

A simple method to estimate firms liquidity needs during the Covid -19 crisis with an application to Italy

Fabiano Schivardi^{1 2}

¹LUISS University and EIEF

²I thank Cerved, and in particular Guido Romano, for supplying the data, the sectoral forecasts and useful insights

OECD GFP Web Seminar, Friday, 5, June 2020

Motivation

- The COVID 19 crisis is unprecedented. It generated large sales drop in many firms
- To avoid illiquid but solvent firms to go bankrupt, almost all Governments set up **credit guarantee schemes for bank loans**, particularly for SMEs (OECD 2020)
- The goal is to save firms, *whatever it takes*, as reallocating physical and human capital following bankruptcies can turn a sharp but (hopefully) temporary crisis into a very persistent one
- But for it to be credible, we need to know **how much it takes**: are the measures sufficient? Can Governments sustain their fiscal costs?

Summary of the presentation

- I develop a method to **predict which firms will become illiquid, when and by how much**
- I apply it to the population of Italian limited liability companies-around 750.000 companies accounting for 3/4 of private sector output (the method has been applied to non incorporated businesses, numbers are small)
- I determine the **number of firms that become illiquid** month-by-month, their employees and the amount of funds required to cover the total liquidity shortfall
- I evaluate if the **“Decreto liquidità”** provides sufficient funds
- I assess the **extent of “zombie lending”**: is it a problem?

Preview of the results

- Without any intervention, around **170,000 firms**, employing almost **3 million workers**, would run out of liquidity by late summer
- The total liquidity shortfall of such firms is not huge: **less than 70 billion euros**—cost for the Government approximately 1/10
- The “**Decreto liquidità**” is theoretically more than enough
- But there is a **serious issue of speed**: many firms are already illiquid, and the loan applications might be in the hundreds of thousands: **a proposal to speed screening up**
- Zombie lending seems a **second order concern**, for both “practical” and “theoretical” reasons

The method

- Three ingredients:
 - ① the initial stock of liquidity
 - ② an estimate of the evolution of cash flow month-by-month
 - ③ the equation of the evolution of liquidity
- Given sales S and costs C , evolution of liquidity L for firm i in month m of 2020 is:

$$L_{im} = L_{im-1} + S_{im} - C_{im} \quad (1)$$

- Liquidity reported in the balance sheets (2018, most recent)
- Monthly sales $S_j=1/12$ of the total sales of 2018 if no crisis. Same for cost C_j . Then apply sectoral estimates of sales growth

Parameters

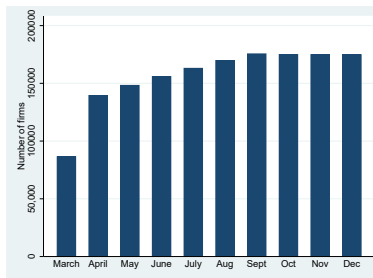
- Sales growth forecasts d_i for 500+ sectors produced by data provider Cerved
 - Based on lockdown, changes in demand, social distancing, trade disruption, sectoral specificities (food, medical supplies....)
 - Basic scenario in which the lockdown is March-May, then transition, then new normal
- Financial payments and taxes suspended by decree, investment frozen
- Only costs are labor W and intermediates M . Given elasticities to sales, $\varepsilon_{WS}, \varepsilon_{MS}$ the evolution of liquidity is:

$$L_{im} = L_{im-1} + (1 - d_{im})S_i - (1 - \varepsilon_{WS}d_{im}) * W_i - (1 - \varepsilon_{MS}d_{im}) * M_i \quad (2)$$

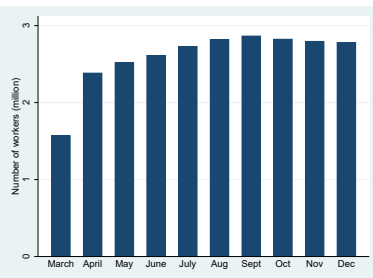
- Time series regressions: $\varepsilon_{MS} = 0.9$ and $\varepsilon_{WS} = 0.27$.
- To allow for short run lower elasticity, assume $\varepsilon_{MS} = 0.5$
- Labor: job retention scheme (*Cassa integrazione guadagni*) $\Rightarrow \varepsilon_{WS} = 0.75$

