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

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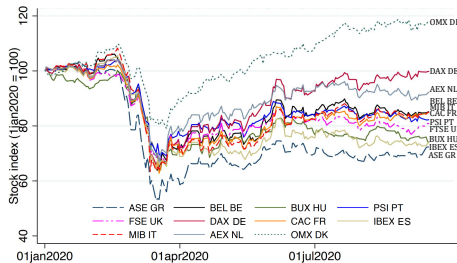
Roberto Steri

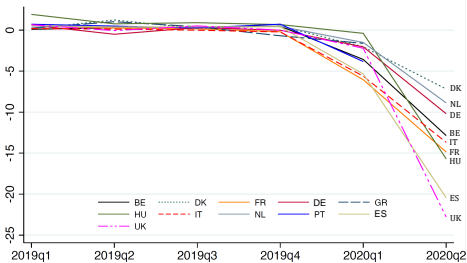University of Luxembourg

Stock prices recover after March 2020... while real economic indicators continue to plunge

Stock indices

vs. Quarterly GDP growth

Sources: Datastream and ECB Statistical Data Warehouse

This Paper: Public Interventions and the Disconnect between Markets and the Real Economy

- **Disconnect between financial performance and real economic performance**
  - what is **the role of government interventions**?

- Are public interventions effective to cope with firms' liquidity shortfalls?
  - To the extent that market valuations offer a forward-looking outlook about firms' prospects, do they suggest that firms benefit from interventions?

- Do firms pass their liquidity shocks on to banks through the market for corporate loans?
  - Is there evidence of a **firm-borrowing channel**?

This Paper: Methodology

- Our lab:
  - European countries differ in intervention amounts and types
  - Firm-level data on Covid19-related news to trace firms' liquidity shocks

- We study the effect of Covid19 shock and public interventions on firm and bank market valuations

- Firm borrowing channel: effect of public interventions on firm demand for bank credit
  - Bank fixed effects (Khwaja and Mian, 2008): one bank lends to the corporate sectors of several countries that differ in public intervention intensities
  - Granular Instrumental Variable (GIV) approach (Gabaix and Koijen, 2020)

- Interpretation of results: moral hazard model of corporate borrowing and public interventions

Outline

Outline

Direct support and guarantees vary across countries

Public interventions in the corporate sector

- 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.

Impulse (% of GDP)

Legend: Immediate support — Guarantees and loans
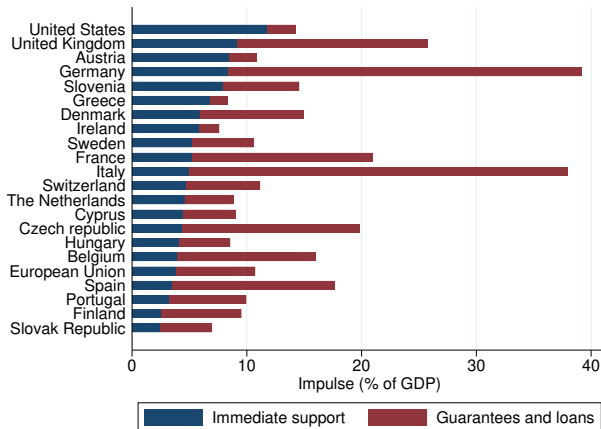
Examples of interventions

- Germany
  - €100 billion to recapitalize and buy stakes in affected companies
  - €246 billion tax deferrals for businesses
  - €400 billion for guarantees and liquidity support

- France
  - €31 billion for partial unemployment scheme
  - €180 billion, debt repayment moratorium
  - Up to €315 billion of public guarantees for loans made up until 21 December 2020

S&P Market Intelligence: 2626 companies in Europe with "covid" or "coronavirus" related news between Feb 1 and Sep 22, 2020
Good vs. bad news
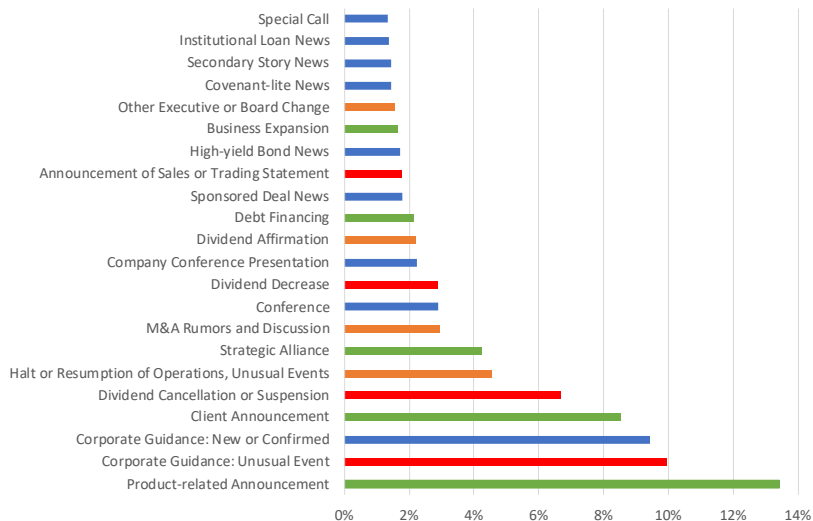
Bad news

