

The Economic Effects of COVID-19 and Credit Constraints: Evidence from Italian Firms' Expectations and Plans

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Economic and Financial Implications of COVID-19

COVID-19 in Italy

- Italy represents an ideal laboratory to analyze the shocks associated with the COVID-19 outbreak
 - large shocks with both common components and geographical and sectoral heterogeneity
 - mostly unexpected; first to be hit among Western countries and to implement a national lockdown
 - small and medium firms important: most likely to be affected by financial frictions
- Timeline
 - February 1: first confirmed case
 - March 1: 1,694 confirmed cases and 34 official COVID-19 deaths
 - March 10: lockdown measures for the whole country
 - March 24: 69,176 confirmed cases and 6,820 official COVID-19 deaths

Research questions

1. Do credit constraints amplify the effect of the shocks associated with the outbreak on firms' sales, orders, investment, and employment?
2. What is the effect on firms' pricing strategies? How are those strategies affected by financial frictions?
3. What is the relative importance of supply and demand shocks as perceived by firms at the beginning of the crisis?

Data sources

- Survey collected between March 24 and April 7 on Italian firms' expectations and plans
 - ⇒ two weeks after the lockdown
 - This survey can be matched with the 2019 MET survey completed by mid-January 2020
 - ⇒ a month before the official case zero
 - Snapshot on firms' conditions, expectations, and plans for sales, prices, and factor demand over the next year together with
 - information on broad set of firms' characteristics
 - questions on loan applications to construct proxies for credit constraints
 - for 5,000 firms we can match survey information with balance sheet data
- ⇒ we can analyze how expectations and plans are **revised** due to COVID-19 over a **short window**

More on heterogeneous exposure

- Several *imperfect* measures available to capture the **geographical intensity** of the pandemic at a provincial or regional level
 - ⇒ infections, deaths, excessive deaths, ...
- More informative variable is the number of deaths
 - i. lower measurement error than confirmed infections
 - ii. highest attention received by *newspapers* and *television*⇒ allocate regional deaths according to the proportion of confirmed infections in each province within the region
 - deaths versus mortality rate
- Essential (non-essential) firms' classification for **sectoral heterogeneity**
 - ⇒ 6-digit sectoral classification from the Italian government + essentials suppliers to these sectors

More on heterogeneous geographical exposure in Italy

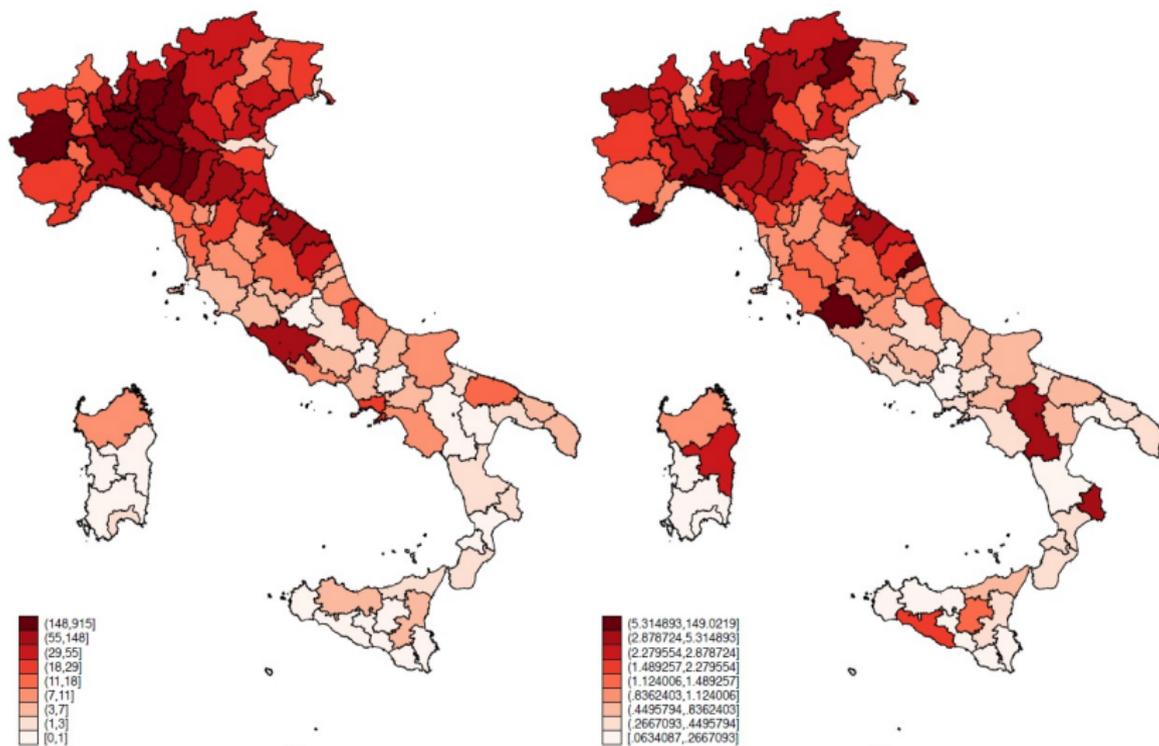


Figure: COVID-19 outbreak by province: total confirmed deaths (left panel) and total confirmed deaths over population (right panel).

Measure for credit constraints

- Measure on credit constraints based on survey level information on loan applications
- Constrained firms are those that replied
 - i. the loan was granted but at a very unfavorable condition
 - ii. the loan was denied
 - iii. they knew the application would have been denied
- We will also explore the role of and control for
 - financial variables such as liquidity and leverage
 - bank relationship variables
 - size and age

Preview of the results (I)

1. Credit constraints amplify the negative effects of the COVID-19 related shocks on sales, orders, employment, and investment
2. Credit constrained firms plan to increase prices relatively more than unconstrained firms
3. Firms located in provinces more affected by the pandemic are more pessimistic in terms of sales and orders, and plan to decrease factor demand and to increase prices by more

Preview of the results (II)

4. Firms subject to more severe restrictions (non-essential) have more pessimistic expectations and plans for factor demand
5. While there is ample evidence of counter-cyclical markup due to credit constraints, there is no empirical support for other reasons for counter-cyclicality (collusive behavior, firms' dynamics)
6. At the aggregate level there is evidence that the supply component of the shocks is somewhat larger than the demand component as we observe fall in expected quantities and a modest increase in planned prices

Related literature

Empirical on COVID-19 Bartik et al. (2020); Balleer et al. (2020); Buchheim et al. (2020); Baert et al. (2020); Coibion et al. (2020); Briscese et al. (2020); Brancati and Brancati (2020); Brinca et al. (2020); Andersen et al. (2020); Hassan et al. (2020); Baker et al. (2020); Caggiano et al. (2020)

Macro models on COVID-19 Baqaee and Farhi (2020a,2020b); Faria-e Castro et al. (2020); Guerrieri et al. (2020); Woodford (2020); Eichenbaum et al. (2020a,2020b); Basu et al. (2020); Bigio et al. (2020); Fornaro and Wolf (2020)

Financial frictions Bernanke et al. (1999); Carlstrom and Fuerst (1997); Gertler and Gilchrist (1994); Kashyap et al. (1994); Chodorow-Reich (2014); Balduzzi et al. (2018); Giroud and Mueller (2017)

Counter-cyclical markup Gottfries (1991); Chevalier and Scharfstein (1995); Gilchrist et al. (2017); Kim (2020); Rotemberg and Saloner (1986); Rotemberg and Woodford (1991,1992,1993); Chatterjee and Cooper (1989); Chatterjee et al. (1993); Bilbiie et al. (2012)

