Public Guarantees for Small Business in Italy during Covid-19

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Introduction

- **This Paper**: We analyze the allocation of guaranteed credit during COVID-19 crisis in Italy, looking at both demand (firms) and supply (banks)
- **Guaranteed Lending**: Italy launched a program of guarantees worth up to €400 billion (57% of lending to non-financial firms in 2019Q4), similar in size to the US Paycheck Protection Program (PPP) $660 billion
- **Banks' IT**: in a context of severe mobility limitations and constrained labor force, digital infrastructure of banks is likely to be important for their participation in the program
- **Why Italy**: loan-level data for the universe of loans (firm and bank identifiers) and unique institutional details (free 100% guarantee on small loans)

Results: Firm Level

We find that firms receiving the funds initially (April-May) are more likely to be:

- in areas more affected by the pandemic (higher deaths or positive tests)
- in non-essential sectors that were shutdown in late March
- small firms, with less cash, higher leverage and lower z-score, i.e. riskier firms

These factors **lose relevance over time** (June-August): all types of firms receive government guaranteed funds (correlation with deaths turns negative after June!)

Results: Bank heterogeneity

Not all banks participate in the same way:

1. Large banks are **more likely** to issue guaranteed loans, disburse them faster and charge lower rates
2. The quality of IT infrastructure matters: banks with better IT charge **lower rates** and disburse loans **faster**
3. The bank branch network still matters: banks **lend more in their core markets** and where they have a **larger market share** of local branches

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Why? Potential explanations:

1. Large banks have **lower funding cost** (e.g. easier access to ECB funding) and lower average cost due to high volumes (small profit margins on guaranteed lending)
2. Better IT improves access to credit, as loans applications were filed online on banks' websites (lockdown)
3. Lending relationships are sticky and matter for the allocation of credit

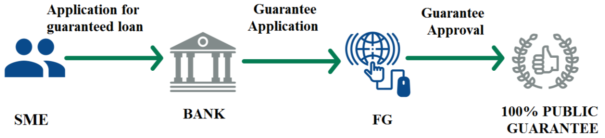
Public Credit Guarantees for SME in Italy

- **Guarantees in normal times**: partial (up to 80%) and borrowers pay fees from 25-200 bps in addition to the loan rate. Application evaluated with FG scoring system.

- **New rules introduced on April 8, 2020** (*DL Liquidità*):

  1) 90% guarantee for loans up to €5M

  2) 100% guarantee for loans up to €25,000 (increased to €30,000 in June)
     - No fees and no credit check
     - Interest rate ceiling formula ($\leq$2%)

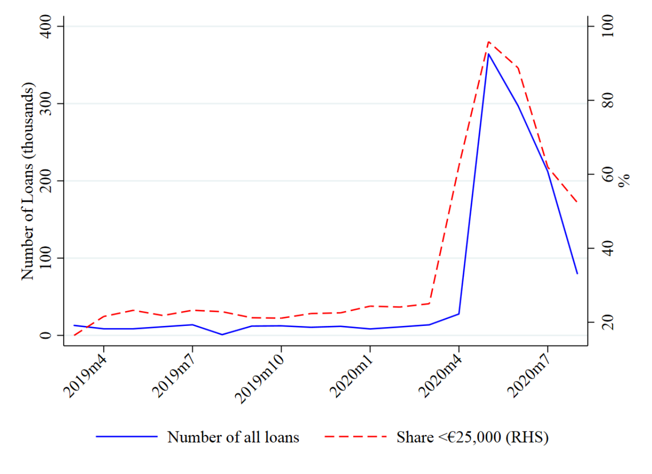


Data

1. **Loan Guarantees**: confidential loan-level (bank-firm) data from the Italian SME guarantee fund (*Fondo di Garanzia*, FG) with interest rates and disbursement times
   Advantage compared to US PPP data: unique firm tax code
2. **BvD Orbis**: firm-level balance sheet data for a large sample of private firms, covering 76% of total SME revenues in Italy, and bank balance sheet data from BvD Orbis BankFocus
3. **Bank IT data**: hand collected information on mobile banking apps quality of Italian banks (Google Playstore)
4. **Infections and deaths**: province level from emergency management agency (Protezione Civile) and the national statistical office (ISTAT)

