

# Unmasking the Impact of COVID-19 on Businesses: Firm Level Evidence from Across the World

Arti Grover (Joint with Marie Christine Apedo-Amah, Besart Avdiu, Xavier Cirera, Marcio Cruz, Elwyn Davies, Leonardo Iacovone, Umut Kilinc, Denis Medvedev, Franklin Maduko, Stavros Poupakis, Jesica Torres, and Trang Thu Tran)

Firms, Entrepreneurship and Innovation Global Unit

December 2020

- Data description
- Assessing impact of crisis
  - ▶ Sales
  - ▶ Employment
- Liquidity and survival
- Expectations and uncertainty
- Firms' responses
- Policy: access and potential role
- [▶ Summary of key messages](#)

# Motivation

## Very strong shock...and very heterogeneous

- Impacts are likely to be very heterogeneous within sectors between firms
- Limited evidence (scarce data) for developing countries



# Data Description

This presentation exploits data from 51 countries covering all regions around the world.

- 30 countries in the Business Pulse Survey
- 21 countries from follow-up from Enterprise Survey
- Questionnaire designed in collaboration between the WB (FCI, DEC, POV, MTI) and outside WBG (IGC, IPA, Stanford U., Chicago U.)
- Data collected in collaboration with National Statistical Agencies
- Joint effort with IFC, POV, and MTI
- Significant effort to harmonize country-level data into global dataset

Table 1: Countries included in the Global BPS database.

Region	Countries
EAP	IDN, KHM, MNG, PHL, VNM
ECA	ALB, ARM, BGR, CYP, GEO, GRC, ITA, MDA, POL, ROU, RUS, SVN, TUR, XKX
LAC	BRA (Ceará and Sao Paulo), COL, GTM, HND, NIC, SLV
MNA	DZA, JOR, TUN
SAR	AFG, BGD (WB and IFC), IND, NPL, PAK, LKA
SSA	CIV, GAB, GHA, GIN, KEN, LBR, MDG, MLI, NER, SDN, SEN, TCD, TGO, TZA, ZAF, ZMB, ZWE