Descriptive evidence

Expected sales

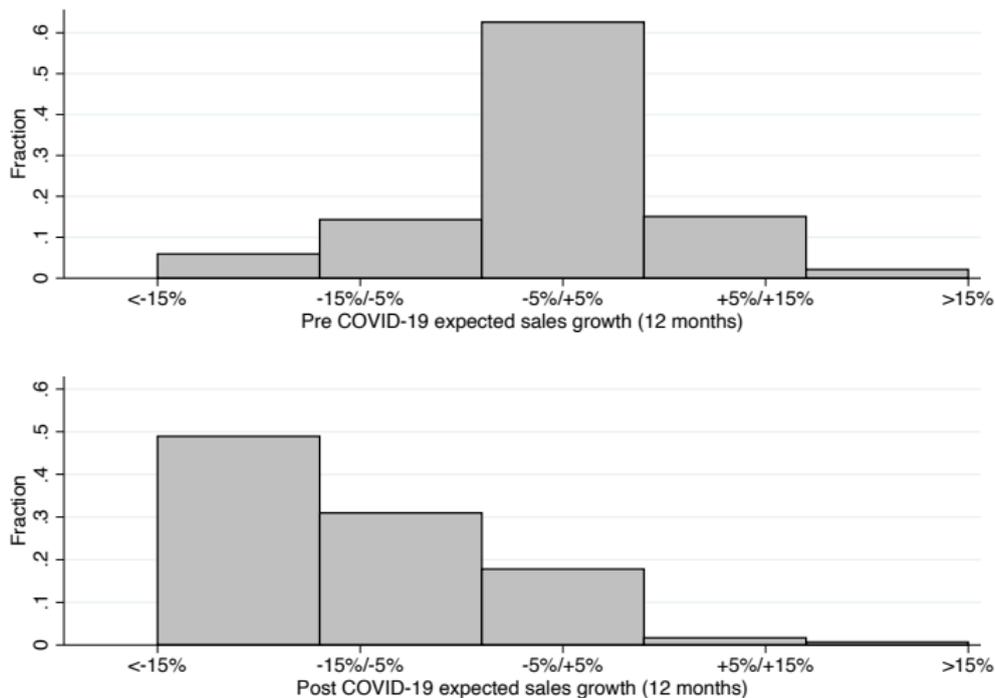


Figure: Pre and post expected sales at 12 months

Price plans

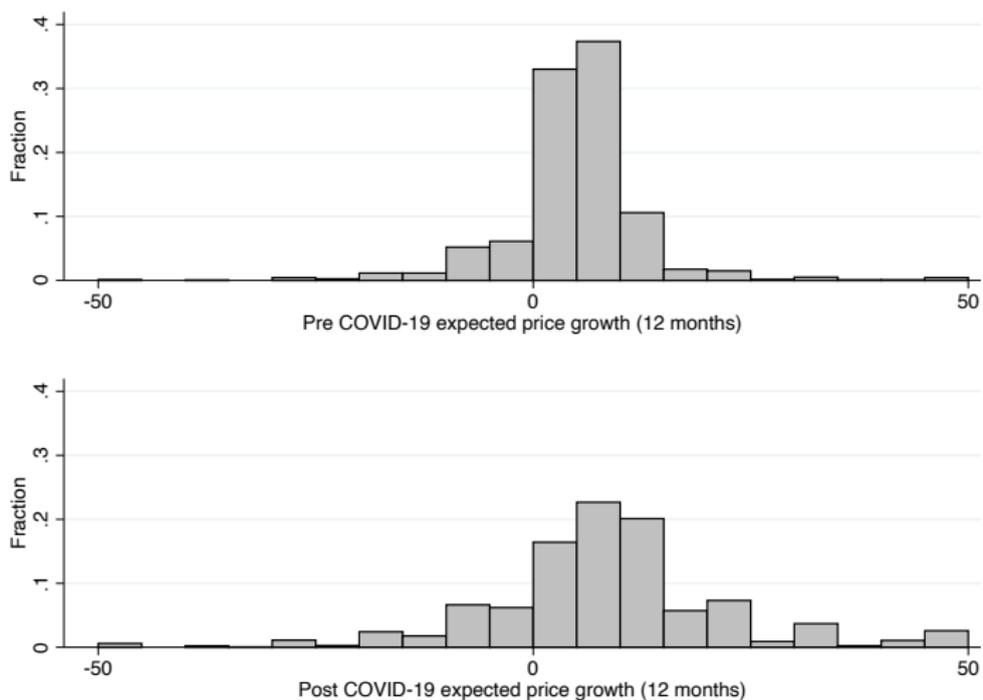


Figure: Pre and post planned prices¹

¹Unweighted means from 1.1% to 7% and sales weighted means from 2.48% to 2.61%

Joint distribution of expected sales and prices

- There is a generalized expected decrease in sales (72.8%)
- The price response is heterogeneous, although a plurality of firms expects a decrease in sales and an increase in prices (32.7%)
- The rest of firms that expect a sales decrease expect no change in prices (33.9%) or a decrease in prices (21.1%)

Long-run versus short-run expectations

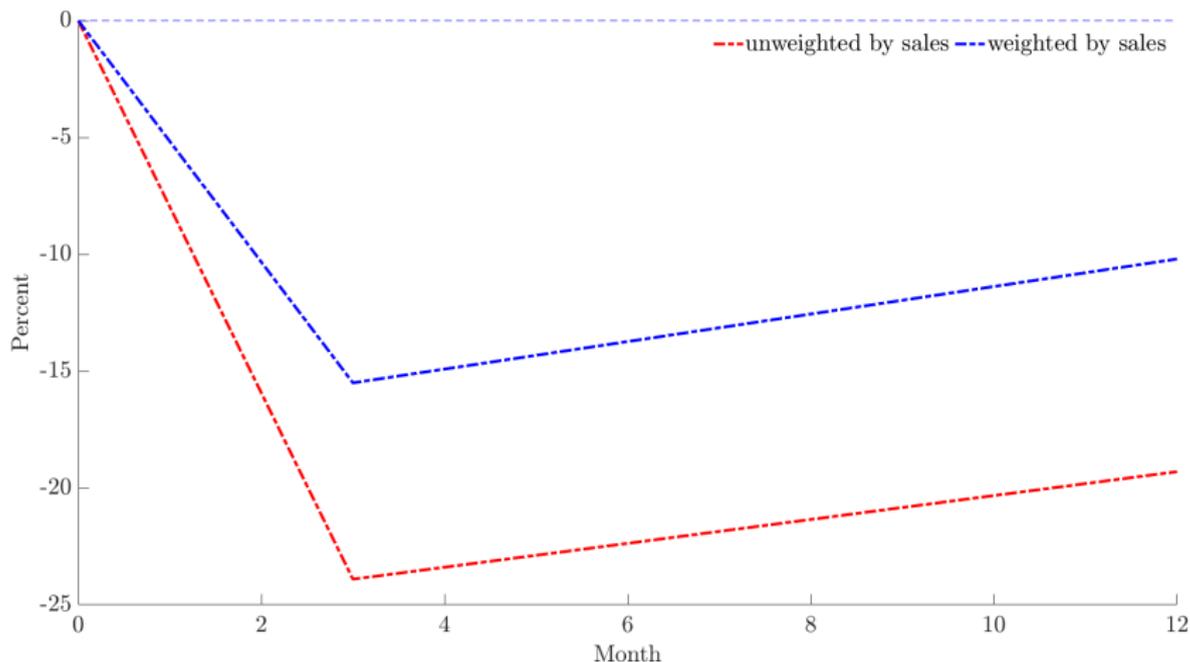


Figure: Post expected sales at the and 12 months²

²Unweighted mean is -23.9% and -19.3% and sales weighted mean is -15.5% and -10.2% for the three- and 12-month horizon, respectively.

A first look at sources of heterogeneity

Role of financial frictions

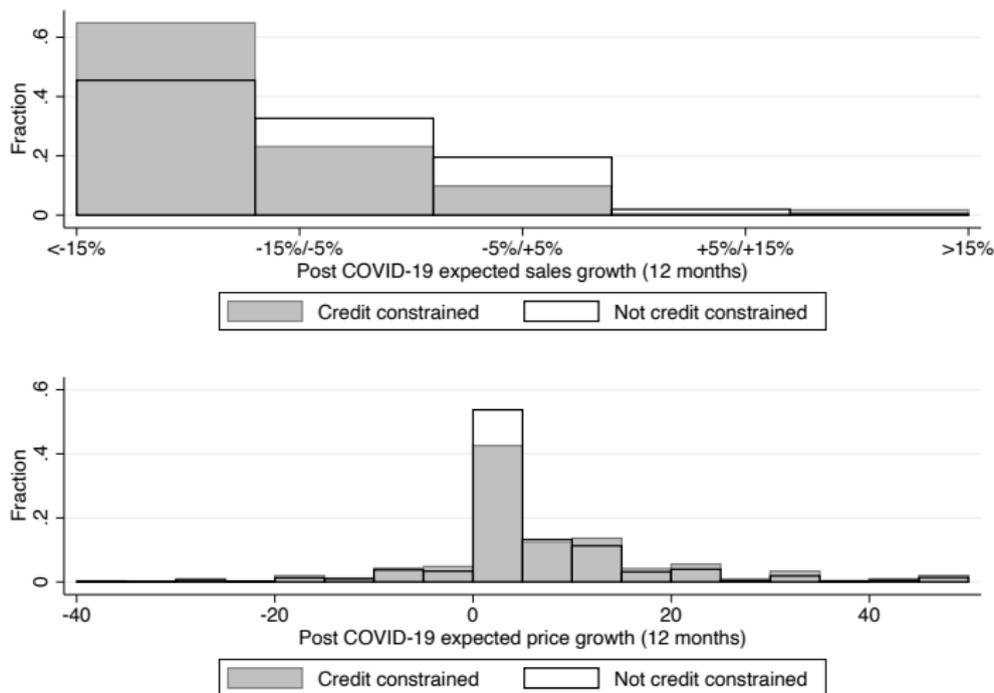


Figure: Post expected sales and planned prices across credit constraints³

³ Average increase for expected prices for financially constrained firms is 8.2% while it is 6.8% for financially unconstrained firms.