Final sample 651K firms with full financial accounts: 176K accessed the guarantee, the others did not (control group)

Number of Loans with Public Guarantee in 2019-2020



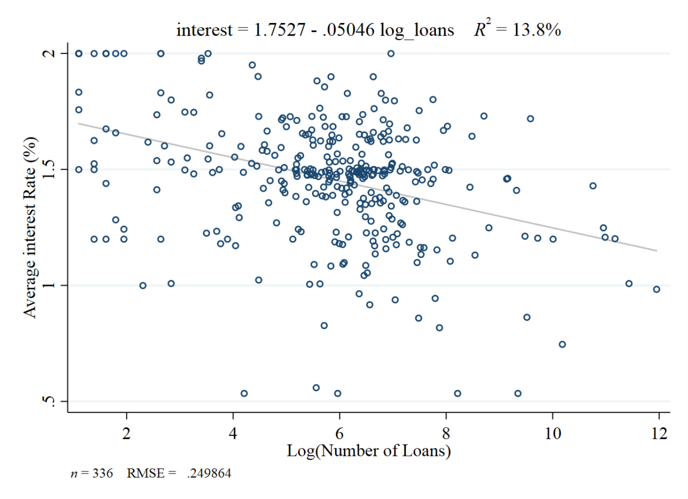
- 10,000 per month in 2019 (average size €150K)
- 980,000 in total April-August 2020, of which 86% below €25,000

Guarantee: Firm Heterogeneity

Guarantee 2020 = 1	100%		<100%	
	(1)	(2)	(3)	(4)
Previous Guaranteed Lending	0.156***	0.118***	0.514***	0.436***
	(0.005)	(0.005)	(0.007)	(0.009)
Log(Assets)	-0.071***	-0.051***	0.079***	0.066***
	(0.003)	(0.003)	(0.006)	(0.004)
Log(Age)	-0.011***	-0.010***	0.001	0.001
	(0.002)	(0.002)	(0.002)	(0.001)
Cash/Assets	-0.046***	-0.053***	0.000	-0.008***
	(0.002)	(0.002)	(0.001)	(0.001)
Leverage	0.048***	0.034***	0.026***	0.017***
	(0.002)	(0.002)	(0.003)	(0.002)
EBIT/Assets	0.041***	0.033***	0.006***	0.001**
	(0.001)	(0.001)	(0.001)	(0.001)
Altman Z-Score	-0.014***	-0.006***	-0.003***	0.003***
	(0.001)	(0.001)	(0.001)	(0.001)
Fixed effects				
Province×6-digit Industry	No	Yes	No	Yes
Province Controls	Yes	No	Yes	No
Observations	586599	586599	548815	548815
R^2	0.065	0.187	0.347	0.477

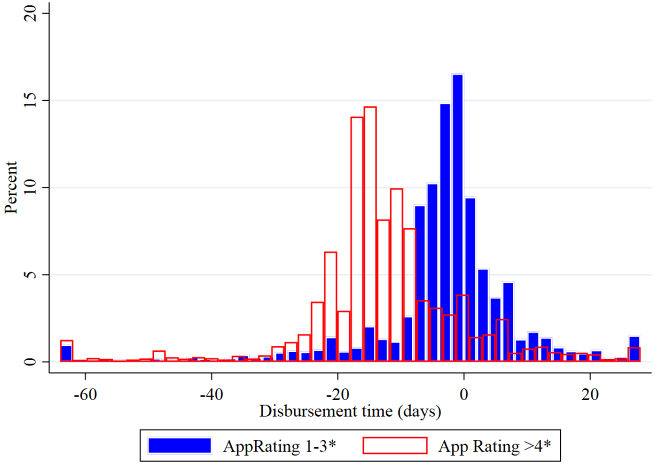
- More funds to affected areas early on (April-May), reverse after June
- Firm factors lose relevance over time: all types of firms receive guaranteed loans

Larger banks charge lower rates



ECB TLTRO: get liquidity at -1% , lend at 1% (with no credit risk!)

