

# The Visible Hand when Revenues Stop: Evidence from Loan and Stock Markets during Covid19

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## Abstract

We document that public interventions in the corporate sector during the Covid19 pandemic help firms access bank loans, cushion liquidity shortfalls, and boost their market valuations. We use firm-level data on Covid19-related news to trace firms' liquidity shocks in several European countries, which differ in public spending for fiscal stimulus and debt guarantees to corporations. As market valuations rebound in spite of the deterioration of firms' revenues, interventions drive a part of the disconnect between markets and the real economy. Remarkably, the financial sector internalizes part of the benefits of interventions targeting non-financial firms. To interpret these results, we lay out a moral hazard model of corporate borrowing and public interventions. The model suggests that interventions in the corporate sector are effective to mitigate incentive problems leading to credit market failures. Lenders benefit from loan guarantees as a compensation to finance firms with severe debt overhang problems.

**Disconnect** between financial performance and real economic performance during the pandemic

- what is the **role of government interventions**?

Do firms pass their liquidity shocks on to banks through the market for corporate loans?

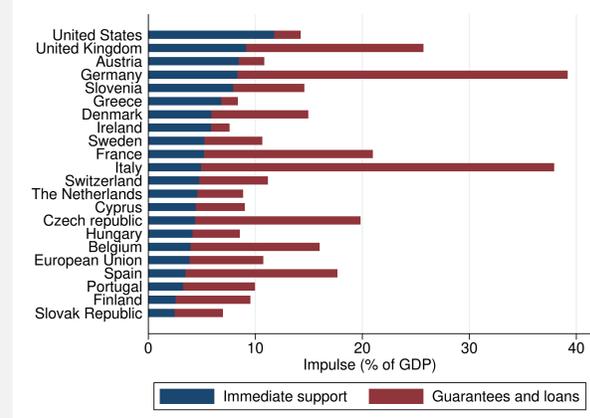
- Is there evidence of a **"firm-borrowing channel"**?

## Institutional Background and Data

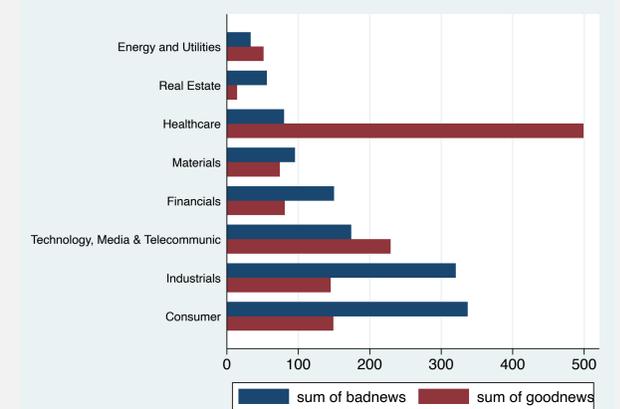
Our lab:

- **European countries differ in intervention amounts and types**
  - Immediate support: firms receive cash injections they do not need to reimburse.
  - Guarantees and loans: guarantees on loans and additional loans, which firms have to reimburse in the future.
- **Firm-level data on Covid19-related news to trace firms' liquidity shocks**
  - From S&P Market Intelligence: 2626 companies in Europe with "covid" or "coronavirus" related news between Feb 1 and Sep 22, 2020.
  - classified into "good" vs. "bad" news (including halt of operations news due to lockdowns).

Public interventions in the corporate sector (Data source: IMF)



Covid19-related news by sector (Data source: S&P)



## Government Interventions as a Mediator for Covid19 Revenues Shock

$$Return_f = \alpha_c \times \alpha_s + \beta_1 Haltnews_f + \beta_2 Haltnews_f \times Interventions_c + \Gamma^T X_f + \epsilon_f \quad (1)$$

where  $Return_f$  is the stock return of firm  $f$  from Jan to Sept 2020, and  $Haltnews_f$  indicates a firm that had to halt its operations due to Covid19 lockdowns.

	Stock Return					
	(1)	(2)	(3)	(4)	(5)	(6)
$Haltnews_f$	-0.42***	-0.42**	-0.37***	-0.43***	-0.43**	-0.37***
$Haltnews_f \times Interventions_c$	0.01*	(-2.11)	(-3.07)	(-2.99)	(-2.21)	(-3.07)
	(1.87)		(2.39)			
$Haltnews_f \times Immediate_c$		0.03			0.04	
		(1.20)			(1.61)	
$Haltnews_f \times Guarantees_c$			0.01*			0.02**
			(1.92)			(2.41)
Observations	1,048	1,048	1,048	1,048	1,048	1,048
R-squared	0.25	0.25	0.25	0.28	0.28	0.28
Firm Controls	NO	NO	NO	YES	YES	YES
Country*Sector FE	YES	YES	YES	YES	YES	YES

$$Return_b = \beta_0 + \beta_1 Badnews_b + \beta_2 Interventions_b + \beta_3 Badnews_b \times Interventions_b + \Gamma^T X_b + \epsilon_b \quad (2)$$

where  $Badnews_b = \sum_c w_{b,c} bad\ news_c / (bad\ news_c + good\ news_c)$ ,  $Interventions_b = \sum_c w_{b,c} Interventions_c$ , and  $w_{b,c}$  are based on bank cross-country corporate exposures as of Dec 2019 (EBA Transparency Exercise).