Heterogeneous geographical and sectoral effects

- Firms are more pessimistic about sales in provinces with high mortality
- Prices are expected to increase more in high exposure areas relative to low exposure area
- Non-essential firms are more pessimistic than essential firms

Firms' actual responses

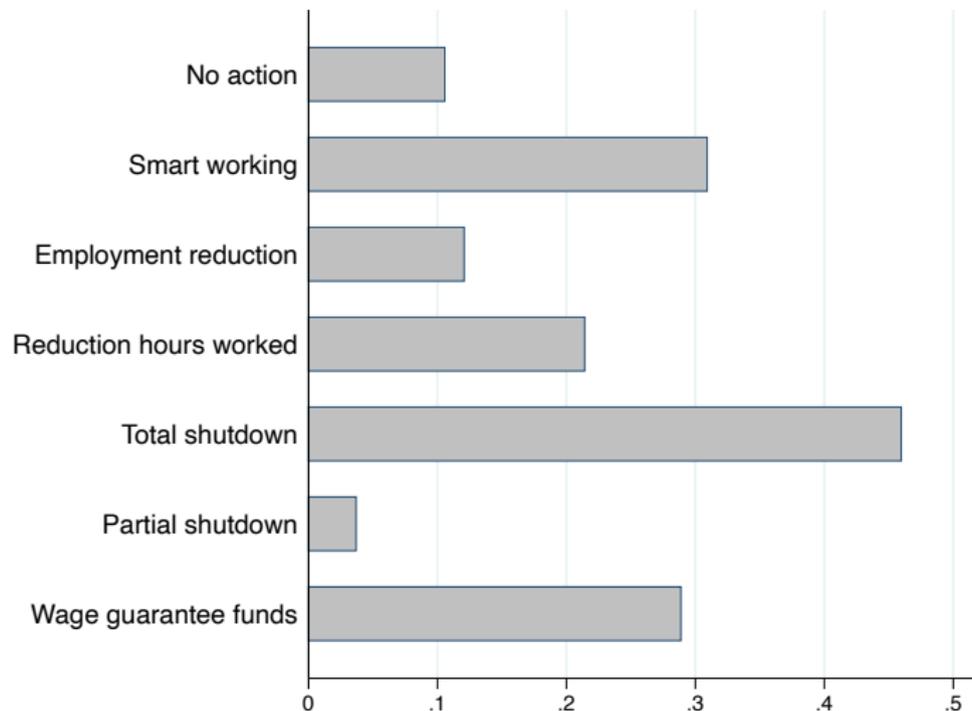


Figure: Measures adopted in response to COVID-19 outbreak

Econometric strategy

Econometric strategy and estimating equation

- Availability of surveys just before and just after COVID-19 outbreak allows us to model the **revision** in expectations
 - exactly the same questions for expected sales (categorical) and planned prices (continuous)
 - for other continuous variables (expected sales, orders, investment, employment), we use past expectations of sales to control for pre COVID-19 expectations

⇒ It is reasonable to assume that the revision (over this *short window*) is due to the shocks associated with the COVID-19 outbreak

- General model

$$\mathbb{E}^i(y_{i,t+1}|\text{post COVID-19}) - \mathbb{E}^i(y_{i,t+1}|\text{pre COVID-19}) = \alpha(\text{CC}_{i,t-1})\eta_t + \beta_1(\text{CC}_{i,t-1})\text{Deaths}_{i,t} + \beta_2(\text{CC}_{i,t-1})\text{Essential}_{i,t} + \gamma'x_{i,t-1} + \lambda_s + \lambda_r + \varepsilon_{i,t}$$

- $\mathbb{E}^i(y_{i,t+1}|\mathcal{I})$ captures the expectation (or plan) at time t of firm i on variable $y_{i,t+1}$ using information set \mathcal{I}
- $x_{i,t-1}$ is a broad set of pre-COVID firms' characteristics (size, age, ...)
- λ_r and λ_s represent region and 2-digit industry fixed effects

Baseline model

$$\mathbb{E}^i(y_{i,t+1}|\text{post COVID-19}) = \delta \mathbb{E}^i(y_{i,t+1}|\text{pre COVID-19}) + \alpha_0 + \alpha_1 \text{CC}_{i,t-1} \\ + \beta_1 \text{Deaths}_{i,t} + \beta_2 \text{Essential}_{i,t} + \tilde{\gamma}' \tilde{x}_{i,t-1} + \lambda_s + \lambda_r + \varepsilon_{i,t}$$

- We present three set of results
 - i. Expected sales \Rightarrow OLS and ordered logit model
 - ii. Price plans \Rightarrow OLS model
 - iii. Other continuous variables \Rightarrow OLS model
(short- & long-term sales, orders, employment, tangible and intangible investment)
- We obtain analogous estimates both with and without ex post sample weights
- Results also robust to
 - i. using wide or narrow set of controls
 - ii. using common information set for deaths for all firms
 - iii. controlling for provincial measures of social capital
 - iv. clustering at the industry level as opposed to the provincial level

Main results on sales over the next 12 months

Model	OLS		Ordered Logit		
	$E_{i,t}(\text{Sales}^{\circ}1Y)$	$E_{i,t}(\text{Sales}^{\circ}1Y)$	$E_{i,t}(\text{Sales}^{\circ}1Y)$	$E_{i,t}(\text{Sales}^{\circ}1Y)$	$\Delta^R E_{i,t}(\text{Sales}^{\circ}1Y)$
Dependent variable:	(1)	(2)	(3)	(4)	(5)
Deaths	-0.0484*** [0.0180]	-0.0466*** [0.0177]	-0.123** [0.0551]	-0.122** [0.0554]	-0.118** [0.0524]
Essential	0.407*** [0.0508]	0.396*** [0.0535]	1.140*** [0.148]	1.123*** [0.160]	1.111*** [0.149]
Credit constrained	-0.194** [0.0834]	-0.187** [0.0774]	-0.668** [0.293]	-0.667** [0.273]	-0.553** [0.225]
$E_{i,t-1}(\text{Sales}^{\circ}1Y)$: Very Negative	-0.290** [0.117]	-0.306*** [0.116]	-1.051* [0.603]	-1.118* [0.595]	4.661*** [0.391]
$E_{i,t-1}(\text{Sales}^{\circ}1Y)$: Negative	-0.356*** [0.0738]	-0.353*** [0.0715]	-1.173*** [0.273]	-1.155*** [0.261]	1.553*** [0.187]
$E_{i,t-1}(\text{Sales}^{\circ}1Y)$: Positive	0.0633 [0.0670]	0.0720 [0.0714]	0.176 [0.172]	0.206 [0.190]	-2.623*** [0.250]
$E_{i,t-1}(\text{Sales}^{\circ}1Y)$: Very Positive	0.356** [0.178]	0.371* [0.189]	0.635 [0.412]	0.702 [0.448]	-5.018*** [0.619]
Size	0.120*** [0.0172]	0.124*** [0.0182]	0.332*** [0.0530]	0.345*** [0.0565]	0.348*** [0.0524]
Age	-0.111*** [0.0330]	-0.101*** [0.0317]	-0.328*** [0.0967]	-0.304*** [0.0942]	-0.287*** [0.0962]
Population	0.0198 [0.0319]	0.0188 [0.0318]	0.0378 [0.0978]	0.0296 [0.0987]	0.0354 [0.0917]
Import		-0.00289 [0.0651]		0.0341 [0.190]	0.0109 [0.188]
Export		-0.210*** [0.0573]		-0.634*** [0.169]	-0.640*** [0.161]
Group		0.108 [0.107]		0.257 [0.302]	0.346 [0.311]
Family Firm		-0.0941 [0.0649]		-0.223 [0.181]	-0.228 [0.187]
% Graduated Empl.		-0.00117 [0.00103]		-0.00356 [0.00299]	-0.00358 [0.00302]
R&D		0.0710 [0.0653]		0.195 [0.194]	0.180 [0.180]
Region FE	✓	✓	✓	✓	✓
Industry (2 Digit) FE	✓	✓	✓	✓	✓
R-squared (Pseudo R2)	0.257	0.270	(0.145)	(0.153)	(0.244)
N obs.	5008	5008	5008	5008	5008