Banks with higher quality IT disburse loans much faster



Bank Heterogeneity - IT (100% Guarantee)

	Interest Rate (%)		Disbursement Time (Days)	
	(1)	(2)	(3)	(4)
AppRating $\geq$ 4*	-0.042	-0.094	-5.839***	-5.490***
	(0.087)	(0.067)	(1.670)	(1.435)
Log(Number Reviews)	-0.034	0.128**	-3.134***	-2.710**
	(0.059)	(0.050)	(1.138)	(1.318)
Bank - Ln(Assets)		-0.153***		-2.508***
		(0.021)		(0.682)
Bank - T1 Ratio		0.104		3.901
		(0.083)		(2.597)
Bank - NPL share		0.098		-7.387***
		(0.060)		(2.232)
Bank - ROA		0.025		0.465
		(0.024)		(1.281)
Bank - Interbank/Asset		-0.032		0.493
		(0.027)		(1.722)
Fixed effects				
Province$\times$6-digit Industry	Yes	Yes	Yes	Yes
Firm Controls	Yes	Yes	Yes	Yes
Month	Yes	Yes	Yes	Yes
Observations	108005	108005	48416	48416
R^2	0.197	0.369	0.385	0.454

Bank Heterogeneity - IT (<100% Guarantee)

	Interest Rate (%)		Disbursement Time (Days)	
	(1)	(2)	(3)	(4)
AppRating $\geq$ 4*	-0.262	-0.566***	-4.425***	-4.349***
	(0.313)	(0.163)	(0.673)	(0.787)
Log(Number Reviews)	-0.222*	0.177	-2.730***	-1.950***
	(0.124)	(0.142)	(0.454)	(0.690)
Bank - Ln(Assets)		-0.194		-0.695
		(0.162)		(0.464)
Bank - T1 Ratio		0.072		-3.559**
		(0.398)		(1.561)
Bank - NPL share		-0.038		0.532
		(0.182)		(0.682)
Bank - ROA		-0.407*		0.327
		(0.237)		(0.547)
Bank - Interbank/Asset		-0.594**		-0.025
		(0.296)		(0.892)
Fixed effects				
Province $\times$ 6-digit Industry	Yes	Yes	Yes	Yes
Firm Controls	Yes	Yes	Yes	Yes
Month	Yes	Yes	Yes	Yes
Observations	59882	59882	22420	22420
R^2	0.433	0.473	0.453	0.455

Bank Heterogeneity - Core Markets

	Log(1+GuaranteedCredit)				
	(1)	(2)	(3)	(4)	(5)
$\text{LocalMarketShare}_{b,p}$	1.045***	1.006***			0.682***
	(0.137)	(0.132)			(0.086)
$\text{CoreMarketShare}_{b,p}$			1.666***	1.623***	1.235***
			(0.102)	(0.092)	(0.079)
AppRating $\geq$ 4*	0.083		0.001		
	(0.150)		(0.158)		
Log(Number Reviews)	-0.279**		-0.203		
	(0.133)		(0.136)		
Bank - Ln(Assets)	1.158***		1.691***		
	(0.101)		(0.102)		
Bank - T1 ratio	-0.185		-0.083		
	(0.272)		(0.205)		
Bank - NPL share	0.205		0.209		
	(0.143)		(0.161)		
Bank - ROA	0.086		0.026		
	(0.115)		(0.118)		
Bank - Interbank/Asset	0.116		0.042		
	(0.172)		(0.189)		
Fixed effects					
Province	Yes	Yes	Yes	Yes	Yes
Bank	No	Yes	No	Yes	Yes
Observations	3861	3861	3861	3861	3861
R^2	0.534	0.633	0.540	0.654	0.696

Conclusions

- We study the public guarantee program introduced in Italy in response to the COVID-19 crisis
- **Demand-side**: guaranteed loans went to affected areas/sectors and fragile firms, at least initially
- **Supply-side restrictions matter**:
  1. **Size**: firms that have relationships with large banks obtain more loans, faster and at lower cost
  2. **IT quality**: banks with a more efficient pre-existing IT infrastructure disburse loans faster and charge lower rates
  3. **Branches**: banks lend more in their core markets and where they have a larger market share of local branches