1248 bad news:

- Corporate Guidance Unusual Event
- Dividend Cancellation or Suspension
- **Halt of Operations Unusual Event ("close", "halt", "suspend", "cease")**
- Dividend Decrease
- Announcement of Sales or Trading
- Distressed News
- Discontinued Operations or Downsizing
- Delayed Earnings Announcement
- Corporate Guidance Lowered
- Seeking Financing or Partner
- Default News
- Impairments or Write Offs
- Delisting
- Repayment News
- Dividend Affirmation delays ("postpone", "delay", "suspend", "cancel")

Good news

1259 good news:

- Product-related Announcement
- Client Announcement
- Strategic Alliance
- Debt Financing
- Business Expansion
- Seeking Acquisition or Investment
- Corporate Guidance Raised
- Resumption of Operations Unusual ("reopen", "resume")

Bad vs. good news by sector
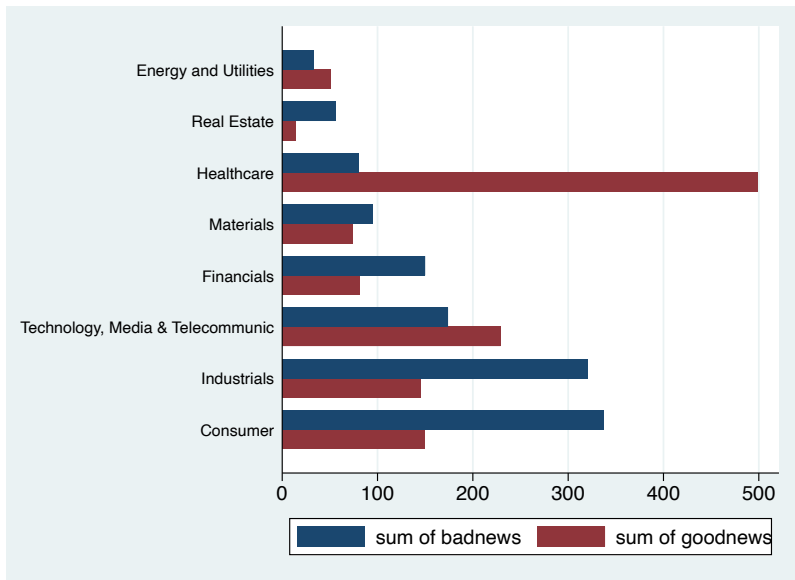
What happens at firms with liquidity shortfalls?

$$policy_f = \alpha_c + \alpha_s + \beta_1 badNews_f + \beta_2 goodNews_f + \Gamma^T X_f + \varepsilon_f \qquad (1)$$

where $policy_f$ is the 6-month growth (as of June 2020) in (i) revenues, (ii) equity, and (iii) debt of the firm,
$badNews_f$ is the number of Covid19-related bad news reported by the firm,
α_c and α_s are country and sector fixed effects.

Summary of results: firms reporting bad news related to Covid19

- have lower revenues

- resulting in a reduction of equity

- increase debt

- have lower realized stock returns (especially for the "halt of operations" news category)

"Halt of Operations" news examples

Halt of Operations Unusual Event ("close", "halt", "suspend", "cease")

- 03/18/2020 BMW Closes Factories in Europe and South Africa Until 19 April

- 03/16/2020 DFL Deutsche Fußball Liga Suspends Match Operations Due to the Current COVID-19 Situation

- 03/31/2020 eDreams ODIGEO Announces the Implementation of Temporary Labour Measures to Ensure Both the Protection of Its Workforce and Business Continuity During the COVID-19 Pandemic

- 04/15/2020 Energean Oil & Gas plc Announces Temporary Halt to Operations

- 03/17/2020 FCA Italy and Maserati to Temporarily Suspend Production Across Majority of Their European Manufacturing Plants

- 03/16/2020 Ferrari Announces the Suspension of Production in Maranello and Modena Until 27 March 2020

- 03/17/2020 H & M Hennes & Mauritz AB Announces Temporarily Closing All Stores in Germany and the US

Outline

Public Interventions and Firms' Market Valuations

$$Return_f = \alpha_c \times \alpha_s + \beta_1 Haltnews_f + \beta_2 Haltnews_f \times Interventions_c + \Gamma^T X_f + \varepsilon_f \quad (2)$$

where $Return_f$ is the stock return of firm f from Jan to Sept 2020.