▶ Description of the survey

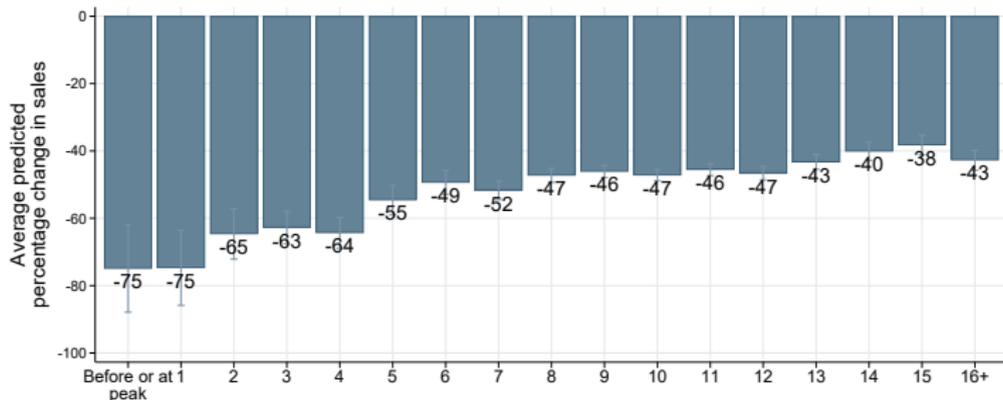


# Impact of COVID-19 shock

## Deep and persistent drop in sales

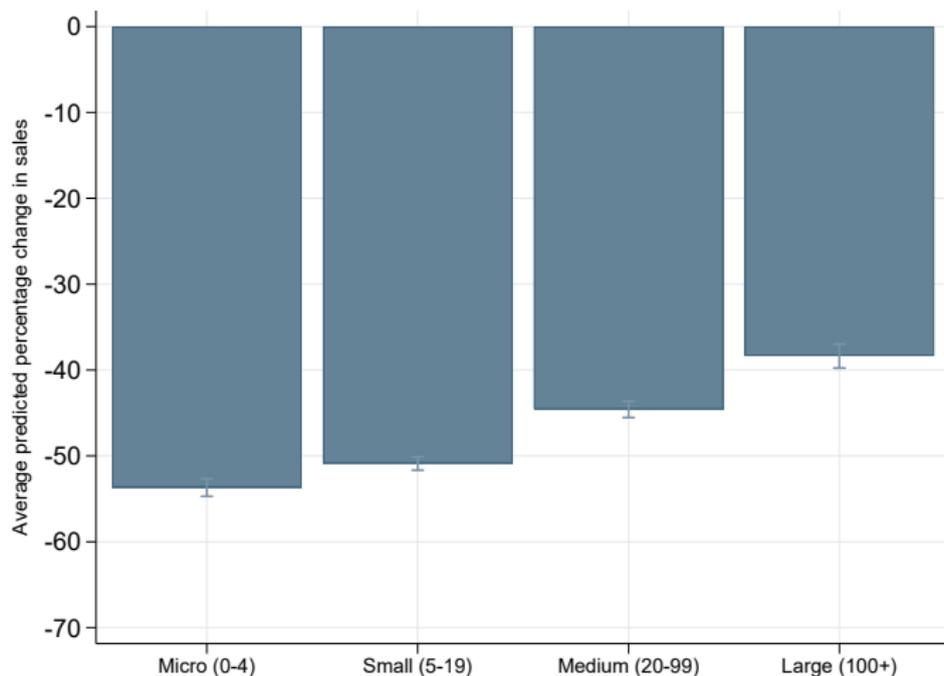
While the biggest impact of the COVID shock is around the peak of the crisis, the drop in sales is persistently large even 16 weeks later.

Figure 1: Average predicted percentage change in sales.\*



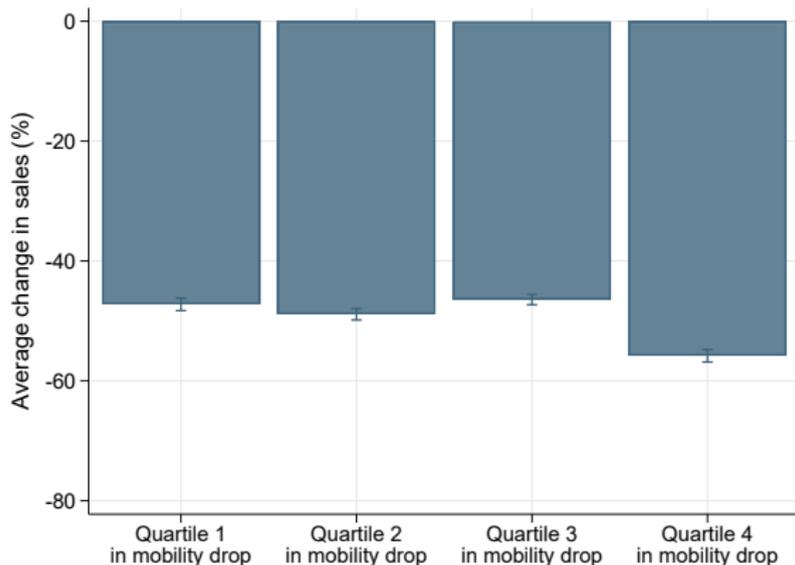
## Smaller firms have been disproportionately affected

Figure 2: Average predicted percentage change in sales.\*



Businesses in countries where the shock was more severe tend to experience larger drops in sales.

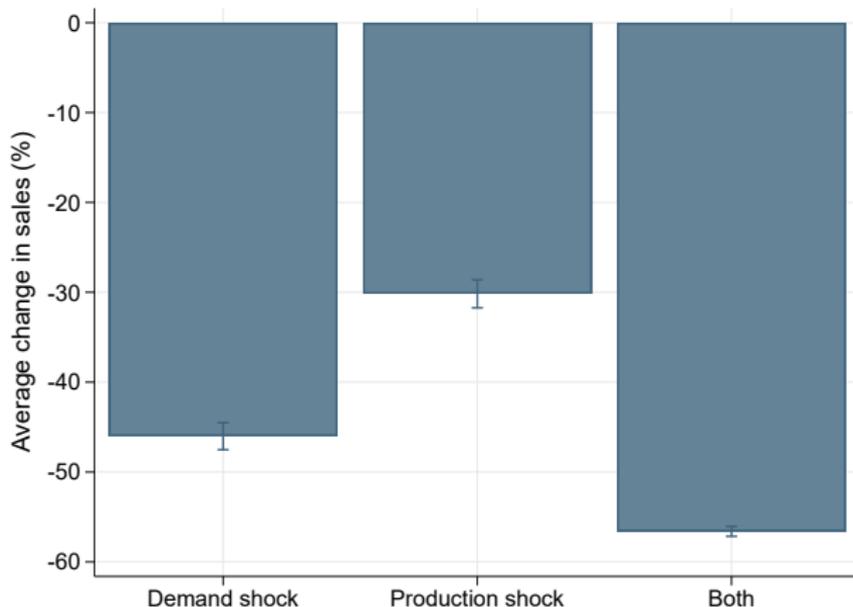
Figure 3: Average percentage change in sales (drop in mobility at the peak of the crisis; average from linear prediction).\*