	Panel A: Bank Stock Return and Interventions			
	(1)	(2)	(3)	(4)
$Badnews_b$	-0.45*	-1.08***	-0.57	-0.89***
	(-1.73)	(-3.37)	(-1.42)	(-3.18)
$Interventions_b$	0.00	-0.04*		
	(0.51)	(2.04)		
$Badnews_b \times Interventions_b$		0.10**		
		(2.04)		
$Immediate_b$			-0.08*	
			(-1.73)	
$Badnews_b \times Immediate_b$			0.11	
			(1.02)	
$Guarantees_b$				-0.05*
				(-1.81)
$Badnews_b \times Guarantees_b$				0.14*
				(1.94)
Observations	45	45	45	45
R-squared	0.27	0.32	0.33	0.32

Economic magnitudes:

- Ratio of government interventions to GDP:
  - 8% in Greece
  - 40% in Germany
- Firms: effect of bad news on firm stock market valuations from Jan to Sept 2020
  - Stock price of Greek firm drops by 35%
  - Stock price of German firm declines by 4%
- Banks: effect of lending to firms with liquidity shortfalls on bank stock market valuations
  - Bank A operates only in Germany
  - Bank B operates only in Greece
  - Stock price of bank A increases by 2.8%, but decreases for bank B by 0.2%.

## Evidence of a Firm Borrowing Channel

Firm borrowing channel: we want to consistently estimate  $\beta$  in the following specification

$$A_{bf} = \alpha_b + \beta Badnews_f + \Gamma^T X_f + \epsilon_{bf}$$

where  $A_{bf}$  are the amount of new loans bank  $b$  grants to firm  $f$  between Dec 2019 and June 2020,  $\alpha_b$  are bank fixed effects, and  $Badnews_f$  is a proxy for the firm liquidity shock.

Instead, we have banks' exposures to corporate sectors at the bank-country level:

$$A_{bc} = \alpha_b + \beta Badnews_c + \Gamma^T X_c + \epsilon_{bc}$$

where  $A_{bc}$  is the difference in the bank  $b$  exposure to country  $c$  between Dec 2019 and June 2020 (EBA), and  $Badnews_c$  is the average bad news index of a firm in country  $c$ .

**Identification issue:** despite the inclusion of  $X_c$ ,  $Badnews_c$  might still correlate with omitted variables describing the corporate sector in country  $c$ .

Granular Instrumental Variable (Gabaix and Koijen, 2020) for  $Badnews_c$  based on firms' halt of operations news:

$$\widehat{Halt}_c = \sum_{f \in c} w_{fc} Haltnews_f - \frac{1}{F_c} \sum_{f \in c} Haltnews_f \quad (3)$$

where  $w_{fc} = total\ assets_{fc} / \sum_{f \in c} total\ assets_{fc}$  based on firms' total assets as of Dec 2019, and  $F_c$  is the total number of firms in country  $c$  in our sample.

	Panel A: First Stage			
	All bad news (1)	(2)	Foreign bad news (3)	(4)
$\widehat{Halt}_c$	0.65***	0.44***	0.72***	0.57***
	(9.79)	(3.00)	(10.88)	(3.68)
Observations	731	724	611	604
R-squared	0.21	0.46	0.24	0.52
Country Controls	NO	YES	NO	YES
Bank FE	YES	YES	YES	YES

The second stage regression uses the instrumented variable  $Badnews'_c$ :

$$A_{bc} = \alpha_b + \beta Badnews'_c + \Gamma^T X_c + \zeta_{bc} \quad (4)$$

	Panel B: Second Stage					
	All credit (1)	(2)	(3)	(4)	Foreign credit (5)	(6)
$Badnews'_c$	14.46	15.22	371.01**	14.38	12.46	99.20
	(0.97)	(0.33)	(2.15)	(1.21)	(0.58)	(1.50)
$Immediate_c$	-87.57*	43.42	46.75	-17.42	19.89	-6.02
	(-1.84)	(0.94)	(0.89)	(-0.47)	(0.71)	(-0.22)
$Guarantees_c$	12.05	0.16	19.29	3.63	3.13	8.60
	(1.33)	(0.02)	(1.34)	(0.89)	(0.64)	(1.26)
$Badnews'_c \times Immediate_c$			-82.02**			-24.99
			(-2.07)			(-1.63)
$Badnews'_c \times Guarantees_c$			7.99*			3.90**
			(1.82)			(2.09)
Observations	546	539	539	433	426	426
R-squared	0.21	0.24	0.25	0.36	0.40	0.41
Country Controls	NO	YES	YES	NO	YES	YES
Bank FE	YES	YES	YES	YES	YES	YES

## Summary

After the outbreak of the Covid19 pandemic, stock markets have recovered almost completely, despite a continued deterioration of real economic indicators.

1. Public interventions (guarantees) boost market valuations of firms affected by liquidity shocks

- heterogenous impact of the Covid19 shock on stock prices depending on the scope of country-level interventions.

2. Financial firms benefit from public interventions (guarantees) targeting non-financial firms

- Supported by the firm borrowing channel: firm demand for bank credit reduces with immediate support, and increases with guarantees and loan support
- Corporate debt guarantees compensate lenders to provide liquidity to firms with severe debt overhang problems.