or large-scale transactions. In programs that seek to mobilize private sector funds (France; Ireland, Temporary Restructuring and PSRF; Italy; United Kingdom), the government utilizes quasi-equity and hybrid instruments and relies on the monitoring mechanisms of banks or private investors to monitor beneficiaries. In Italy's program, private investors are also required to stay invested until 2023. Consistent with the EU Temporary Framework, most programs (Germany, Hungary, Latvia, Poland, Spain) include restrictions on dividend distribution, management compensation, and share buybacks.

- **Addressing governance challenges.** Most of the programs involving direct equity injections include restrictions on activities related to aggressive expansion or the acquisition of shares in a competitor company. In the Irish program, the government may also require that beneficiaries with large solvency gaps divest part of their assets to mitigate the competition impact of the restructuring. In Germany the beneficiary of the scheme grants "unlimited audit rights" to the Federal Court of Auditors and agrees to the individual publication of stabilization measures to increase transparency and limit fraud. In decentralized political systems, governance challenges are intensified by coordination issues between the central government and the regions, potentially complicating transparency and accountability. Transparency, and disclosure requirements, as well as objective and easily verifiable eligibility criteria, are a key tool to prevent fraud (see Norwegian scheme in section 7).
- **Securing a timely government exit.** Programs with indirect government support in the form of incentives or guarantees are typically time-bound. In the United Kingdom, co-investment program exit is also specified with the convertible loan set to mature after three years. In most programs that involve direct equity or quasi-equity injections, financing is sometimes in the form of interest-bearing hybrid capital instruments. For instance, in the Italian Capital Strengthening program, the subordinated debt instruments have a maximum maturity of six years but can be repaid in advance after three years. Typically, the remuneration schedule increases over time or is state-contingent, so as to encourage early redemption (Hungary). As an alternative to step-up tools, the government can use a drag-along mechanism (Poland) with a liquidation preference that gives a right to initiate the sale of all the shares of the firm and get a 10 percent increase from proceeds received. Finally, in most programs (Germany, Spain), the beneficiary is required to submit a restructuring plan to the European Commission if, after six years of the intervention, the recapitalization amount has not been reduced below 15 percent of the firm's equity.
- **Selecting instruments.** Recapitalization measures use two distinct sets of instruments: (1) equity instruments including ordinary shares (Poland) or preferred shares (Hungary) and (2) hybrid capital instruments ranging from hybrid preferred shares (Denmark), participation shares, silent participations (Germany), convertible loans (UK), and large subordinated loans (Italy) to guaranteed subordinated loans (France).¹³ The choice of the instrument is underpinned by fiscal considerations, risk-return trade-offs, burden-sharing arrangements, information asymmetries, administrative capacity, and the depth and development of financial and capital markets.

¹³ Hybrid instruments have characteristics of debt as well as of equity. For instance, hybrid preferred shares carry interest rather than an entitlement for profit or loss participation but can be deferred at the discretion of the firm; participation shares provide the holder with the right to a share of the undertaking and may carry voting rights whereas silent participations do not confer voting rights, carry a coupon that is dependent on the profit of the firm, and for which the inability to repay at maturity will trigger a credit event. Convertible bonds are remunerated as bonds until they are converted to equity, and subordinated loans carry a mandatory coupon and are subordinated to other debt instruments but senior to all equity instruments. The class of convertible loans include conversion into equity or grants, with the latter commonly referred to as forgivable loans.

In general, equity instruments are more suited for large firms (given their strategic importance and more reliable information), whereas hybrid instruments are more adequate for SMEs (given the sheer number of firms and the higher monitoring costs). Also, hybrid instruments are typically less costly ex ante for the government and the involvement of private sector greater. Countries with bank-centered financial systems and less deep capital markets generally favor programs with an important role for banks using subordinated loans, though ideally some of these loans would be securitized and sold.

In addition, debt-to-grant swap instruments are used contingent on achieving specific targets in Poland's financial shield for micro firms and SMEs. It provides a financial subsidy depending on turnover loss during COVID (with a step function in buckets) and the size of firm in terms of employees, where up to 75 percent (50 percent) of the loan to micro firms (SMEs) is written off if all employees are maintained. In Spain, the Restructuring Line provides aid to facilitate the restructuring of loans by extending debt maturities converting loans into participative loans or providing debt haircuts¹⁴. A grant component is also included in the Italian Capital Strengthening program.

- **Calibrating the size of intervention per firm.** The EU framework limits the amount of state aid to the minimum amount needed to ensure a firm's viability. In the German and French programs, this is operationalized through the use of financial indicators (for example, debt to earnings or debt to equity ratios). In the Irish Temporary Restructuring scheme, the amount of public support is limited to the amount necessary for restructuring to occur. In the Italian Capital Strengthening program, the contribution of the government is linked to the amount of co-financing by the private sector, while in Italy's Patrimonio Rilancio the amount is capped at 20–25 percent of outstanding shares. In Poland the amount of support is capped by size of the financial loss that can be attributed to the pandemic. In Latvia the amount of public support is subject to a nominal ceiling, while in Spain, the equity fund for strategic companies is subject to a nominal floor to the extent that a firm's solvency position does not improve beyond its pre-crisis situation.
- **Deciding the budget of the program.** The fiscal envelope has been typically determined by firms' solvency needs estimated with simulations and stress tests, combined with the availability of fiscal space. Aggregate estimates of the equity gap through simulation can be helpful as a first step to calibrate the approximate amount of state support necessary to fill this gap (see for example, Box 3 on the French scheme). The total envelope of government recapitalization programs varies across countries. In schemes which seek to mobilize private sector financing, the amount of government support ranges from about 0.3–1 percent of GDP in the form of contingent liabilities (French quasi-equity scheme guarantees) or subsidies (Italy tax credits). In programs wherein the government provides direct equity injections, the fiscal cost ranges from 1–3 percent of GDP (Germany's program being the largest). In mixed programs, where the government co-invests with the private sector or hybrid schemes, the amount ranges from 0.1 percent of GDP (initially, in the United Kingdom) to 0.6 percent of GDP (Ireland PSRF hybrid support scheme).¹⁵