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Population	0.0198 [0.0319]	0.0188 [0.0318]	0.0378 [0.0978]	0.0296 [0.0987]	0.0354 [0.0917]	
Import		-0.00289 [0.0651]		0.0341 [0.190]	0.0109 [0.188]	
Export		-0.210*** [0.0573]		-0.634*** [0.169]	-0.640*** [0.161]	
Group		0.108 [0.107]		0.257 [0.302]	0.346 [0.311]	
Family Firm		-0.0941 [0.0649]		-0.223 [0.181]	-0.228 [0.187]	
% Graduated Empl.		-0.00117 [0.00103]		-0.00356 [0.00299]	-0.00358 [0.00302]	
R&D		0.0710 [0.0653]		0.195 [0.194]	0.180 [0.180]	
Region FE	✓	✓	✓	✓	✓	
Industry (2 Digit) FE	✓	✓	✓	✓	✓	
R-squared (Pseudo R2)	0.257	0.270	(0.145)	(0.153)	(0.244)	
N obs.	5008	5008	5008	5008	5008	

Main results on price plans over the next 12 months

Dependent variable:	$E_{i,t}(P^g)$	$E_{i,t}(P^g)$	$\Delta^R E_{i,t}(P^g)$
	(1)	(2)	(3)
Deaths	2.662*** [0.889]	2.529*** [0.815]	2.805*** [0.840]
Essential	-1.813 [2.668]	-2.189 [2.485]	-2.578 [2.705]
Credit constrained	4.412** [1.969]	4.480** [2.005]	5.801*** [2.081]
$E_{i,t-1}(P^g)$	0.122 [0.0893]	0.134 [0.0933]	
Size	-1.016*** [0.345]	-0.880** [0.371]	-1.030*** [0.363]
Age	-0.833 [1.039]	-0.712 [1.110]	-0.350 [1.083]
Population	0.704 [0.788]	0.607 [0.797]	0.644 [0.827]
Import		-1.051 [1.158]	-0.951 [1.189]
Export		-1.982 [1.596]	-2.212 [1.590]
Group		0.313 [1.350]	0.464 [1.220]
Family Firm		-0.303 [1.130]	-0.271 [1.143]
% Graduated Empl.		0.0392 [0.0327]	0.0463 [0.0316]
R&D		-1.894 [1.207]	-1.819 [1.163]
Region FE	✓	✓	✓
Industry (2 Digit) FE	✓	✓	✓
R-squared	0.185	0.197	0.209
N obs.	4886	4886	4886

Main results on price plans over the next 12 months

Dependent variable:	$E_{i,t}(P^g)$	$E_{i,t}(P^g)$	$\Delta^R E_{i,t}(P^g)$
	(1)	(2)	(3)
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% Graduated Empl.		0.0392 [0.0327]	0.0463 [0.0316]
R&D		-1.894 [1.207]	-1.819 [1.163]
Region FE	✓	✓	✓
Industry (2 Digit) FE	✓	✓	✓
R-squared	0.185	0.197	0.209
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Main results on price plans over the next 12 months

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% Graduated Empl.		0.0392 [0.0327]	0.0463 [0.0316]
R&D		-1.894 [1.207]	-1.819 [1.163]
Region FE	✓	✓	✓
Industry (2 Digit) FE	✓	✓	✓
R-squared	0.185	0.197	0.209
N obs.	4886	4886	4886

Main results on price plans over the next 12 months

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$E_{i,t-1}(P^g)$	0.122 [0.0893]	0.134 [0.0933]	
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Group		0.313 [1.350]	0.464 [1.220]
Family Firm		-0.303 [1.130]	-0.271 [1.143]
% Graduated Empl.		0.0392 [0.0327]	0.0463 [0.0316]
R&D		-1.894 [1.207]	-1.819 [1.163]
Region FE	✓	✓	✓
Industry (2 Digit) FE	✓	✓	✓
R-squared	0.185	0.197	0.209
N obs.	4886	4886	4886

Main results on other variables

	(1)	(2)	(3)	(4)	(5)	(6)
	$E_{i,t}(\text{Sal}^{\text{p}3\text{M}})$	$E_{i,t}(\text{Sal}^{\text{p}1\text{Y}})$	$E_{i,t}(\text{Ord}^{\text{p}})$	$E_{i,t}(\text{Emp}^{\text{p}})$	$E_{i,t}(\text{Tan}^{\text{p}})$	$E_{i,t}(\text{Int}^{\text{p}})$
Deaths	-1.774*** [0.614]	-1.731*** [0.452]	-1.933*** [0.481]	-1.571** [0.664]	-1.554 [1.250]	-0.260 [0.740]
Essential	10.45*** [1.768]	8.900*** [1.586]	6.733*** [1.742]	4.495** [1.741]	10.41*** [2.838]	8.706*** [2.325]
Credit constrained	-14.86*** [3.600]	-7.856*** [2.361]	-10.17*** [2.746]	-7.830** [3.073]	-4.878* [2.586]	-5.556** [2.235]
$E_{i,t-1}(\text{Sales}^{\text{p}1\text{Y}})$: Very Negative	-10.59* [6.347]	-15.22*** [5.376]	-13.56** [5.651]	-14.48*** [5.251]	-21.15*** [7.716]	-15.33** [7.350]
$E_{i,t-1}(\text{Sales}^{\text{p}1\text{Y}})$: Negative	-3.365 [5.477]	-13.15*** [3.925]	-14.44*** [3.994]	-6.536** [2.654]	-12.49*** [3.646]	-10.32*** [3.448]
$E_{i,t-1}(\text{Sales}^{\text{p}1\text{Y}})$: Positive	6.804 [4.479]	0.439 [2.707]	-2.762 [2.817]	-0.756 [2.460]	-7.633** [2.962]	-3.681 [2.747]
$E_{i,t-1}(\text{Sales}^{\text{p}1\text{Y}})$: Very Positive	7.965* [4.600]	1.571 [3.106]	-1.391 [3.097]	0.544 [2.487]	-3.839 [3.064]	-4.677 [3.273]
Size	3.007*** [0.580]	2.775*** [0.573]	2.504*** [0.410]	0.887*** [0.324]	1.228* [0.635]	0.892 [0.632]
Age	-1.724** [0.861]	-2.289** [0.937]	-2.727*** [0.971]	0.245 [1.355]	-0.602 [1.033]	2.199 [1.411]
Population	-1.108 [1.209]	-0.971 [1.228]	-0.192 [1.407]	-1.431* [0.858]	-0.876 [1.027]	-1.443 [0.987]
Import	-3.535* [2.083]	-1.329 [1.526]	0.0889 [1.717]	-2.042 [1.287]	-2.620 [2.511]	-1.093 [2.755]
Export	-5.090*** [1.775]	-1.586 [1.541]	-1.596 [2.004]	0.439 [1.217]	-3.165 [2.834]	-2.180 [2.243]
Group	-0.0153 [2.616]	0.386 [2.616]	-2.613 [2.408]	1.389 [1.405]	1.960 [2.248]	2.374 [2.143]
Family Firm	-1.734 [1.536]	-2.492* [1.303]	-1.930 [1.385]	-1.007 [1.341]	-1.759 [2.195]	-0.800 [2.130]
% Graduated Empl.	0.0446 [0.0306]	-0.00703 [0.0283]	0.000901 [0.0270]	-0.0130 [0.0333]	-0.0233 [0.0289]	0.0451* [0.0266]
R&D	-0.0632 [1.756]	-0.201 [1.331]	-3.057* [1.745]	2.852** [1.416]	-1.322 [2.506]	2.712 [1.703]
Region FE	✓	✓	✓	✓	✓	✓
Industry (2 Digit) FE	✓	✓	✓	✓	✓	✓
R-squared	0.317	0.309	0.272	0.262	0.200	0.197
N obs.	5008	5007	5007	5007	5004	5003

