Indebtedness from Covid-19 pandemic: A risk for financial stability?

Elena Carletti
Bocconi University and CEPR

Banco de Portugal

11 October 2021

Università Commerciale
Luigi Bocconi

Plan of the talk

1. **Lending support/borrower relief measures during Covid-19**
   – **Pros** and **cons** in brief
   – **Liquidity** support versus **equity** funding
2. **Focus on increased indebtedness – how to measure it?**
   – Impact of Covid-19 on **firm leverage** in Italy
3. **Points for discussion: What next?**
   – **A surge in NPL and/or low growth?**
   – **How to recapitalize firms?**

Plan of the talk

1. **Lending support/borrower relief measures during Covid-19**
   – **Pros** and **cons** in brief
   – **Liquidity** support versus **equity** funding
2. **Focus on increased indebtedness**
   – Impact of Covid-19 on **firm leverage** in Italy and in Europe
3. **Points for discussion: What next?**
   – **A surge in NPL and/or low growth?**
   – **How to recapitalize firms?**

- **Focus on corporate sector throughout**
  - **Little on the banking sector**

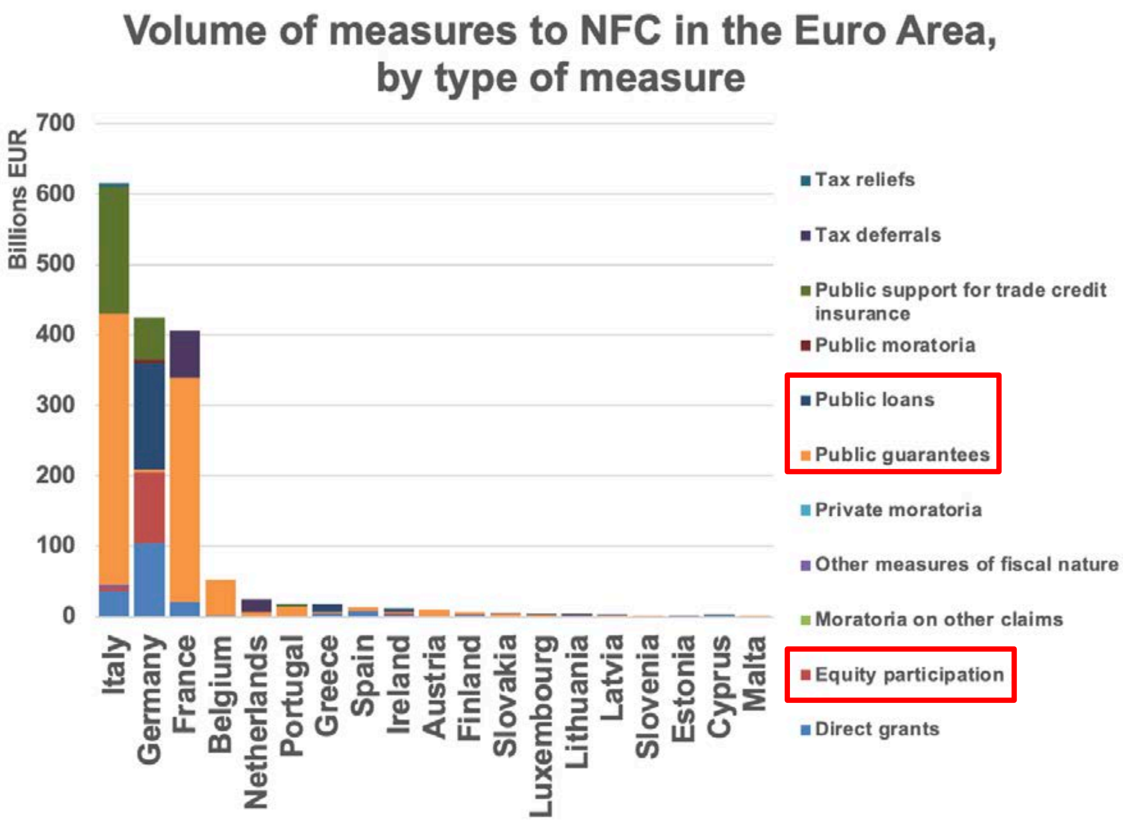
Lending support measures during Covid-19

- (Some) immediate **policy responses**
  - Loan **moratoria** and tax reliefs/deferrals
  - Direct **grants**
  - **Public loans and public guarantee schemes** (PGSs)
  - PEPP, including **Corporate Sector Purchase Program (CSPP)**