Several programs have adjusted their envelope as the crisis deepened, or because of take-up rates, or in response to the EC's comments (see Box 3 on France). Similarly, the United Kingdom allocated several tranches of fiscal support under different budgets for the same scheme, as the crisis continued to weigh on

¹⁴ Specifically, the involved credit institutions commit to analyzing the total credit exposures of the debtor (i.e., loans with and without state guarantees). In the event of restructuring of state-guaranteed loans, the credit institutions undertake to also restructure the exposures without state guarantees, so that the burden of the debt restructuring is shared between the State and the banks.

¹⁵ While a wide range of instruments are allowed under the PSRF scheme, mainly debt instruments have been used as of end-March 2021.

firms' recovery prospects. Overall, for the average country under review, the budget envelope excluding private equity contributions amounts to 30 percent of the estimated equity needed by firms solvent pre-COVID-19 to avoid being “in difficulty”¹⁶ (Ebeke and others 2021), and 60 percent of the amount needed to bring equity to zero, but with a large heterogeneity across countries.

- **Determining the timing of intervention.** In most recapitalization programs the point of intervention is when existing public support programs are no longer sufficient to stabilize the beneficiary and the firm has lost access to external funding at affordable terms. However, in some programs, intervention occurs at a later stage when the beneficiary is already close to going out of business, or is already subject to insolvency proceedings or fulfils the criteria under domestic law to be placed in insolvency proceedings (Ireland, Temporary Restructuring).
- **Providing incentives for equity mobilization.** In several programs, the government encourages the private sector to make equity infusions or to take an active role in restructuring debt and repairing firm balance sheets. Incentives to raise equity can be granted to the firm owners and/or to external investors. For instance, in the Italian Capital Strengthening program, firms receive a non-repayable subsidy, which is equal to the associated tax credit for the investor, with the amount capped by a 20–30 percent share of the capital increase. In other cases, a significant level of own contribution is required in the form of new financing by its owners, private providers of financing, investors or other private parties (Ireland, Temporary Restructuring).

In the UK Future Fund program, the government provides convertible loans, with interest accruing until the loan converts and with the amount at least matched by co-investment from investors. In other programs, the restrictions attached to dividend payouts and share buybacks are relaxed if the contribution of private partners is significant (Spain equity fund for strategic companies). In addition, a feature of the current crisis is that the government has become an important creditor in many firms, given deferred tax and social security contributions and state guaranteed loans provided as part of lifeline programs. This opens another way in which the government could incentivize private sector equity provision by reducing its own claims when private agents co-invest. Finally, some recent programs, such as Spain's Restructuring Line, also provide restructuring aid to firms, in partnership with banks, extending debt maturities, loan conversions, or providing debt haircuts.

While there is limited experience with the implementation of these schemes, the budgetary allocation and uptake is expected to increase as the programs are rolled out, lifelines expire, and temporary insolvency protections are lifted. The Italian Patrimonio Rilancio program has just started its operations. The take-up rate of large recapitalization programs is about 10 percent (for example, Germany, Spain). The UK Coronavirus Fund used up the GBP 1.14 billion (0.1 percent of GDP) budget and will be replaced by the Future Fund Breakthrough program that will be launched in the summer of 2021. In some cases, the low take-up rate may reflect subdued demand related to high yields (for example, up to 9 percent for silent participations), strict eligibility criteria (for example, firms need to show that other support measures have proved insufficient), a preference for other forms of funding (bank lending is the predominant form of financing for SMEs in Europe), and restrictive conditions (beneficiaries cannot make dividend payouts or non-mandatory disbursements).

¹⁶ The definition of firm “in difficulty” follows Article 2(18) of the Commission Regulation (EU) No. 651/2014 (European Commission, 2014). After the capital intervention, a firm should not have cumulative losses exceeding half of its subscribed capital or its debt to equity ratio should be no higher than 7.5.

VII. LEARNING FROM OTHER TYPES OF PROGRAMS

We can also learn lessons for the design of recapitalization programs from other types of schemes that have already been implemented. We choose two particular experiences which appear to be particularly relevant and regarding which we have greater knowledge. The first is Iceland's experience during the global financial crisis and European sovereign debt crisis, which relates to the current situation because of the large number of SMEs in distress, enough to potentially overwhelm the court system. The second is Norway's experience in administering lifeline grants in the current crisis, which provides insights relevant for schemes targeted at micro firms wherein traditional recapitalization schemes may be impractical, as well as have some insights of broader relevance on how to address governance concerns.

Iceland's experience with large-scale debt restructurings suggests that standardized bank-led solutions can be an effective way of dealing with distress of a large number of SMEs. A major lesson from Iceland though is the key role played by the government, first and foremost, in overcoming the administrative and coordination challenges of debt restructuring for a large number of firms (see Diez and others 2021). In particular, the government set forth common guidelines for asset valuation, common criteria for operationalizing restructuring, and a framework for arbitration among creditors, all of which were key in the success of the program. The government also provided tax incentive for debt write-offs and debt-to-equity swaps to accelerate the deleveraging process. This model could be used for SME recapitalization schemes, where the government and banks closely agree on a standardized framework.