Main results on other variables

	(1)	(2)	(3)	(4)	(5)	(6)
	$E_{i,t-1}(\text{Sales}^{\text{Q1Y}})$	$E_{i,t}(\text{Sales}^{\text{Q1Y}})$	$E_{i,t}(\text{Ord}^{\text{Q}})$	$E_{i,t}(\text{Emp}^{\text{Q}})$	$E_{i,t}(\text{Tan}^{\text{Q}})$	$E_{i,t}(\text{Int}^{\text{Q}})$
Deaths	-1.774*** [0.614]	-1.731*** [0.452]	-1.933*** [0.481]	-1.571** [0.664]	1.554 [1.250]	-0.260 [0.740]
Essential	10.45 [1.768]	8.000*** [1.586]	6.7224*** [1.742]	4.495** [1.741]	10.41*** [2.838]	8.706*** [2.325]
Credit constrained	-14.86*** [3.600]	-7.856*** [2.361]	-10.17*** [2.746]	-7.830** [3.073]	-4.878* [2.586]	-5.556** [2.235]
$E_{i,t-1}(\text{Sales}^{\text{Q1Y}})$: Very Negative	-10.59* [6.347]	-15.22*** [5.376]	-13.56** [5.651]	-14.48*** [5.251]	-21.15*** [7.716]	-15.33** [7.350]
$E_{i,t-1}(\text{Sales}^{\text{Q1Y}})$: Negative	-3.365 [5.477]	-13.15*** [3.925]	-14.44*** [3.994]	-6.536** [2.654]	-12.49*** [3.646]	-10.32*** [3.448]
$E_{i,t-1}(\text{Sales}^{\text{Q1Y}})$: Positive	6.804 [4.479]	0.439 [2.707]	-2.762 [2.817]	-0.756 [2.460]	-7.633** [2.962]	-3.681 [2.747]
$E_{i,t-1}(\text{Sales}^{\text{Q1Y}})$: Very Positive	7.965* [4.600]	1.571 [3.106]	-1.391 [3.097]	0.544 [2.487]	-3.839 [3.064]	-4.677 [3.273]
Size	3.007*** [0.580]	2.775*** [0.573]	2.504*** [0.410]	0.887*** [0.324]	1.228* [0.635]	0.892 [0.632]
Age	-1.724** [0.861]	-2.289** [0.937]	-2.727*** [0.971]	0.245 [1.355]	-0.602 [1.033]	2.199 [1.411]
Population	-1.108 [1.209]	-0.971 [1.228]	-0.192 [1.407]	-1.431* [0.858]	-0.876 [1.027]	-1.443 [0.987]
Import	-3.535* [2.083]	-1.329 [1.526]	0.0889 [1.717]	-2.042 [1.287]	-2.620 [2.511]	-1.093 [2.755]
Export	-5.090*** [1.775]	-1.586 [1.541]	-1.596 [2.004]	0.439 [1.217]	-3.165 [2.834]	-2.180 [2.243]
Group	-0.0153 [2.616]	0.386 [2.616]	-2.613 [2.408]	1.389 [1.405]	1.960 [2.248]	2.374 [2.143]
Family Firm	-1.734 [1.536]	-2.492* [1.303]	-1.930 [1.385]	-1.007 [1.341]	-1.759 [2.195]	-0.800 [2.130]
% Graduated Empl.	0.0446 [0.0306]	-0.00703 [0.0283]	0.000901 [0.0270]	-0.0130 [0.0333]	-0.0233 [0.0289]	0.0451* [0.0266]
R&D	-0.0632 [1.756]	-0.201 [1.331]	-3.057* [1.745]	2.852** [1.416]	-1.322 [2.506]	2.712 [1.703]
Region FE	✓	✓	✓	✓	✓	✓
Industry (2 Digit) FE	✓	✓	✓	✓	✓	✓
R-squared	0.317	0.309	0.272	0.262	0.200	0.197
N obs.	5008	5007	5007	5007	5004	5003

Main results on other variables

	(1)	(2)	(3)	(4)	(5)	(6)
	$E_{i,t}(\text{Sal}^{\text{p}3\text{M}})$	$E_{i,t}(\text{Sal}^{\text{p}1\text{Y}})$	$E_{i,t}(\text{Ord}^{\text{p}})$	$E_{i,t}(\text{Emp}^{\text{p}})$	$E_{i,t}(\text{Tan}^{\text{p}})$	$E_{i,t}(\text{Int}^{\text{p}})$
Deaths	-1.774*** [0.614]	-1.731*** [0.452]	-1.933*** [0.481]	-1.571** [0.664]	-1.554 [1.250]	-0.260 [0.740]
Essential	10.45*** [1.768]	8.900*** [1.586]	6.733*** [1.742]	4.495** [1.741]	10.41*** [2.838]	8.706*** [2.325]
Credit constrained	-14.86*** [3.600]	-7.856*** [2.361]	-10.17*** [2.746]	-7.820** [3.073]	-4.978 [2.586]	-5.556** [2.235]
$E_{i,t-1}(\text{Sales}^{\text{p}1\text{Y}})$: Very Negative	-10.59* [6.347]	-15.22*** [5.376]	-13.56** [5.651]	-14.48*** [5.251]	-21.15*** [7.716]	-15.33** [7.350]
$E_{i,t-1}(\text{Sales}^{\text{p}1\text{Y}})$: Negative	-3.365 [5.477]	-13.15*** [3.925]	-14.44*** [3.994]	-6.536** [2.654]	-12.49*** [3.646]	-10.32*** [3.448]
$E_{i,t-1}(\text{Sales}^{\text{p}1\text{Y}})$: Positive	6.804 [4.479]	0.439 [2.707]	-2.762 [2.817]	-0.756 [2.460]	-7.633** [2.962]	-3.681 [2.747]
$E_{i,t-1}(\text{Sales}^{\text{p}1\text{Y}})$: Very Positive	7.965* [4.600]	1.571 [3.106]	-1.391 [3.097]	0.544 [2.487]	-3.839 [3.064]	-4.677 [3.273]
Size	3.007*** [0.580]	2.775*** [0.573]	2.504*** [0.410]	0.887*** [0.324]	1.228* [0.635]	0.892 [0.632]
Age	-1.724** [0.861]	-2.289** [0.937]	-2.727*** [0.971]	0.245 [1.355]	-0.602 [1.033]	2.199 [1.411]
Population	-1.108 [1.209]	-0.971 [1.228]	-0.192 [1.407]	-1.431* [0.858]	-0.876 [1.027]	-1.443 [0.987]
Import	-3.535* [2.083]	-1.329 [1.526]	0.0889 [1.717]	-2.042 [1.287]	-2.620 [2.511]	-1.093 [2.755]
Export	-5.090*** [1.775]	-1.586 [1.541]	-1.596 [2.004]	0.439 [1.217]	-3.165 [2.834]	-2.180 [2.243]
Group	-0.0153 [2.616]	0.386 [2.616]	-2.613 [2.408]	1.389 [1.405]	1.960 [2.248]	2.374 [2.143]
Family Firm	-1.734 [1.536]	-2.492* [1.303]	-1.930 [1.385]	-1.007 [1.341]	-1.759 [2.195]	-0.800 [2.130]
% Graduated Empl.	0.0446 [0.0306]	-0.00703 [0.0283]	0.000901 [0.0270]	-0.0130 [0.0333]	-0.0233 [0.0289]	0.0451* [0.0266]
R&D	-0.0632 [1.756]	-0.201 [1.331]	-3.057* [1.745]	2.852** [1.416]	-1.322 [2.506]	2.712 [1.703]
Region FE	✓	✓	✓	✓	✓	✓
Industry (2 Digit) FE	✓	✓	✓	✓	✓	✓
R-squared	0.317	0.309	0.272	0.262	0.200	0.197
N obs.	5008	5007	5007	5007	5004	5003