\* Countries in the sample are divided into quartiles based on the magnitude of the drop in mobility at the peak of the crisis. The linear prediction controls also for size, subsector, and weeks before/after peak of the crisis.

The drop in sales is significantly higher in businesses that suffered both supply and demand shocks.

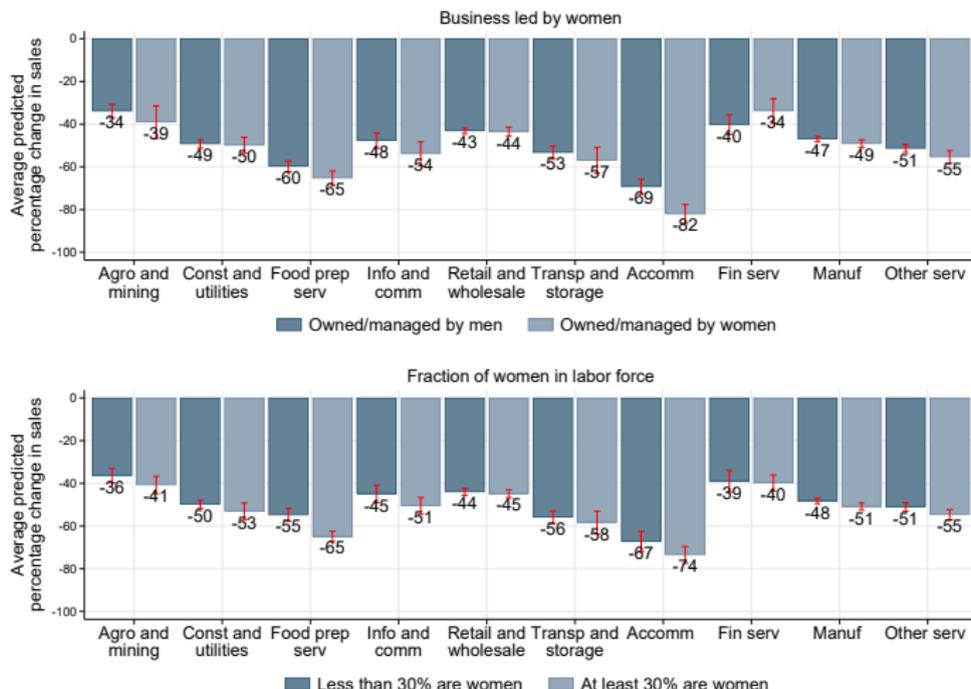
Figure 4: Average percentage change in sales across channels affecting operations.\*



\* Countries in the sample are divided into groups depending on whether they report suffering a reduction in demand, supply shocks (reduction in inputs or in hours of operation), or both. The linear prediction controls also for country, size, subsector, and weeks before/after peak of the crisis.