Norway's experience with the business compensation scheme from early on in the pandemic also yields important lessons (Box 4). Even in the current situation, grants may be the only way forward to bolster micro firms' solvency, in which case lessons from grant-based lifeline programs such as those in Norway have direct applicability, but Norway's experience also contains lessons for recapitalization programs more broadly. In particular, Norway's transparency requirements were a key tool to prevent fraud, hence such measures should be an integral part of the design of recapitalization programs. In addition, there is something to be said for keeping the targeting of the schemes simple: complex rules and carve-outs for different types of firms may improve targeting, but as Norway found out they come at a cost of increasing administrative costs and lobbying, and potentially fraud. Finally, and given the potentially large number of firms involved, the cost of executing and verifying even seemingly simple schemes should not be underestimated; they can overwhelm even highly sophisticated bureaucracies.

VIII. PRELIMINARY TAKEAWAYS

Several European governments have recently put forward firm recapitalization programs as part of their support to firms in the COVID crisis. The design and practical implementation of such schemes are challenging. Although the EU temporary state aid framework provides some guidelines, the thorny issues of firm selection, viability assessments, risk sharing with the private sector, and choice of instruments are mostly left to national authorities. Countries are experimenting with a variety of modalities which will offer rich lessons over their implementation. As there is limited implementation experience so far, we offer preliminary takeaways.

- **The size of companies is critical to the design of most aspects of solvency support programs.** In general, in programs that target a large number of small companies, the targeting, viability assessments, and reporting requirements will need to be simplified and standardized. The choice of the instruments will also be mostly determined by the size of the companies, as well as by firms' needs, the depth of financial and capital markets, and fiscal space.

In particular, in programs that target SMEs hybrid instruments that avoid equity dilution would appear the best way forward, while grants may be the only feasible way to provide solvency support to micro firms. Similarly, participation of financial intermediaries and private investors is likely to be more important in programs aimed at large numbers of SMEs, though there is an important role for the authorities to play in deciding the program's framework.

- **Targeting needs to have backward-looking and forward-looking components**, though the latter may be difficult and impractical for smaller firms.
 - Eligibility criteria should include **backward-looking components**: damage from the pandemic should be required for all firms and being in good financial health pre-COVID is also highly desirable. Damage from the pandemic, based on past losses, is the most important element in containing costs and may be easier to administer than sectoral targeting.¹⁷
 - **Forward-looking components** to identify firms that are expected to generate value when the economy returns to normal, provided their capital structure is restored, is also desirable. There is, however, a clear trade-off between accurate targeting on one hand and simplicity, administrative costs, timeliness, and take up rates, on the other. Standardized data templates and simplified valuation methods, including the use of sectoral/peer benchmarking, are likely to provide several advantages for determining SME eligibility given the large number of firms involved. For micro firms and very small SMEs, the forward-looking component may be impractical. A forward-looking component of targeting based on expected viability is a must for larger public interventions given the greater fiscal risks involved.
- **The expertise of private institutions (for example, banks, venture capital, equity funds) and specialized public institutions (for example, public investment banks, sovereign wealth funds) has to be tapped to conduct viability assessments.** In programs where the government has a right to a share of the undertaking, the government should lay out the basic elements of firm appraisal including detailed scenarios of business impact, financial indicators of creditworthiness, and valuation approaches. Programs aimed at private equity mobilization could be less prescriptive on the viability appraisal that should be investor-led. Public sector entities in charge of viability assessments should have independent oversight to enhance accountability.

When the private sector is involved in firm eligibility and viability assessments it needs to have skin in the game to ensure adequate due diligence on eligible companies. Even when the private sector is in charge of viability assessments, there could be a role for the authorities to play by providing macroeconomic scenarios with sectoral details, similar to what central banks do as inputs to bank stress tests. This would provide some coordination mechanism and allow for a comparison of expected profitability across firms against common macro scenarios.

- **The choice of instrument needs to strike the right balance between feasibility, monitoring requirements, and burden sharing with private investors.** The size of eligible companies will shape instrument selection. Governments or public institutions could take direct equity stakes in the form of ordinary or preferred shares in large firms and some (listed) SMEs that are unable to raise sufficient equity from the market, provided that strong safeguards are in place and the government's exit strategy is clearly specified ex-ante. Quasi-equity instruments providing capital relief (under national accounting and

¹⁷ Box 4 discusses Norway's experience with various backward-looking metrics under the business compensation scheme targeting large pandemic-induced revenue losses. A range of backward-looking targeting requirements on companies' pre-pandemic financial health are stipulated in the EU's Temporary State Aid Framework (Box 2).

insolvency regulations) are more suitable for SMEs with private financial investors likely to have to play a much larger role in recapitalization programs. For micro firms, grants or subordinated/convertible loans may be the only option, as they are often non-incorporated entities, with limited reporting disclosures, and for which intermediaries may not have an informational advantage.

Instrument selection and private sector participation will also depend on the depth of financial and capital markets, and fiscal space. The recapitalization instruments and the conditions attached to them should be appropriate to reestablish the firm's creditworthiness, which also depends on firms' needs. For instance, firms with liquidity constraints, high leverage, or uncertain cash-flows may require instruments reducing cash-flow burdens. For overleveraged firms with a challenged capital structure and high debt burden on their cash-flow, recapitalization programs should be complemented with programs that support financial restructuring to re-establish their viability.