Main results on other variables

	(1)	(2)	(3)	(4)	(5)	(6)
	$E_{i,t}(\text{Sal}^{\text{3M}})$	$E_{i,t}(\text{Sal}^{\text{1Y}})$	$E_{i,t}(\text{Ord}^{\text{2}})$	$E_{i,t}(\text{Emp}^{\text{2}})$	$E_{i,t}(\text{Tan}^{\text{2}})$	$E_{i,t}(\text{Int}^{\text{2}})$
Deaths	-1.774*** [0.614]	-1.731*** [0.452]	-1.933*** [0.481]	-1.571** [0.664]	-1.554 [1.250]	-0.260 [0.740]
Essential	10.45*** [1.768]	8.900*** [1.586]	6.733*** [1.742]	4.495*** [1.741]	10.41*** [2.898]	8.706*** [2.325]
Credit constrained	-14.86*** [3.600]	-7.856*** [2.361]	-10.17*** [2.746]	-7.830** [3.073]	-4.878* [2.586]	-5.556** [2.235]
$E_{i,t-1}(\text{Sales}^{\text{1Y}})$: Very Negative	-10.59** [6.347]	-13.22*** [5.376]	-13.56*** [5.651]	-14.48*** [5.251]	-21.15*** [7.716]	-15.33** [7.350]
$E_{i,t-1}(\text{Sales}^{\text{1Y}})$: Negative	-3.365 [5.477]	-13.15*** [3.925]	-14.44*** [3.994]	-6.536** [2.654]	-12.49*** [3.646]	-10.32*** [3.448]
$E_{i,t-1}(\text{Sales}^{\text{1Y}})$: Positive	6.804 [4.479]	0.439 [2.707]	-2.762 [2.817]	-0.756 [2.460]	-7.633** [2.962]	-3.681 [2.747]
$E_{i,t-1}(\text{Sales}^{\text{1Y}})$: Very Positive	7.965* [4.600]	1.571 [3.106]	-1.391 [3.097]	0.544 [2.487]	-3.839 [3.064]	-4.677 [3.273]
Size	3.007*** [0.580]	2.775*** [0.573]	2.504*** [0.410]	0.887*** [0.324]	1.228* [0.635]	0.892 [0.632]
Age	-1.724** [0.861]	-2.289** [0.937]	-2.727*** [0.971]	0.245 [1.355]	-0.602 [1.033]	2.199 [1.411]
Population	-1.108 [1.209]	-0.971 [1.228]	-0.192 [1.407]	-1.431* [0.858]	-0.876 [1.027]	-1.443 [0.987]
Import	-3.535* [2.083]	-1.329 [1.526]	0.0889 [1.717]	-2.042 [1.287]	-2.620 [2.511]	-1.093 [2.755]
Export	-5.090*** [1.775]	-1.586 [1.541]	-1.596 [2.004]	0.439 [1.217]	-3.165 [2.834]	-2.180 [2.243]
Group	-0.0153 [2.616]	0.386 [2.616]	-2.613 [2.408]	1.389 [1.405]	1.960 [2.248]	2.374 [2.143]
Family Firm	-1.734 [1.536]	-2.492* [1.303]	-1.930 [1.385]	-1.007 [1.341]	-1.759 [2.195]	-0.800 [2.130]
% Graduated Empl.	0.0446 [0.0306]	-0.00703 [0.0283]	0.000901 [0.0270]	-0.0130 [0.0333]	-0.0233 [0.0289]	0.0451* [0.0266]
R&D	-0.0632 [1.756]	-0.201 [1.331]	-3.057* [1.745]	2.852** [1.416]	-1.322 [2.506]	2.712 [1.703]
Region FE	✓	✓	✓	✓	✓	✓
Industry (2 Digit) FE	✓	✓	✓	✓	✓	✓
R-squared	0.317	0.309	0.272	0.262	0.200	0.197
N obs.	5008	5007	5007	5007	5004	5003

Summary of the results

1. Expected sales

- more pessimistic in areas more severely affected by the crisis
- negative effect significantly attenuated if the firm is classified as essential
- financially constrained firms are more pessimistic \Rightarrow *amplification effect*

2. Price plans

- credit constrained firms plan to increase prices by approximately 4-6 additional percentage points
- a standard deviation increase in the log of deaths (approximately five deaths) raises prices by approximately 2.5 percentage points

3. Other continuous variables

- deaths have negative and significant effect on short- and long-term expectations (larger for short-term), orders, and employment
- less negative expected outcomes for essential firms
- being credit constrained affects negatively and significantly all the variables \Rightarrow *amplification effect*

More on financing constraints and liquidity

- Replace credit constraints with past (2018) liquidity, cash flow, tangibility, leverage, and bank relationship variables Table
 - stronger association is with the initial stock of liquid assets
 - coefficient is larger for expected sales at three-month horizon
 - liquidity is less significant for investment
 - coefficient on leverage mostly non-significant
- If we include financial and relationship variables together with our proxy for credit constraints, the latter dominates
 - ⇒ our proxy contains information that goes beyond firm's riskiness and other measures of credit worthiness
- Probability of being credit constrained after the pandemic related to Table
 - lagged measures of credit constraints
 - past cash flows, liquidity, and leverage

Models with richer interactions

Estimating equation and results

$$\begin{aligned}\mathbb{E}^i(y_{i,t+1}|\text{post COVID-19}) &= \delta \mathbb{E}^i(y_{i,t+1}|\text{pre COVID-19}) + \alpha_0 + \alpha_1 \text{CC}_{i,t-1} \\ &+ \beta_{1,0} \text{Deaths}_{i,t} + \beta_{1,1} \text{CC}_{i,t-1} \times \text{Deaths}_{i,t} \\ &+ \beta_{2,0} \text{Essential}_{i,t} + \beta_{2,1} \text{CC}_{i,t-1} \times \text{Essential}_{i,t} + \tilde{\gamma}' \tilde{x}_{i,t-1} + \lambda_r + \lambda_s + \varepsilon_{i,t}\end{aligned}$$

- Fundamental conclusions are largely confirmed Tables
- There is evidence that financial frictions amplify also geographical and sectoral components of the shocks
 - interaction credit constraints and essential is now significant for sales and investment
 - interaction credit constraints and deaths is significant for sales over the next three months
- Geographic dimension not important in determining the effect of credit constraints on price expectations
- Being essential reduces the effects of credit constraints on prices

More on markup and the relative
importance of supply and demand shocks

Supply versus demand

- Credit constraints is only one reason why markup is counter-cyclical
- Other reasons for counter-cyclicality
 - i. in an oligopoly it is more difficult to collude during booms
 - ii. changes in the number of firms over the cycle affect competitiveness
- Sector dummies not significantly related to HHI or to measures of firms' dynamics (*entry+exit* or *exit* rates)

⇒ As in the aggregate we find a mild increase in inflation,

⇒ the increase in prices we observe suggests that supply shocks are somewhat more important than demand shocks

(at least for the non-credit constrained firms, that are the majority)

Conclusions

Conclusions

- Negative effect of the pandemic amply confirmed
 - decrease in expected sales, order, employment, and investment
 - firms planning to charge higher prices
 - negative impact more pronounced in areas more affected by the pandemic
 - negative effect more pronounced for non-essential firms
- Strong evidence that financial frictions amplify the effect of the shocks
 - credit constrained firms have more pessimistic expectations about future sales, orders, and plan to reduce employment and investment more
- Constrained firms expect to increase prices more than unconstrained firms
 - search for and availability of liquidity key determinant of pricing plans
- The expected increase in markup for non-credit constrained firms is not the reason why we observe an increase in prices
 - large fall in quantities together with the moderate increase in prices imply that supply shocks are somewhat more important than demand shocks

Descriptive statistics

Variable	Type	Mean	Q1	Q2	Q3	Stdev
$E_{i,t}(\text{Sales1Y})$: Very Negative	Categorical	0.489	-	-	-	-
$E_{i,t}(\text{Sales1Y})$: Negative	Categorical	0.309	-	-	-	-
$E_{i,t}(\text{Sales1Y})$: Constant	Categorical	0.178	-	-	-	-
$E_{i,t}(\text{Sales1Y})$: Positive	Categorical	0.016	-	-	-	-
$E_{i,t}(\text{Sales1Y})$: Very Positive	Categorical	0.006	-	-	-	-
$E_{i,t-1}(\text{Sales1Y})$: Very Negative	Categorical	0.059	-	-	-	-
$E_{i,t-1}(\text{Sales1Y})$: Negative	Categorical	0.143	-	-	-	-
$E_{i,t-1}(\text{Sales1Y})$: Constant	Categorical	0.625	-	-	-	-
$E_{i,t-1}(\text{Sales1Y})$: Positive	Categorical	0.151	-	-	-	-
$E_{i,t-1}(\text{Sales1Y})$: Very Positive	Categorical	0.021	-	-	-	-
$E_{i,t}(\text{Price } 1Y)$	Continuous	0.071	0.000	0.000	0.010	0.183
$E_{i,t}(\text{Price } (\text{expo } 1Y))$	Continuous	0.022	0.000	0.000	0.000	0.115
$E_{i,t-1}(\text{Price } 1Y)$	Continuous	0.011	0.000	0.000	0.010	0.061
$E_{i,t-1}(\text{Price } (\text{expo } 1Y))$	Continuous	0.016	0.000	0.000	0.030	0.045
$\Delta E_{i,t}^R(\text{Sal3M})$	Continuous	-0.239	-0.400	-0.150	0.000	0.294
$\Delta E_{i,t}^R(\text{Sal1Y})$	Continuous	-0.193	-0.300	-0.100	0.000	0.234
$\Delta E_{i,t}^R(\text{Ord1Y})$	Continuous	-0.174	-0.300	-0.100	0.000	0.244
$\Delta E_{i,t}^R(\text{Emp1Y})$	Continuous	-0.088	0.000	0.000	0.000	0.236
$\Delta E_{i,t}^R(\text{Tan1Y})$	Continuous	-0.146	-0.100	0.000	0.000	0.322
$\Delta E_{i,t}^R(\text{Int1Y})$	Continuous	-0.131	-0.060	0.000	0.000	0.312
Post-COVID Rationing	Categorical	0.372	-	-	-	-
Credit Rationing	Categorical	0.178	-	-	-	-
COVID Deaths	Continuous	0.251	0.021	0.063	0.154	0.476
COVID Infections	Continuous	1.951	0.337	0.843	1.853	2.774
Population	Continuous	13.62	12.94	13.69	14.63	1.232
Essential	Categorical	0.271	-	-	-	-
Size	Continuous	14.73	13.54	14.61	15.77	1.745
Age	Continuous	3.011	2.639	3.178	3.555	0.823
Export	Categorical	0.299	-	-	-	-
Import	Categorical	0.246	-	-	-	-
R&D	Categorical	0.241	-	-	-	-
Group	Categorical	0.124	-	-	-	-
% graduated empl.	Continuous	0.112	0.000	0.000	0.112	0.220
Family firm	Categorical	0.707	-	-	-	-
Leverage	Continuous	0.678	0.518	0.722	0.867	0.234
Liquidity	Continuous	0.128	0.015	0.066	0.183	0.127
Tangible ass.	Continuous	0.211	0.038	0.143	0.329	0.207
Trade credit	Continuous	-0.111	-0.222	-0.048	0.000	0.147
N banks	Continuous	1.008	0.693	1.098	1.386	0.468
Length bank rel.	Continuous	0.597	0.251	0.470	0.775	0.534
Distance bank	Continuous	5.424	5.023	5.669	6.236	1.218