## Businesses led by women or with an above-average fraction of women employees have borne disproportionate consequences

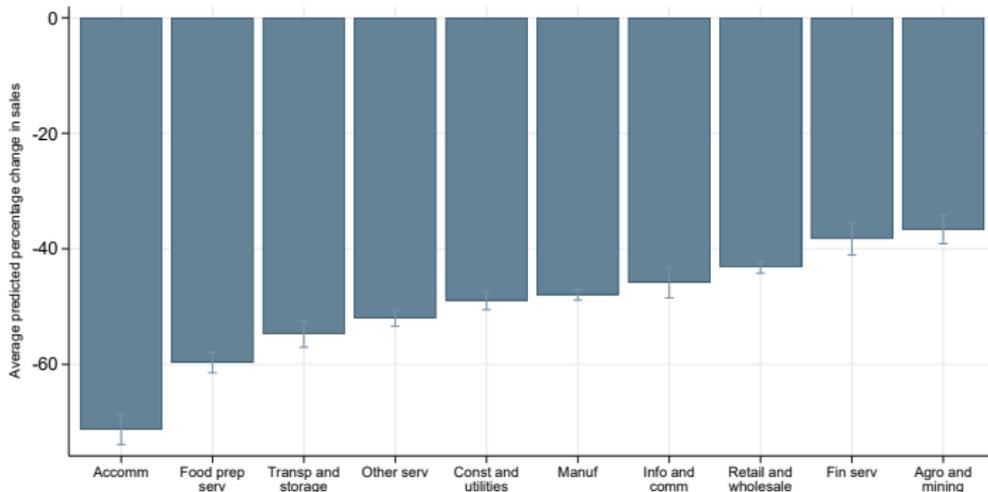
Figure 5: Average predicted percentage change in sales relative to same period of 2019.



Predicted mean from a linear regression conditioning on dummies for size, country, and weeks before/after the peak of the crisis. The regression interacts size and sector with the dummy for whether the owner is a woman in the top panel, and the dummy for whether the fraction of women in the labor force exceeds 30% in the bottom panel. Computations use weights equal to the inverse of the number of observations in each country.

The shock to accommodation and food preparation services is larger than the shock to financial services and agro.

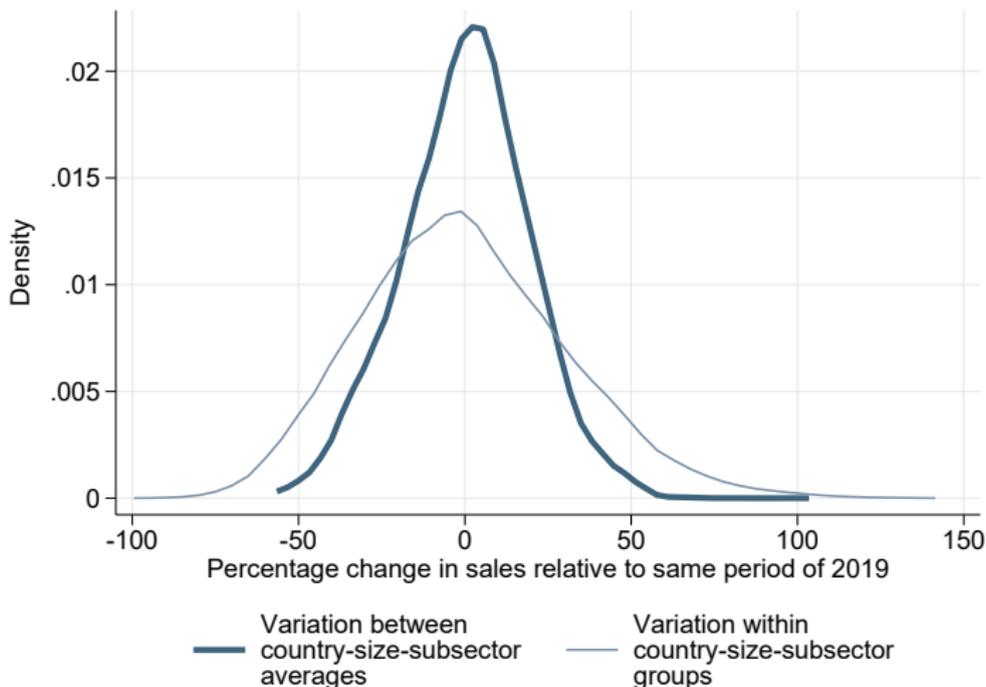
Figure 6: Average predicted percentage change in sales.\*



\* Average predicted mean conditions on sector and comes from a linear regression controlling for country, size, subsector, and weeks before and after peak of the mobility crisis.