- **Incentives for the private sector should be designed to avoid privatizing gains and socializing losses.** This relates to both the incentives of existing owners/shareholders to contribute equity and maximize the value of the firm, as well as those of financial intermediaries that administer the program, and those of ultimate investors that share the risks with the government. Hybrid instruments distributed through securitized vehicles could help diversify idiosyncratic risk and appeal to investors, especially if matched by government funding. The instruments should be carefully calibrated to ensure adequate remuneration and minimize complexity of covenants, with underwriters having sufficient skin in the game while still achieving sufficient take-up by companies. Requiring a minimum stay on investor participation in programs can also help in this direction. To encourage early redemption and security of the investment, a step-up mechanism should be included to ensure an upside return for the government. Finally, to support voluntary debt restructurings, for example, of state-guaranteed loans, fair burden sharing between governments and financial creditors should provide appropriate solutions to viable borrowers while preserving financial stability.
- **Safeguards should include robust ex ante verification mechanisms as well as ex post risk-based audits.** Governance requirements need to go beyond what the EU's state aid temporary framework currently prescribes—which is focused on rules-based requirements to limit managers' remuneration, payments of dividends, and share buybacks. Additional measures to minimize fraud should be an integral part of any program to make good use of taxpayers' money. Accountability mechanisms, such as ex ante certification of an application for support by an certified accountant and ex post audits conducted by independent entities using risk-based approaches on the use of public funds, should also be part of governance safeguards. Safeguards would need to be stronger and a necessary precondition for large/listed firms that receive direct equity support to prevent undue distortions of competition or other shareholder incentives. Finally, proper governance also calls for transparent, arm's length arrangements in the exercise of corporate rights by the government or any state-owned body injecting equity.
- **Program flexibility is critical, and a quantitative evaluation desirable as new information becomes available.** As information about take-up rates, implementation challenges, the strength of economic recovery, and the ability of the program to stabilize firms becomes available, governments should revisit the key elements of the program to enhance effectiveness. However, too-frequent recalibrations can induce confusion among potential beneficiaries and should be avoided. In this vein, the frequent recalibration of the EU's state aid temporary framework will need to continue, including with regards to state aid ceilings, types of instruments, and eligibility criteria.

Table 1: Recapitalization Programs—Targeting, Viability Assessment, and Size

	Firms Targeted ¹	Viability ²			Governance ³	Amount per firm	Budget envelope (percent of GDP)
		Pre-crisis healthy	Floor on COVID-19 losses	Post-crisis prospects			
Italy <i>Capital-strengthening</i>	SME	✓	✓		Investors must hold investment until 2023	Subsidy (20% of equity), tax credit (50% losses capped by 30% equity), sub loans (3*equity)	0.3
Italy <i>Patrimonio Rilancio</i>	Large	✓	✓	✓	Limits on profit distribution	Max 20% outstanding shares (listed) and 25% (non-listed)	2.5
Ireland <i>Sustaining Enterprise Scheme</i>	SME	✓		✓		Maximum €800k (for small firms b/w €25k-€50k)	0.1
Ireland <i>Temporary Restructuring aid</i>	SME			✓	Limits on profit distribution	Up to €10 million	0.1
Ireland <i>Pandemic Stabilization and Recovery Fund (PSRF)⁴</i>	Large	✓		✓		€10 million and above	0.6
France <i>FDES</i>	Micro/SME	✓		✓		€10k-€30k	0.1
France <i>Pret Participatif</i>	SME/Mid-caps	✓		✓		5-12% of turnover depending on firm	0.25
Hungary <i>Capital Funds</i>	All	✓		✓		Up to €800k	0.1
Hungary <i>Recapitalization Fund Scheme</i>	All	✓		✓	Activity restriction	Minimum to stabilize firm and (up to 50% of share capital)	0.1
Germany <i>Wirtschaftsstabilisierungsfonds</i>	All	✓		✓	Activity restriction, structural/behavioral commitment	Minimum to stabilize firm	2.9
Poland <i>Anti-crisis shield equity support</i>	All	✓	✓	✓	Activity restriction	Amount of Covid-19 financial loss (max €220 million)	0.3
Poland <i>Development Fund Financial Shield</i>	SME	✓	✓			b/w €16k-€72k (micro) and €420k-€800k (SME)	3
Latvia <i>Recapitalization Fund</i>	Large	✓		✓	Activity and operation restriction	Up to €10 million	0.3
Spain <i>Equity Fund for strategic companies</i>	Large and strategic	✓		✓	Activity restriction, structural/behavioral commitment	Minimum amount to ensure viability (min €25 million)	0.8
Spain <i>Restructuring line for guaranteed loans</i>	All	✓		✓		Linked to guaranteed loans provided by ICO	0.2
Spain <i>Equity Fund for non-strategic companies</i>	Mainly SMEs	✓		✓		Minimum amount to ensure viability	0.1
Denmark <i>Recapitalization Fund</i>	Large	✓	✓	✓	Activity restriction	Minimum to stabilize firm	0.4
UK <i>Coronavirus Future Fund</i>	Mid-caps					£125k-£5 million	0.1

Source: National Authorities and IMF Staff Estimates.

¹ Most programs exclude the financial sector but a few other sectoral restrictions may apply. * indicate further exclusions (based on firm characteristics or affected sectors).

² Conditions noted while assessing viability.

³ Conditions applied on beneficiaries. Limits on profit distribution may include no distribution of reserves, buy-backs or repayment of shareholders' loans. Activity restrictions could include conditions such as no aggressive expansion, limits on equity acquisition of more

⁴ The PSRF was set up as a sub-portfolio within the Ireland Strategic Investment Fund (ISIF) with an allocation of up to €2 billion to invest on a commercial basis in large firms that were viable prior to the pandemic, and that can return to viability and contribute to the Irish economy. Investments need to yield a commercial and economic impact return in line with ISIF's requirements. Given that the new PSRF sub-portfolio was created to support the Irish economy during the COVID-19 pandemic it is included in this table.