Role of liquidity (I)

	(1)	(2)	(3)	(4)	(5)	(6)
	$E_{i,t}(\text{Sal}^{\$3\text{M}})$	$E_{i,t}(\text{Sal}^{\$1\text{Y}})$	$E_{i,t}(\text{Ord}^{\$})$	$E_{i,t}(\text{Emp}^{\$})$	$E_{i,t}(\text{Tan}^{\$})$	$E_{i,t}(\text{Int}^{\$})$
Deaths	-1.623** [0.810]	-1.469** [0.619]	-2.080*** [0.679]	-1.800*** [0.656]	-1.266 [1.198]	0.297 [0.870]
Essential	11.02*** [1.587]	9.137*** [1.648]	6.700*** [1.862]	4.732*** [1.598]	10.84*** [2.938]	8.709*** [2.521]
Liquidity	8.112*** [2.370]	5.275** [2.329]	8.010*** [2.468]	5.804** [2.901]	4.388 [2.962]	4.451* [2.473]
Cash Flow	-7.683 [6.728]	0.373 [4.740]	1.673 [5.358]	11.19* [5.982]	-3.093 [6.989]	-3.710 [7.455]
Tangible Assets	4.563 [4.930]	7.925** [3.369]	5.229 [3.889]	-0.113 [4.547]	2.523 [5.502]	-0.384 [4.472]
Leverage	-0.0747 [0.0647]	-0.0592 [0.0631]	0.0805* [0.0475]	0.107** [0.0526]	-0.0412 [0.0735]	-0.000812 [0.0626]
N of Lender Banks	-3.722 [2.811]	-1.380 [2.785]	-2.209 [2.830]	-2.393 [2.001]	-0.988 [3.236]	1.150 [2.590]
Lending Relationship (Years)	3.321** [1.478]	0.796 [1.308]	1.696 [1.695]	1.566 [1.185]	0.284 [1.592]	0.577 [1.462]
Distance lender bank	-0.162 [0.692]	0.742 [0.660]	-0.396 [0.654]	-0.0489 [0.946]	0.425 [0.857]	0.961 [0.840]
Trade Credit	-1.688 [5.213]	-5.250 [4.962]	1.852 [5.109]	3.452 [3.930]	0.313 [5.831]	-6.311 [7.177]
Region FE	✓	✓	✓	✓	✓	✓
Industry (2 Digit) FE	✓	✓	✓	✓	✓	✓
Wide controls	✓	✓	✓	✓	✓	✓
R-squared	0.325	0.320	0.272	0.294	0.200	0.195
N obs.	4709	4708	4708	4708	4705	4704

Role of liquidity (I)

	(1)	(2)	(3)	(4)	(5)	(6)
	$E_{i,t}(\text{Sal}^{\text{93M}})$	$E_{i,t}(\text{Sal}^{\text{91Y}})$	$E_{i,t}(\text{Ord}^{\text{9}})$	$E_{i,t}(\text{Emp}^{\text{9}})$	$E_{i,t}(\text{Tan}^{\text{9}})$	$E_{i,t}(\text{Int}^{\text{9}})$
Deaths	-1.623** [0.810]	-1.469** [0.619]	-2.080*** [0.679]	-1.800*** [0.656]	-1.266 [1.198]	0.297 [0.870]
Essential	11.02*** [1.587]	9.137*** [1.648]	6.700*** [1.862]	4.732*** [1.598]	10.84*** [3.038]	8.709*** [2.521]
Liquidity	8.112*** [2.370]	5.275** [2.329]	8.010*** [2.468]	5.804** [2.901]	4.388 [2.962]	4.451* [2.473]
Cash Flow	-7.683 [6.728]	0.373 [4.740]	1.673 [5.358]	11.19* [5.982]	-3.093 [6.989]	-3.710 [7.455]
Tangible Assets	4.563 [4.930]	7.925** [3.369]	5.229 [3.889]	-0.113 [4.547]	2.523 [5.502]	-0.384 [4.472]
Leverage	-0.0747 [0.0647]	-0.0592 [0.0631]	0.0805* [0.0475]	0.107** [0.0526]	-0.0412 [0.0735]	-0.000812 [0.0626]
N of Lender Banks	-3.722 [2.811]	-1.380 [2.785]	-2.209 [2.830]	-2.393 [2.001]	-0.988 [3.236]	1.150 [2.590]
Lending Relationship (Years)	3.321** [1.478]	0.796 [1.308]	1.696 [1.695]	1.566 [1.185]	0.284 [1.592]	0.577 [1.462]
Distance lender bank	-0.162 [0.692]	0.742 [0.660]	-0.396 [0.654]	-0.0489 [0.946]	0.425 [0.857]	0.961 [0.840]
Trade Credit	-1.688 [5.213]	-5.250 [4.962]	1.852 [5.109]	3.452 [3.930]	0.313 [5.831]	-6.311 [7.177]
Region FE	✓	✓	✓	✓	✓	✓
Industry (2 Digit) FE	✓	✓	✓	✓	✓	✓
Wide controls	✓	✓	✓	✓	✓	✓
R-squared	0.325	0.320	0.272	0.294	0.200	0.195
N obs.	4709	4708	4708	4708	4705	4704

Role of liquidity (I)

	(1)	(2)	(3)	(4)	(5)	(6)
	$E_{i,t}(\text{Sal}^{\$3\text{M}})$	$E_{i,t}(\text{Sal}^{\$1\text{Y}})$	$E_{i,t}(\text{Ord}^{\$})$	$E_{i,t}(\text{Emp}^{\$})$	$E_{i,t}(\text{Tan}^{\$})$	$E_{i,t}(\text{Int}^{\$})$
Deaths	-1.623** [0.810]	-1.469** [0.619]	-2.080*** [0.679]	-1.800*** [0.656]	-1.266 [1.198]	0.297 [0.870]
Essential	11.02*** [1.587]	9.137*** [1.648]	6.700*** [1.862]	4.732*** [1.598]	10.84*** [2.938]	8.709*** [2.521]
Liquidity	8.112*** [2.370]	5.275** [2.329]	8.010*** [2.468]	5.804** [2.901]	4.388 [2.962]	4.451* [2.473]
Cash Flow	-7.683 [6.728]	0.373 [4.740]	1.673 [5.358]	11.19* [5.982]	-3.093 [6.989]	-3.710 [7.455]
Tangible Assets	4.563 [4.930]	7.925** [3.360]	5.229 [3.889]	-0.113 [4.547]	2.523 [5.502]	-0.384 [4.472]
Leverage	-0.0747 [0.0647]	-0.0592 [0.0631]	0.0805* [0.0475]	0.107** [0.0526]	-0.0412 [0.0735]	-0.000812 [0.0626]
N of Lender Banks	-3.722 [2.811]	-1.386 [2.785]	-2.209 [2.830]	-2.293 [2.001]	-0.988 [3.236]	1.150 [2.590]
Lending Relationship (Years)	3.321** [1.478]	0.796 [1.308]	1.696 [1.695]	1.566 [1.185]	0.284 [1.592]	0.577 [1.462]
Distance lender bank	-0.162 [0.692]	0.742 [0.660]	-0.396 [0.654]	-0.0489 [0.946]	0.425 [0.857]	0.961 [0.840]
Trade Credit	-1.688 [5.213]	-5.250 [4.962]	1.852 [5.109]	3.452 [3.930]	0.313 [5.831]	-6.311 [7.177]
Region FE	✓	✓	✓	✓	✓	✓
Industry (2 Digit) FE	✓	✓	✓	✓	✓	✓
Wide controls	✓	✓	✓	✓	✓	✓
R-squared	0.325	0.320	0.272	0.294	0.200	0.195
N obs.	4709	4708	4708	4708	4705	4704