Number of firms and workers in liquidity crisis

When $L_{im} < 0$ the firm is illiquid



(a) Number of illiquid firms

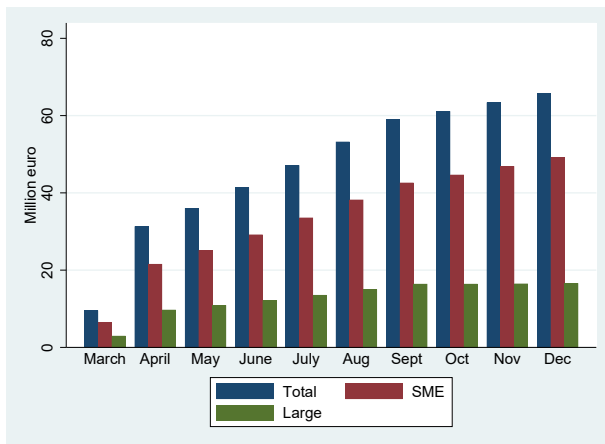


(b) Number of workers in illiquid firms

At peak, 1.8 million workers in illiquid firms, around 12% of total employment

Liquidity shortfalls: total and by firm size

Shortfall is $\sum_{L_{mt} < 0} |L_{mt}|$



SME are firms with less than 500 employees

SMEs account for almost 3/4 of total shortfalls

Firms characteristics, pre-post crisis

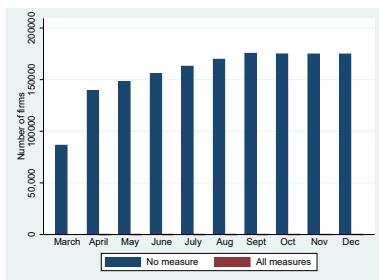
- Illiquid firms similar to the non illiquid ones in terms of size, even slightly larger (17 vs. 14 employees on average, 4 vs. 3 median)
- Financial structure of firms strong: Italian companies strongly deleveraged since the beginning of the financial crisis
- Leverage (D/E) pre crisis 0.79, post crisis 0.95 for all firms, 0.75 and 1.5 for illiquid firms—it might require some equity intervention but it is not dramatic
- Illiquid firms have trade receivables for 178 billion

Is the “Decreto liquidità” enough?

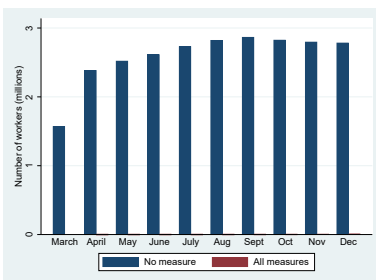
- The Liquidity decree supplies public guarantee for banks lending to firms, with some conditions:
 - ① **Measure 1:** Full guarantee up to a minimum between 25.000 and 25% of sales 2019
 - ② **Measure 2:** For firms with less than 3,2 million turnover, 25% of sales 2019, with 90% government guarantee and 10% Confidi (association for mutual guarantees)
 - ③ **Measure 3:** Up to 5 million, government guarantee 90%
 - ④ **Measure 4:** Up to the maximum between 25% of sales and twice the labor costs of 2019, guarantee from 90% to 70%
- Measures 1-3 for SMEs
- Claimed coverage of 400 million

Illiquid firms and workers without and with the Decree

Coverage is essentially complete: Less than 200 illiquid firms and 10.000 workers given liquidity provision of the decree