Table 1: Recapitalization Programs—Instruments and Private-Sector Involvement (concluded)

	Instrument			Private Sector		Approved
	Type ⁵	Grant element	Maturity ⁶	Involved	Incentives	(as of)
Italy <i>Capital-strengthening</i>	Subsidy, tax credit (small/medium), subordinated loan (medium)	✓	3-6 y	Yes	Tax credit	31-Jul-20
Italy <i>Patrimonio Rilancio</i>	Equity, hybrid, subordinated loan		3-6 y	Optional		17-Sep-20
Ireland <i>Sustaining Enterprise Scheme</i>	Equity, hybrid	✓	5y	No		21-Apr-20
Ireland <i>Temporary Restructuring aid</i>	Equity		Undefined	Yes	Requirement for government intervention	18-Dec-20
Ireland <i>Pandemic Stabilization and Recovery Fund</i>	Equity, hybrid, subordinated loan		>3y	Yes	Co-investment	2-May-20
France <i>FDES</i>	Subordinated loan		7y (1y grace for principal)	No		25-Apr-20
France <i>Pret Participatif</i>	Guaranteed subordinated loan/bond		8y (4y grace for principal)	Yes	Guarantee on losses	4-Mar-21
Hungary <i>Capital Funds</i>	Equity, convertible loan		8-10y	No		22-Jun-20
Hungary <i>Recapitalization Fund Scheme</i>	Preferred (ordinary), convertible loan, subordinated loan		8-10y	No		23-Nov-20
Germany <i>Wirtschaftsstabilisierungsfonds</i>	Preferred (ordinary) shares, participation shares, silent participations, convertible bonds, subordinated loans		6y-perpetual	No		8-Jul-20
Poland <i>Anti-crisis shield equity support</i>	Ordinary (preferred) shares, convertible loan/bond		3y (general) 7y (maximum)	No		24-Jun-20
Poland <i>Development Fund Financial Shield</i>	Conversion of loan into grant	✓	2y (1y grace) for repayable advance	Yes	Administrative cooperation	24-Jun-20
Latvia <i>Recapitalization Fund</i>	Equity, convertible loan/bond		6-7y	Optional		6-Jul-20
Spain <i>Equity Fund for strategic companies</i>	Ordinary shares, participation loan, convertible loan, subordinated loan		7y	Optional	Relaxes governance restrictions	31-Jul-20
Spain <i>Restructuring line for guaranteed loans</i>	Debt restructuring, Debt-to-quasi equity, haircut on guaranteed loans		Not defined	Yes	Renegotiation with banks, clients (pari passu)	12-Mar-21
Spain <i>Equity Fund for non-strategic companies</i>	Equity, quasi-equity, subordinated loan		7y	No		12-Mar-21
Denmark <i>Recapitalization Fund</i>	Preferred shares		Perpetual	Optional		20-Nov-20
UK <i>Coronavirus Future Fund</i>	Convertible loan		3y	Yes	Requirement for government intervention	18-May-20

Source: National Authorities and IMF Staff Estimates.

⁵ Hybrid instruments include a mix of repayable advances, grants, debt (e.g., subordinated loans) and equity (e.g., redeemable preference shares). In programs with several types, instruments are chosen on a case-by-case basis or based on certain firm characteristics. For hybrid instruments and convertible loans, conversion is typically to ordinary/preferred share triggered either at the Fund's discretion or after a conversion event (e.g. non-payment of coupon for 4 years). Some schemes carry a discount at conversion.

⁶ Most programs include early redemption incentives in the form of step-up mechanisms and triggers of restructuring plans. Step-up mechanism refers to a set increase of Funds' shareholdings if a certain amount of shares are not sold after a specific time period. Restructuring refers to stipulations for triggering restructuring proceedings if recapitalization has not been redeemed; however it should be noted that the EC requires this feature on most recapitalization programs under the state aid framework. Exit plan refers to other stipulations on how exit can be operationalized.

Box 1. Considerations for the Choice of Equity Instruments

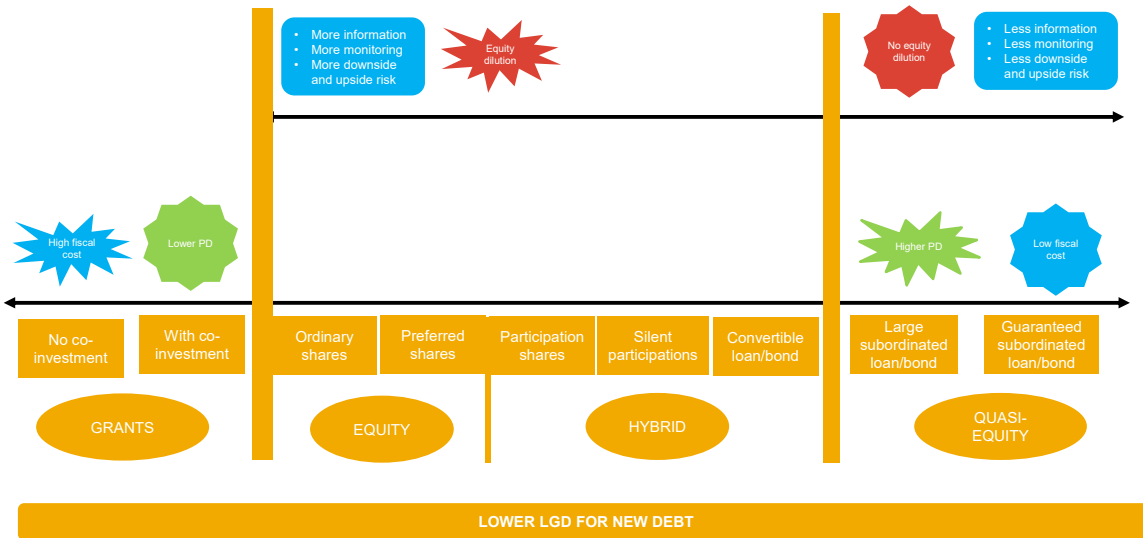
Recapitalization measures can use different types of equity instruments. The strongest form of support for firms' balance sheets is ordinary shares. They represent a claim on the company with a contingent entitlement for profit or loss participation thus shielding the firm from default risk. The weakest form of support is subordinated loans—the most junior type of debt, at times considered an equity-like instrument—which alleviate firms' liquidity pressures at the expense of increasing default risk. Credit risk materializes if the firm misses a coupon payment or is unable to repay the loan at maturity, triggering a “credit event.” This is typically sufficient cause to initiate insolvency proceedings under most national insolvency laws. Aid may also be granted in the form of non-repayable grants and subsidies, which help rebuild the firm's reserves (own funds) without an impact on share capital. Balance sheet capacity is also enhanced by instruments with higher loss absorption capacity in the waterfall payment during bankruptcy proceedings, namely capital reserves, registered capital, and subordinated debt. Instruments with higher loss absorption capacity facilitate market access at more affordable terms as the loss given default of senior claims decreases.