→ **Substantial variation** across countries

→ New lending almost exclusively through **debt financing**

Covid-19 lending measures in numbers



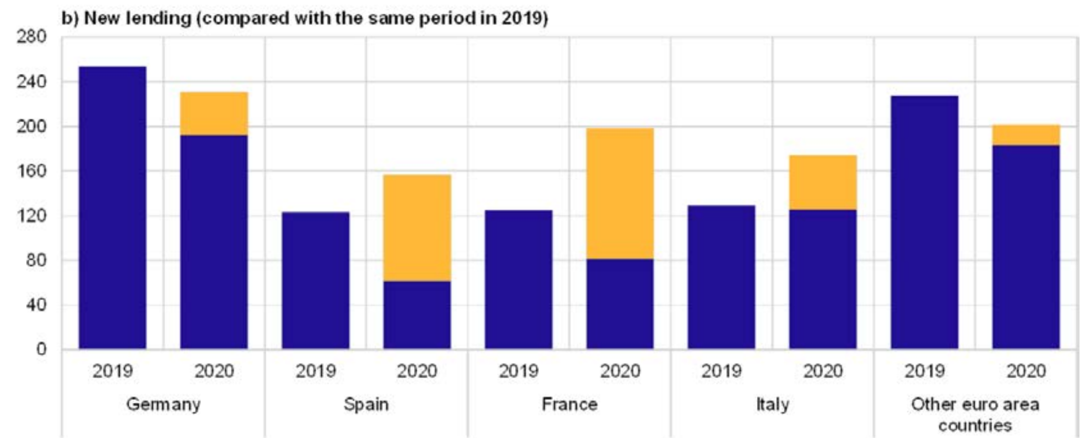
Source: Own calculations from ESRB (2021)

- Large use of **public loans** and **guarantees**, in particular in IT, FR, DE and ES
- Little **use** of **equity participation**, with the exception possibly of DE

Covid-19 measures: pros and cons

Pros:

- **Stronger** lending dynamics in countries with **higher** take-up of PGSs
- ↓ in bank **risk weighted assets** (18% versus 54%)



Cons:

- **Lower diversification** of firm financing, with **more** reliance on **bank financing**
- **Significant** increase in **firm leverage**, in particular for SMEs
  - **Riskier firms** could keep borrowing, **without** any change in **debt maturity**
  - Around **30%** of the NFC debt stock currently rated by S&P sits in ‘**speculative**’ entities, and **40%** in entities with only a ‘**BBB**’ rating (OECD, 2021)

Can increased leverage be worrisome?

- **Increased** **corporate bankruptcy risk**
  - Potential future NPL increase, although currently asset quality appears much better than expected
  - Still solvency challenges remain:
    - Forward-looking metrics indicate significant worsening of asset quality
    - Most debt will mature in 2024
- **Debt overhang** problem (Myers, 1977)
  - Reduction of investments in the medium term and thus lower growth
  - Aggregate capital expenditures decreased by 7% in 2020 vs 2019 (OECD, 2021)

How big is the firm equity erosion due to Covid-19? Carletti et al. (2020)

- **Equity erosion** = **net income losses** due to the **lockdown**
  - We have information on the impact of the lockdown on each sector
  - $\boldsymbol{\lambda j}$ = foregone fraction of value added in each (non-essential) sector *j* due to the lockdown
  - We can derive the distribution of equity shortfall across firms & sectors

- Analysis is conducted on **Italy**
  - **80,972** firms, with positive equity in 2017 and 2018, from ORBIS database of Bureau van Dijk (above 10 employees and €2m assets)
  - Simulation on 2018 data (as if Covid-19 had happened then)

Methodology

- Estimate **net income losses** due to the lockdown
  - For firms in **essential/non-affected** sectors

$$\pi_i = y_i - w_i - z_i - \tau_i,$$

Profits in 2018

operating revenues

Labor costs

Non-labor costs

taxes

  - For firms in **non-essential/affected** sectors

Non-labor costs remain the same

$$\hat{\pi}_i(X) = (y_i - w_i - \tau_i)\boxed{\left(1 - \frac{X}{12}\lambda_j\right)} - z_i,$$