(a) Number of illiquid firms without and with the Decree

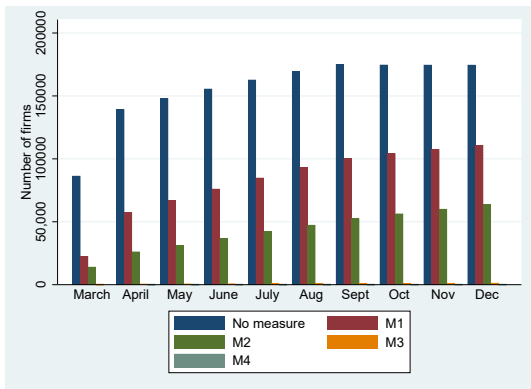


(b) Number of workers in illiquid firms without and with the Decree

Speed is everything

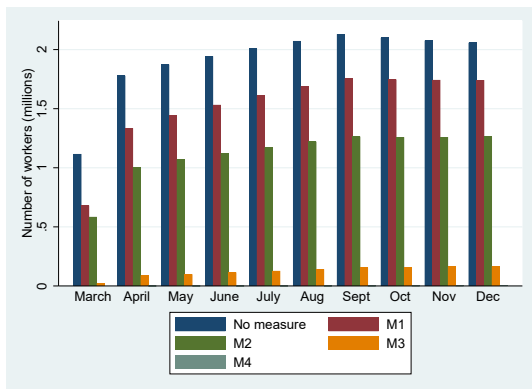
- But this is the theoretical coverage: the devil is in the details of the implementation
- We have seen that many firms become illiquid very quickly, so it is essential to act immediately
- The basic scheme (up to 25.000 or 25% of sales) is fully guaranteed and should be effective immediately
- The other schemes have an increasing degree of complexity, and therefore of expected time required to enact them
- I have therefore calculated the share of firms covered by successive schemes, focusing on SME as the large are covered by scheme 4 only

Firms with liquidity shortfalls according to the liquidity measure – SMEs



SME are firms with less than 500 employees

Workers in firms with liquidity shortfalls according to the liquidity measure – SMEs



1,2 million workers not covered by automatic measures – only Measure 3 (up to 5 million, government guarantee 90%) would bring the number close to zero

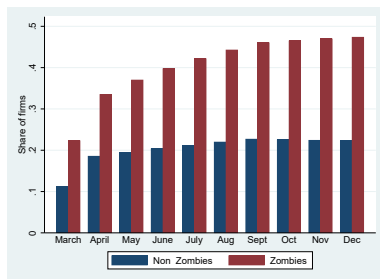
A proposal to speed up the process: A two-step procedures

- In a first stage, use the Z-score, a readily available indicator of default probability. If the firm has a good score, grant the loan quickly
- For firms with bad score, banks should do what banks are good at: screen the firm carefully. There can be firms with a bad score that are still viable: only the soft information that banks possess can tell them apart
- Problem: would it lead to “zombie” lending?

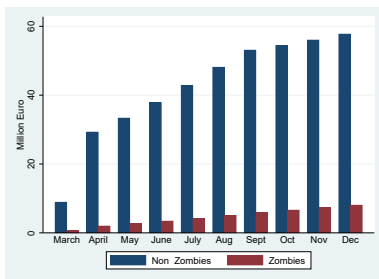
Will the funds flow to zombie firms?

- Literature on zombie lending: it slows down the recovery
- Zombie lending spurred by Government guarantee – it reduces banks incentives to screen
- Define zombie as firms with Z-score=8,9,10 (risky) before the crisis
- Approximately 100,000, or 15% of firms. Smaller (mean employment 9 vs. 15), less liquid (mean liquidity 104k vs. 458k)

Zombies and non zombies during the Covid Crisis



(a) Share of illiquid firms



(b) Liquidity needs of illiquid firms

- Despite half of them becoming illiquid, given that they are on average smaller their liquidity needs are a small fraction of the total
- The effects of firms arguably orthogonal to financial strenght

Does it really matter, anyway?

- In Schivardi, Sette and Tabellini (2020) we show that the framework typically used in the literature to measure the negative spillovers of zombies on healthy firms faces a serious identification issue that is likely to lead to incorrect conclusions
- The literature might therefore be overstating the negative effects of zombies on the speed of the recovery
- The case against zombie lending seems second order at the moment

Summary and conclusions

- Very important to reduce persistent consequences of the crisis, that is, to avoid bankruptcies of solvent firms due to liquidity shortfalls
- The amount of resources is not out of reach
- The “Decreto liquidità” in theory is sufficient
- But the amount of liquidity to inject in the system is big: we need to act quickly, using all available tools
- Zombie lending a second order concern