Some considerations on the choice of instruments include fiscal outlays, risk appetite, and the extent of informational asymmetries (Box Figure 1). Ordinary shares do not need to be repaid, and they rank last in order of preference in bankruptcy, thus entailing higher downside risk for the government. By contrast, subordinated loans carry a mandatory coupon that is not dependent on the profit of the firm and increases over time to encourage early redemption (that is, under the EC Temporary Framework), hence decreasing loss potential.¹ The risk to the government is further reduced if the public intervention takes the form of guarantees on subordinated loans where the amount of contingent liabilities is capped by the tranche that is guaranteed (for example, 30-35 percent under the French program). At the same time, while ordinary shares offer higher balance sheet protection, the government is exposed to informational asymmetries regarding the firm's viability prospects (adverse selection) and corporate governance issues (moral hazard), which warrant close monitoring, particularly amid the large uncertainty brought by the COVID-19 pandemic. This entails large administrative costs. Also, firms may be unwilling to give the government voting rights or an entitlement for profit participation, thus constraining the set of implementable instruments.

A range of intermediate risk-return targets and burden-sharing arrangements can be achieved using different instruments. Preferred shares and participation shares with voting rights are part of share capital and provide the holder with the right of a share of the undertaking. By contrast with ordinary shares, they carry a guaranteed minimum dividend granting enhanced rights on remuneration and liquidation proceedings (Hungary). Silent participations may be accounted as equity or debt depending on their maturity structure and the discretion of the firm on granting coupon payments. In both cases they carry a coupon that is dependent on the profit of the firm (Germany). Bespoke structures include hybrid preferred shares with a fixed interest rather than an entitlement for either profit or loss participation, and a perpetual maturity structure (Denmark). Convertible bonds are accounted as debt under IFRS and carry a mandatory coupon, which is not dependent on profit but can be converted into equity at the discretion of the holder. Triggers for conversion include non-repayment of the coupon for four years in a row or at maturity (Latvia). Large subordinated loans rank junior to other debt claims and improve recovery prospects for senior creditors upon liquidation thus enabling external funding. At the same time, they add up to firm leverage and create liquidity risk for the firm as a going concern. Subordinated loans in excess of two-thirds of the firm's wage bill or 8.4–12.5 percent of its turnover are considered recapitalization measures under the EC Temporary Framework. State aid to strengthen firms' equity position can also take the form of debt-to-equity swaps.

¹A subset of subordinated loans (commonly termed as profit participation loans) can offer a contractual structure wherein the interest can be indexed to the company's profit, and, in this sense can be considered more hybrid.

Box 1. Considerations for the Choice of Equity Instruments (concluded)



Source: IMF staff

Note: The diagram illustrates the trade-offs involved in the choice of the instrument in recapitalization programs. All the instruments shown in this diagram can help the firm regain market access by lowering the loss given default (LGD) on new debt instruments. The instrument choice ranges from grants (that help the firm build capital reserves) to equity instruments (ordinary and preferred shares) to hybrid instruments (which share characteristics of both equity and debt), to quasi-equity (which are subordinated to other debt instruments but senior to all equity instruments). Each instrument has a differential impact on key stakeholders of the program: the firm (in green), the government (in blue), and the existing shareholders (in red). The strongest form of support is provided by grants and equity as they lower the probability of default (PD) of the firm, while the weakest form of support is provided by quasi-instruments, where missing a payment can constitute a credit event and lead the firm to insolvency. The stronger instruments carry however higher fiscal costs while subordinated debt and guarantees imply lower fiscal outlays. Equity instruments are state-contingent instruments and, therefore, depending on the design of the instrument, require more information on the firm, more monitoring by the government, and more downside and upside risk. They also dilute existing shareholders. Overall, the government needs to carefully balance all the trade-offs involved, including the feasibility of the instrument, as many micro-firms are non-incorporated entities that cannot issue equity, and firms' needs in terms of liquidity and solvency pressures.

Box 2. The EU Temporary State Aid Framework

In view of the persistence of the crisis, the EU has introduced a Temporary State Aid Framework that has been adjusted several times and extended till December 2021. The purpose of the temporary framework is to allow member states to provide targeted government support to firms, which is usually not allowed. The measures envisaged initially consisted mainly in liquidity support, but the framework has since undergone key changes, including increased aid ceilings, the possibility to convert certain loans into grants, and other recapitalization measures. Key conditions and parameters include:

- **The objective of the intervention.** The Temporary Framework provides for state aid against damage *directly caused* by the COVID-19 outbreak—while protecting the level playing field in the Single Market. In general, government intervention must be in the common interest—for example to avoid social hardship due to significant loss of employment, the exit of an innovative or a systemically important company, or the risk of disruption to an important service. Also, there should be no overcompensation.
- **Targeting.** The targeting has a backward-looking component. Companies that were already in difficulty on 31 December 2019 are not eligible for aid, except micro or small companies—provided that they are not in insolvency proceedings or have received rescue aid that has not been repaid—since they are less likely to distort competition. Viability is mentioned, without clear guidance on forward-looking assessments.
- **Calibrating the size of government intervention.** The size of support by firm and overall are bounded, hovering between €225,000 and €1.8 million, depending on the sector. Aid of up to €10 million per company can be provided for companies with turnover losses of at least 30 percent during the eligible period. The Framework also prescribes that the schemes need to have an estimated overall envelope.