Rescaling of each firm's revenue and variable costs

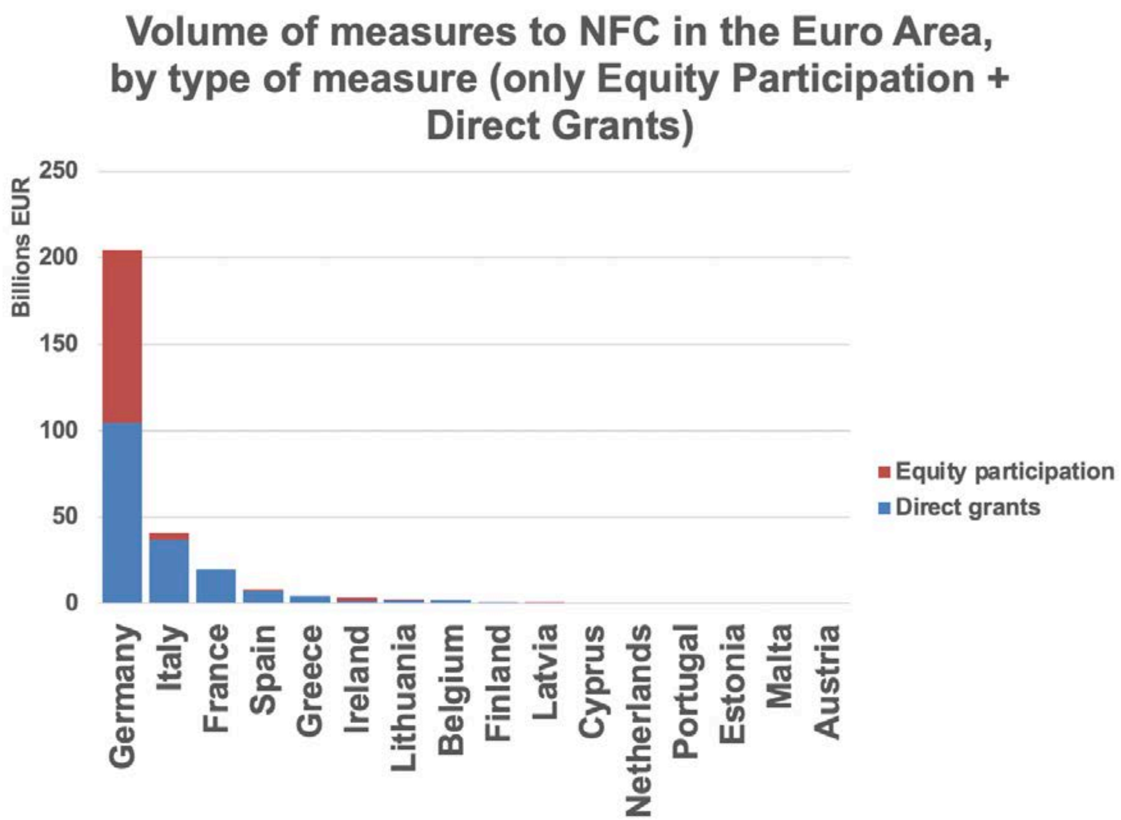
Preview of the results

- **Three-months** lockdown would lead to:
  - **Aggregate annual profit** drop of **€170** bn (10% of 2018 GDP)
  - **Aggregate equity erosion** of **€117** bn (7% of 2018)
  - **13,500** firms, employing approx. **800,000** employees, ending up with **negative net worth**, would need of **€31** bn of equity injection
  - **Default rate**: **18.1%** for **SFs**, **14.4%** for **MFs**, **6.4**% for **LFs**
- Caveat: **no consideration** in the analysis for:
  - Public policies (e.g. grants) or debt renegotiations - **upper bound?**
  - Supply-chain spillover effects between sectors, lower demand after reopening, increased costs due to social distancing **- lower bound?**
  - **Back to normal** at re-opening

Gourinchas et al. (2020): cross-country evidence

- 17 countries
- **9%** increase in SMEs default rate, absent government support
  - Accommodation & Food Services, Arts, Entertainment & Recreation, Education and Other Services among the most affected sectors
  - 3.1% of private sector employment at risk
- **Yet, limited impact on the financial industry**
  - 11 percentage point increase in NPE, 0.3% of bank assets, translating in 0.75 point decline in CET1

Equity measures in numbers



Source: Own calculations from ESRB (2021)

- Little **use** of **equity participation**, with the exception possibly of DE
- Larger use of **direct grants**, in particular for SMEs

Università Commerciale Luigi Bocconi

How to recapitalize SMEs?

- **Which firms should the government target?**
  - **Solvent pre-crisis/in distress ex post** versus most resilient **going forward**
- **How much equity should it provide to each firm and sector?**
  - **Pre-crisis** leverage ratios?
- **What specific contractual form of equity?**
  - **Non-voting preferred** (convertible) shares/contingent debt
  - SMEs tend to resist dilution and external investors with voting rights
- **What exit strategies and at what price?**
  - Repayment contingent on the **firm success** and with **buy-back incentives**
- **Need of a European solution?**
  - Very few national initiatives so far (e.g., France)
  - **Asymmetric fiscal capacity** across countries, thus uneven level playing field

Conclusions

- **Liquidity provision** to firms was essential at the onset of the crisis, but it is not sufficient for their viability and future growth