			Stock Return			
	(1)	(2)	(3)	(4)	(5)	(6)
$Haltnews_f$	-0.42***	-0.42**	-0.37***	-0.43***	-0.43**	-0.37***
	(-2.90)	(-2.11)	(-3.07)	(-2.99)	(-2.21)	(-3.07)
$Haltnews_f * Interventions_c$	0.01*			0.01**		
	(1.87)			(2.39)		
$Haltnews_f * Immediate_c$		0.03			0.04	
		(1.20)			(1.61)	
$Haltnews_f * Guarantees_c$			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

Public Interventions and the Disconnect

$$Revenue_f = \alpha_c \times \alpha_s + \beta_1 Haltnews_f + \beta_2 Haltnews_f \times Interventions_c + \Gamma^T X_f + \varepsilon_f \tag{3}$$

where $Revenue_f$ is the firm's revenues growth during the Covid19 period.

	(1)	(2)	(3)	(4)	(5)	(6)
			Revenue Growth			
$Haltnews_f$	-23.73	16.09	-30.39**	-23.20	17.94	-30.13**
	(-1.59)	(0.56)	(-2.30)	(-1.55)	(0.62)	(-2.26)
$Haltnews_f * Interventions_c$	-0.65			-0.69		
	(-0.85)			(-0.91)		
$Haltnews_f * Immediate_c$		-8.72			-9.09	
		(-1.56)			(-1.62)	
$Haltnews_f * Guarantees_c$			-0.44			-0.47
			(-0.56)			(-0.61)
Observations	778	778	778	778	778	778
R-squared	0.30	0.31	0.30	0.30	0.31	0.30
Firm Controls	NO	NO	NO	YES	YES	YES
Country*Sector FE	YES	YES	YES	YES	YES	YES

Public Interventions and Bank Market Valuations

$$Return_b = \beta_0 + \beta_1 Badnews_b + \beta_2 Interventions_b + \beta_3 Badnews_b \times Interventions_b + \Gamma^T X_b + \varepsilon_b$$
(4)

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)	(-1.98)		
$Badnews_b*Interventions_b$		0.10**		
		(2.04)		
$Immediate_b$			-0.08*	
			(-1.73)	
$Badnews_b*Immediate_b$			0.11	
			(1.02)	
$Guarantees_b$				-0.05*
				(-1.81)
$Badnews_b*Guarantees_b$				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 Covid19 liquidity shock 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%

Foreign Public Interventions and Bank Market Valuations

Reverse causality: government decision to intervene is a function of the health of its domestic banking sector.

$\rightarrow$ we consider the exposure of the bank to foreign public interventions.

	(1)	(2)	(3)	(4)
	Panel B: Bank Stock Return and Foreign Interventions			
$Badnews_b$	-0.31	-0.87**	-0.53	-0.88***
	(-1.02)	(-2.20)	(-1.47)	(-2.96)
$Foreign\_Interventions_b$	-0.01	-0.03**		
	(-1.29)	(-2.19)		
$Badnews_b*Foreign\_Interventions_b$		0.07*		
		(1.78)		
$Foreign\_Immediate_b$			-0.07*	
			(-1.99)	
$Badnews_b*Foreign\_Immediate_b$			0.09	
			(1.15)	
$Foreign\_Guarantees_b$				-0.06**
				(-2.42)
$Badnews_b*Foreign\_Guarantees_b$				0.12**
				(2.36)
Observations	45	45	45	45
R-squared	0.29	0.33	0.36	0.32

Public Interventions and Credit Allocation

Firm borrowing channel: we want to consistently estimate β in the following specification

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

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

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

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

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.

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GIV for $Badnews_c$ based on firms' halt of operations news:

$$\widetilde{Halt}_c = \sum_{f \in c} w_{fc} Haltnews_f - \frac{1}{F_c} \sum_{f \in c} Haltnews_f \qquad (5)$$

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		Foreign bad news	
	(1)	(2)	(3)	(4)
$\widetilde{Halt}_c$	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

Public Interventions and Credit Allocation: Stage 2

The second stage regression uses the instrumented variable $Badnews_c'$:

$$A_{bc} = \alpha_b + \beta\, Badnews_c' + \Gamma^T X_c + \xi_{bc} \qquad (6)$$

| | Panel B: Second Stage | | | | | |
| | All credit | | | | Foreign credit | |
	(1)	(2)	(3)	(4)	(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)
$Badnews_c'*Immediate_c$			-82.02**			-24.99
			(-2.07)			(-1.63)
$Badnews_c'*Guarantees_c$			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.

The disconnect is partly explained by public interventions in the corporate sector.

Our lab: public interventions in Europe during the Covid19 period and firms reporting bad news

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.