The latest version of the temporary framework has rotated the focus toward solvency support and includes recapitalization programs. The Commission has allowed equity or hybrid capital instruments, as well as subordinated debt to companies. The Commission has also enabled the conversion of repayable instruments (for example, guarantees, loans) into grants, until December 2022. Strict criteria have been set:

- Recapitalization should be granted only if the beneficiary would otherwise go out of business or face severe difficulties. Aid should be limited to firms that cannot find market financing at affordable terms.
- Recapitalization aid must be limited to enabling the viability of the company and should not go beyond restoring the beneficiary's capital structure to before the coronavirus.
- The national programs are expected to be in line with the objectives of the green and digital transitions. Large firms must report how the aid they receive supports activities in line with these goals.
- The state needs to receive adequate remuneration for the risks it takes and gradually incentivize redemption, so that the state intervention remains temporary and the terms converge to market terms.
- A clear strategy must exist to enable exit after six to seven years. If the exit of the state becomes in doubt, a restructuring plan for the beneficiary company will have to be notified to the European Commission.
- Governance safeguards: companies are subject to bans on dividends and on share buybacks, and management remuneration will be limited, until the state has exited. Beneficiaries cannot take excessive risks, should not engage in aggressive expansions and acquisitions above a certain limit and must abide by other safeguards to maintain competition. Transparency requirements also apply.
- Private investors' participation. The Framework aims at incentivizing private investors' participation. To encourage capital injections with significant private participation in companies, the acquisition ban and the cap on the remuneration of the management are limited to three years if private investors contribute to the capital increase of the company in a significant manner.

Box 3. The Participatory (Quasi-Equity) Loan Scheme in France

The quasi-equity support initiative in France is designed to strengthen firms’ balance sheets to boost investment and support economic recovery. Credit guarantee schemes and direct aid to SMEs helped relieve liquidity pressures in the corporate sector during the early stages of the pandemic but resulted in rising solvency risk due to a rapid buildup of debt (debt-to-GDP increasing year over year by about 10 percentage points), which was already increasing pre-COVID. To address these risks, the authorities have designed a scheme to strengthen SME balance sheets through a system of public guarantees on subordinated loans. The difference between this program and the state-guaranteed loans issued earlier in the pandemic consists in the fact that these loans are subordinated and hence are more junior claims and have a longer amortization period with more generous grace period for repayment, despite being more costly.

Estimating the fiscal cost of the scheme. The fiscal cost was determined by estimating the solvency gap of French corporates and subsequently calibrating the amount of state support necessary to fill this gap. Initial estimates of the solvency gap were about €50 billion (2.3 percent of GDP), which is the amount that would ensure a return of the debt-to-equity ratio in the corporate sector to its precrisis level. However, this estimate was considered to be on the high side, as (1) not all companies with solvency gaps require public intervention to raise capital; (2) not all firms with debt-to-equity ratios above precrisis levels need to be recapitalized; and (3) support should not be extended to nonviable firms. Using the decision tree below in the 2020 Budget, the amount of financing necessary is therefore estimated to be around €20 billion (0.9 percent of GDP). With past experience suggesting that a unit of public guarantees triggers six units of private funding, €3 billion in guarantees was budgeted to mobilize €20 billion private sector funds.

	Not overindebted	Overindebted 2/
Viable	No	Yes
Nonviable 1/	No	No

1/ Nonviable firms are firms judged as those having structurally negative profitability in serious financial difficulties precrisis.

2/ Overindebted firms are firms assessed to have debts that are higher than their assets.

Targeting and assessing viability: The scheme is targeted to SMEs and mid-caps, whose individual viability will be assessed by banks on the submission of an investment plan and minimum credit ratings. Viable companies will receive participating loans from banks, which are subordinated loan instruments (maturity of eight years with a four-year grace period on principal repayments), to be used for financing investments and not to repay pre-existing debt. Eligible companies may also issue subordinated bonds. The remuneration is expected to be about 4–5.5 percent.

Private sector involvement. Because of the high-risk weights on subordinated loans, banks are generally reluctant to keep such loans on their books. As a workaround, banks are able to securitize and sell up to 90 percent of the participating loan exposure to investors. To incentivize investor participation, therefore, the state will cover up to 30–35 percent of the participating loan portfolio as well as subordinated bonds acquired by the private investment vehicles. Banks still have “skin in the game” as they retain some exposure to the loans; the securitization also confers banks the advantage of making SME exposure tradable and hence allows institutional investors to carry SME risk in an aggregate portfolio.

The scheme has been approved by the European Commission (EC) which noted that it is necessary, well-targeted, and proportionate. After minor adjustments to the generosity of the scheme (related to limits on the amount each firm could borrow) and the level of state guarantees, the EC approved the scheme, noting that it addresses risks related to firms under investing, that it limits the amount of public funds, and that the support is proportionate.

Box 4. The Norwegian Business Compensation Scheme: Practical Lessons

The Norwegian Business Compensation Scheme was launched on April 17, 2020, to compensate firms with large pandemic-induced revenue losses (above 30 percent) for a portion of their fixed, unavoidable costs and hence avoid a wave of bankruptcies.¹ The original scheme covered revenue losses from March–August, 2020, but has since been extended to cover losses till October 2021.

A firm's grant under the scheme is a function of a predetermined set of fixed costs (rent, electricity, water and sewage, leasing of car and other machinery, accounting, ICT, insurance, membership fees, net interest, and animal care), the revenue decline relative to the same month in 2019, and an adjustment factor currently set at 0.85:²

$$\text{Grant} = (\text{Revenue decline in percent} - 30) \times \text{Unavoidable fixed costs} \times \text{Adjustment factor}$$

As of July 2021, a total of NOK12 billion (0.4 percent of mainland GDP) has been paid out to about 35,000 separate firms, with the average firm receiving a total of about NOK230,000 (US\$27,000).