- Need to prevent **massive corporate bankruptcy/debt overhang**, in particular given the approaching end of public measures
- Need to inject **(quasi-)equity** into SMEs
- Attention to **structurally nonviable firms** – keep them afloat?
- Opportunity for **transformation** (e.g., digital, green)
- **National measures** may not be sufficient

Background material

- **The COVID-19 Shock and Equity Shortfall: Firm-level Evidence from Italy**, with Tommaso Oliviero, Marco Pagano, Loriana Pelizzon and Marti Subrahmanyam, in *Review of Corporate Finance Studies*, 2020
- Various **SAFE Policy briefs** with Arnoud Boot, Hans-Helmut Kotz, Jan Pieter Krahnen, Loriana Pelizzon and Marti Subrahmanyam
    - **Corona and Financial Stability 3.0: Try equity – risk sharing for companies, large and small**
    - **Corona and Financial Stability 4.0: Implementing a European Pandemic Equity Fund**

Additional slides

Table 1: Fraction of Value Added and Number of Firms Affected by the Lockdown

Sector j	Fraction of Sector's Value Added Affected by Lockdown (λ_j)	No. of Firms in Sector j
	Sectors	
Agriculture and Food	5.3	4,829
Business services	2	7,972
Communications	.3	239
Construction*	48.2	6,545
Education	2.2	295
Energy and Gas	0	1,796
Extraction	29.4	342
Health	0	1,158
Manufacturing**	48.7	30,457
Other services	80.6	1,758
Real Estate	5.2	811
Recreation Services	74.2	780
Restaurants and Tourism	62.1	3,086
Transportation	0	4,566
Wholesale Trade	42.1	16,338

A European Pandemic Equity Fund (EPEF)

- **Main objectives**
  - Support firms without increasing **firm leverage** and default risk so to foster growth and investment → Equity - like instruments
- **Which firms**?
  - **SMEs** – backbone of the European industry, with **limited access** to equity-like type of financing
- **Which instrument?**
  - "**Cash against** (tax) **surcharge**" – initial cash injection (i.e., transfer) against a participation in future earnings (gross or net)
  - **No dilution** of existing control rights – similar to preferred shares

Università Commerciale Luigi Bocconi

EPEF: Investment structure and contract features

- **Main elements of the contract**
  - Size of the **initial transfer payment** to the firms
  - **Rate** and **base** of the **surcharge**
  - **Minimum retention** period
  - **Exercise price**
- **Eligibility**
  - SMEs with **good prospects** to return profitability
  - Valuation at **end 2019** based on accounting numbers, tax filings, banks' or central banks' internal ratings, credit bureau, etc.
- **Size of the investment**
  - Based on **2019 earnings** or **net value added** assessments
  - Size of the **shock**

EPEF: Investment structure and contract features (cont.)

- **Size of the surcharge**
  - **Calibration** involving **annual surcharge**, **minimum investment duration**, and **buy-out** conditions (e.g., 5 %, 5 years, non-decreasing exit price)
  - Calculations based on the characteristics of a **cross section** of **SMEs** through **Europe**, employing firm- and industry-level data
- **Operational issues**
  - **Delegated management** of EPEF at national level through national or regional development banks, tax authorities or banks
  - **Covenants** to take account of **strategic behavior** (“moral hazard”) – e.g., limiting management/owner compensation

EPEF: General principles

1. **Commonality**
   – EPEF's capital is **jointly** raised by Member countries, allowing for some form of **risk sharing** across firms and countries
2. **Need-based investment**
   – Disbursement key is defined by firm **eligibility criteria**, potentially leading to a **divergence** between funding and usage key
3. **Financial Stability**
   – Need of substantial **risk absorbing capacity**, thus fund should have low leverage
4. **Independence**
   – Organization at **arms-length** from the political process, run by professionals, but **democratically legitimated** process

EPEF: General principles (cont.)

5. **Conditions for investment and credible controls**
   - Strictly set investment criteria to deal with **adverse selection** and **moral hazard** problems
6. **Informed decision making**
   - Use of **local knowledge** (e.g., housebanks, development banks, other local expertise to assess expected firm assessment)
7. **Temporary nature of the scheme**
   - Firms must be given **incentives** to **buy-out** the EPEF when funds are no longer needed
8. **Transparency**
   - Regular **reporting** and **clarification** on how/when/where EPEF's money is at stake

EPEF: Funding/sourcing structure

- **Legal status**
  - Legal entity with its **own standing**
- **Agency concepts**
  - Entrust **EIB** with setting up and management of EPEF, but with **separate balance sheet**
- **Equity + debt structure**
  - Funding through **pledge** of **future EC budget**
  - Augmented by **voluntary contributions** by Member States
  - Issuance of **own debt**
- **Capital markets**
  - Possibility to open for contributions by **private sector** (e.g., pension funds) also with no direct link with SMEs so far