Role of liquidity (II)

Dependent Variable:	Credit constrained (Post COVID-19)		
	(1)	(2)	(3)
Deaths	0.0210 [0.0182]	0.0206 [0.0192]	0.0202 [0.0198]
Essential	-0.0000649 [0.0450]	0.00376 [0.0437]	0.00881 [0.0408]
Liquidity	-0.433*** [0.0979]	-0.353*** [0.0890]	-0.303*** [0.0938]
Cash Flow	-0.151*** [0.0332]	-0.152*** [0.0310]	-0.143*** [0.0290]
Leverage	0.00164* [0.000916]	0.00142 [0.000864]	0.00172** [0.000789]
Trade Credit	-0.213* [0.112]	-0.200* [0.111]	-0.245** [0.109]
Tangible Assets	-0.0770 [0.0854]	-0.0690 [0.0881]	-0.0930 [0.0872]
Size	-0.0225 [0.0153]	-0.0154 [0.0146]	-0.0265 [0.0171]
Age	0.0227 [0.0254]	0.0202 [0.0249]	0.0221 [0.0228]
Group	-0.0721 [0.0565]	-0.0803 [0.0526]	-0.0809 [0.0521]
Credit constrained		0.171*** [0.0535]	0.198*** [0.0562]
N of Lender Banks			0.105* [0.0539]
Lending Relationship (Years)			-0.0199 [0.0275]
Distance with lender bank			0.000422 [0.0169]
Region FE	✓	✓	✓
Industry (2 Digit) FE	✓	✓	✓
Lender Bank FE	X	X	✓
Wide controls	✓	✓	✓
Pseudo R-squared	0.144	0.170	0.182
N obs.	4693	4693	4613

Role of liquidity (II)

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Credit constrained		0.171*** [0.0535]	0.198*** [0.0562]
N of Lender Banks			0.105* [0.0539]
Lending Relationship (Years)			-0.0199 [0.0275]
Distance with lender bank			0.000422 [0.0169]
Region FE	✓	✓	✓
Industry (2 Digit) FE	✓	✓	✓
Lender Bank FE	X	X	✓
Wide controls	✓	✓	✓
Pseudo R-squared	0.144	0.170	0.182
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Cash Flow	-0.151*** [0.0332]	-0.152*** [0.0310]	-0.143*** [0.0290]
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Trade Credit	-0.213* [0.112]	-0.200* [0.111]	-0.245** [0.109]
Tangible Assets	-0.0770 [0.0854]	-0.0690 [0.0881]	-0.0930 [0.0872]
Size	-0.0225 [0.0153]	-0.0154 [0.0146]	-0.0265 [0.0171]
Age	0.0227 [0.0254]	0.0202 [0.0249]	0.0221 [0.0228]
Group	-0.0721 [0.0565]	-0.0803 [0.0526]	-0.0809 [0.0521]
Credit constrained		0.171*** [0.0535]	0.198*** [0.0562]
N of Lender Banks			0.105* [0.0539]
Lending Relationship (Years)			-0.0199 [0.0275]
Distance with lender bank			0.000422 [0.0169]
Region FE	✓	✓	✓
Industry (2 Digit) FE	✓	✓	✓
Lender Bank FE	X	X	✓
Wide controls	✓	✓	✓
Pseudo R-squared	0.144	0.170	0.182
N obs.	4693	4693	4613

Interacted model on sales

Model	OLS		Ordered Logit		
	$\mathbb{E}_{i,t}(\text{Sales}^g1Y)$		$\mathbb{E}_{i,t}(\text{Sales}^g1Y)$	$\mathbb{E}_{i,t}(\text{Sales}^g1Y)$	$\Delta^R \mathbb{E}_{i,t}(\text{Sales}^g1Y)$
	(1)	(2)	(3)	(4)	(5)
Deaths	-0.0587*** [0.0219]	-0.0552** [0.0214]	-0.144** [0.0694]	-0.138** [0.0703]	-0.146** [0.0681]
Essential	0.385*** [0.0581]	0.374*** [0.0617]	1.041*** [0.163]	1.023*** [0.175]	1.050*** [0.170]
Credit constrained	-0.347*** [0.0922]	-0.327*** [0.0891]	-1.448*** [0.343]	-1.391*** [0.332]	-0.956*** [0.226]
Constrained \times Deaths	0.0818 [0.0600]	0.0663 [0.0556]	0.209 [0.211]	0.154 [0.211]	0.195 [0.177]
Constrained \times Essential	0.155 [0.143]	0.153 [0.140]	0.925** [0.442]	0.906** [0.441]	0.434 [0.382]
Region FE	✓	✓	✓	✓	✓
Industry (2 Digit) FE	✓	✓	✓	✓	✓
Wide Controls	X	✓	X	✓	✓
R-squared (Pseudo R2)	0.259	0.272	(0.147)	(0.155)	(0.245)
N obs.	5008	5008	5008	5008	5008

Return

Interacted model on prices

Dependent variable:	$\mathbb{E}_{i,t}(P^g)$	$\mathbb{E}_{i,t}(P^g)$	$\Delta^R \mathbb{E}_{i,t}(P^g)$
	(1)	(2)	(3)
Deaths	2.701*** [0.957]	2.518*** [0.863]	2.600*** [0.847]
Essential	-0.980 [2.677]	-1.390 [2.456]	-1.727 [2.579]
Credit constrained	11.27** [4.662]	10.37** [4.861]	9.832* [5.297]
Constrained \times Deaths	-0.718 [1.693]	-0.109 [1.625]	2.020 [1.512]
Constrained \times Essential	-9.835** [4.002]	-9.204** [4.070]	-9.381* [4.889]
$\mathbb{E}_{i,t-1}(P^g)$	0.121 [0.0835]	0.138 [0.0893]	
Region FE	✓	✓	✓
Industry (2 Digit) FE	✓	✓	✓
Wide Controls	X	✓	✓
R-squared	0.192	0.202	0.216
N obs.	4886	4886	4886

Interacted model on other continuous variables

	(1)	(2)	(3)	(4)	(5)	(6)
	$\mathbb{E}_{i,t}(\text{Sal}^g 3M)$	$\mathbb{E}_{i,t}(\text{Sal}^g 1Y)$	$\mathbb{E}_{i,t}(\text{Ord}^g)$	$\mathbb{E}_{i,t}(\text{Emp}^g)$	$\mathbb{E}_{i,t}(\text{Tan}^g)$	$\mathbb{E}_{i,t}(\text{Int}^g)$
Deaths	-0.581 [0.573]	-1.744*** [0.544]	-1.765*** [0.581]	-1.448* [0.809]	-1.727 [1.147]	-0.227 [0.696]
Essential	9.459*** [1.765]	7.895*** [1.613]	5.815*** [1.754]	5.345*** [1.737]	8.505*** [3.053]	6.908*** [2.454]
Credit constrained	-10.67* [5.424]	-12.10*** [4.447]	-12.80** [4.972]	-3.471 [3.947]	-13.96** [6.428]	-12.75** [5.712]
Constrained \times Deaths	-8.954*** [2.987]	0.240 [1.981]	-1.148 [2.268]	-1.056 [2.850]	1.593 [2.761]	0.00685 [2.292]
Constrained \times Essential	5.227 [6.856]	7.092 [5.389]	6.211 [5.862]	-6.153 [5.386]	13.67** [5.530]	12.60** [5.272]
Region FE	✓	✓	✓	✓	✓	✓
Industry (2 Digit) FE	✓	✓	✓	✓	✓	✓
Wide Controls	✓	✓	✓	✓	✓	✓
R-squared	0.333	0.312	0.275	0.265	0.206	0.203
N obs.	5008	5007	5007	5007	5004	5003

Return