Lesson 1: The decision about who should administer the scheme is critical and must consider capacity constraints and incentives. During the design phase, consideration was given to whether private banks should play a role in the development of the scheme and which public entity should have administrative responsibility. In the end, responsibility for administering the scheme was given to the Norwegian Tax Administration while private banks were responsible for developing parts of the technical platform. Assigning administrative responsibility to the Tax Administration created its own challenges, however, notably the diversion of resources away from other critical tasks, including tax collection and fraud prevention. In September 2020, the decision was therefore taken to move administration of the scheme to the Company Registry.

Lesson 2: Measures to minimize fraud should be an integral part of the design of the program. The scheme included several elements to reduce the risk of fraud. First, the reliance on objective and easily verifiable data made the scheme harder to manipulate. Second, automated systems, for example, to identify companies reporting revenue declines or cost structures out of line with historical information, made detecting fraud less time consuming. The revised scheme launched in September requires that applications for support be certified by an accountant.

The scheme's transparency requirements also contributed to reducing the amount of fraud, in particular by increasing the reputational cost for firms to make fraudulent applications to the scheme.³ Moreover, hundreds of firms have repaid grants, often voluntarily, in some cases after news reports claiming that the support they received did not meet the spirit of the scheme.

Disclosure requirements under the scheme helped limit the applicant pool to firms in distress and thus with keeping down the fiscal cost of the scheme. In particular, a requirement that beneficiaries must be prepared to disclose the ownership structure of the firm is thought to have dissuaded a number of foreign-owned companies, including companies with ties to offshore tax havens, from applying for support.

¹ The scheme excludes sectors that are unlikely to be directly affected by the pandemic (financial services, oil and gas extraction, electricity distribution) or are beneficiaries of separate schemes (airlines, private daycares).

² Originally the formula included a deductible from fixed costs and an adjustment factor that varied depending on whether the firm was mandated closed by the government.

³ All disbursements under the scheme and information about the recipients are reported [online](#) and can be freely downloaded.

Box 4. The Norwegian Business Compensation Scheme: Practical Lessons (concluded)

Lessons 3: Carve-outs for different types of firms may improve targeting but at a cost of increasing the complexity of the scheme, the scope for fraudulent claims, and lobbying. As a result of lobbying by politicians and business groups the scheme was amended to capture firms with a seasonal business model, firms involved in caring for animals, and firms that are rapidly growing. Each of these carve-outs created their challenges, however, and made the political debate about the scheme less focused on avoiding bankruptcies and more about “keeping up with the Joneses” and ensuring a fair allocation of public resources.⁴

Lesson 4: Fully automatic schemes allow for quick disbursement but are likely to be imperfectly targeted. The application and disbursement of grants under the scheme was nearly completely automated with compliance verification taking place ex-post and in a risk-based manner, drawing on the expertise of the Tax Administration.⁵ This allowed for quick disbursements, but made the scheme prone to misunderstandings, misuse, and mistakes. For example, there have been instances of firms being compensated for a decline in revenue not *directly* related to the pandemic or who have reported costs they *perceive* to be unavoidable, but which do not fall in under the scheme. Finally, the need for objective criteria in setting the boundaries of the scheme has at times resulted in firms de facto operating in sectors excluded from the scheme receiving support.⁶ In response to these challenges, the revised scheme launched in September 2020 includes ex ante verification of applications by a certified accountant. While this may slow disbursements, speed is less critical than proper targeting at the current stage.

Lesson 5: Schemes should have an expiry date that can be extended if necessary and should be funded on a rolling basis. It is very difficult politically to terminate support schemes that have become entrenched. This increases the risk such schemes pose to the fiscal outlook. Hence, support schemes should have a relatively short horizon and a clear expiry date. Given the amount of uncertainty, it is possible that schemes may need to be extended. It is easier, however, to not extend a scheme than to terminate an open-ended one. Funding for support schemes should be commensurate with their relatively short time horizon. For this reason, relying on as-needed extraordinary appropriations rather than the regular budget cycles may be more appropriate.

Lesson 6: The design of the scheme should consider the incentives of grant recipients. The scheme has been criticized because it creates disincentives for firms to rehire workers and increase activity once the emergency phase of the pandemic is over. The incentive problems are particularly acute for firms that otherwise would have been loss making, as it may create a perverse situation in which losses increase with turnover. Threshold effects (for example, a certain revenue decline to qualify for support) can also create perverse incentives. Various solutions (for example, basing compensation on past losses or on average losses in the sector, or adding wage costs to the scheme in order to incentivize hiring) were considered and discarded either because they created new incentive problems, made the program less targeted, or increased complexity. The Norwegian experience suggests it is challenging to design a well-targeted scheme to compensate firms for losses incurred during the pandemic without creating incentive problems, and that the best option may be to ensure the program is perceived to be strictly temporary.

Lesson 7: Conglomerates should be treated as a group. The Norwegian Business Compensation Scheme stipulated that conglomerates applying for grants above a certain threshold (NOK30 million) had to apply as a group on a consolidated basis. This effectively forced diversified conglomerates to net out losses in one part of the group with profits in another, limiting the amount of support they qualified for.

⁴Several of the carveouts were eliminated once the scheme was extended in September 2020.

⁵Applications above a certain threshold were evaluated manually.

⁶Due to the unreliability of sectoral activity codes the boundaries of the scheme are enforced by other means. For example, the extraordinary tax on financial firms and the oil tax are used to exclude firms in the financial sector and the oil and gas sector. However, firms operating on the sidelines of these excluded sectors may in some instances not be liable for these taxes and hence may be de jure eligible for the scheme even though they de facto operate in the excluded sector.

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