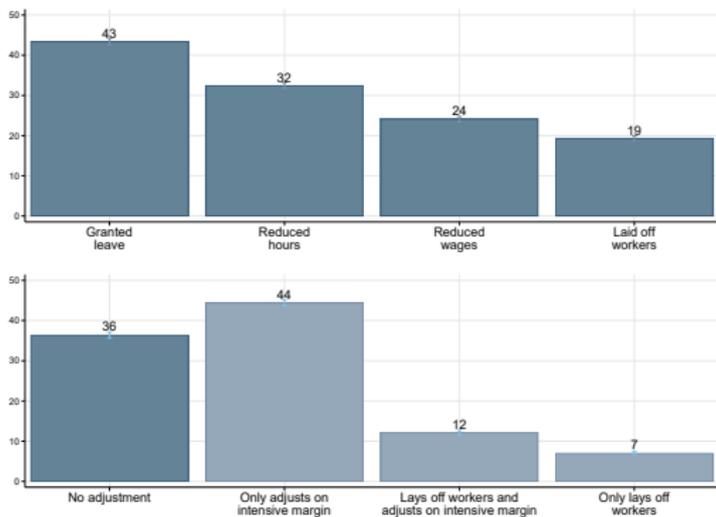
Firm-level heterogeneity matters a great deal: There is significant variation in the percentage change in sales that is not explained by the interaction of country, size, and sector effects.

Figure 7: Distribution of the percentage change in sales. Between firms vs between country-size-subsectors.\*



## For the moment firms are hanging on to workers

Figure 8: Fraction of businesses in each margin of adjustment in employment.\*



- Adjustments along the intensive margin (granting leaves of absence or adjusting wages or hours worked) are the most common margin of employment adjustment...firing workers is the least commonly used adjustment in the short term.
- More than 2/3 of businesses adjusted their employment levels - either on the intensive (48%), the extensive and intensive margin (14%), or only the extensive margin (6%).

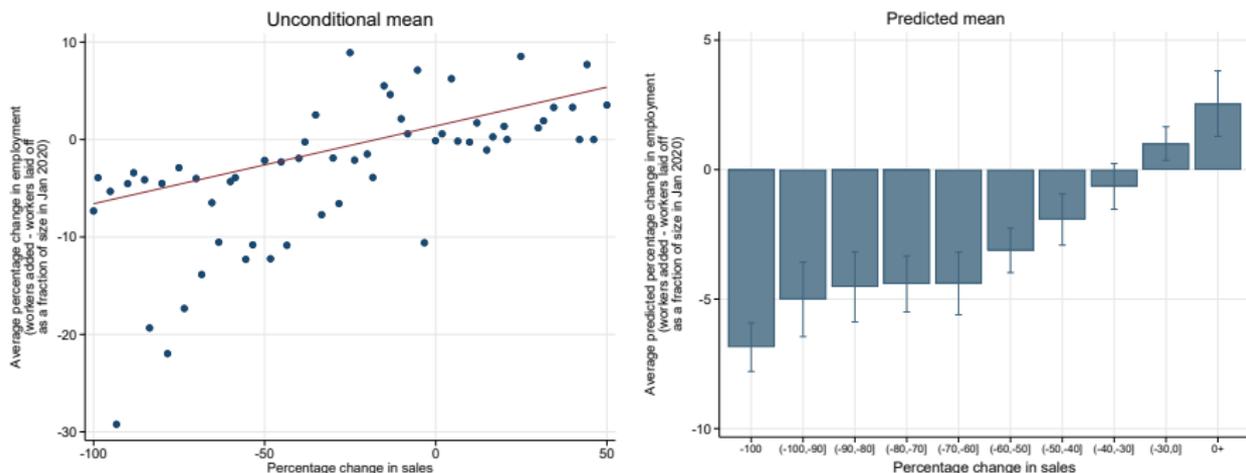
\* Unconditional mean. Businesses can adjust on one or more margins at the same time. Leave of absence includes both paid and unpaid.



Firms that experienced larger sales drops also experienced a larger reduction in employment.

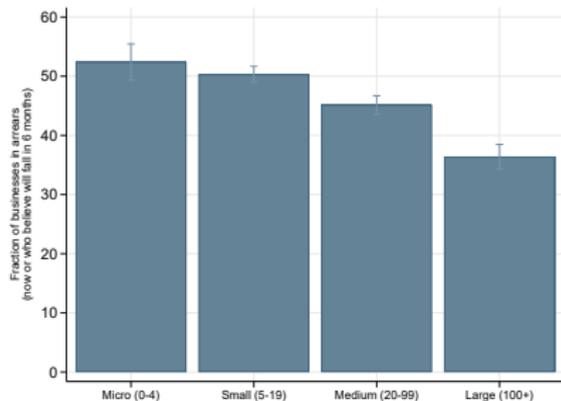
- The estimated elasticity is 0.076\*.

Figure 9: Average percentage change in employment.\*

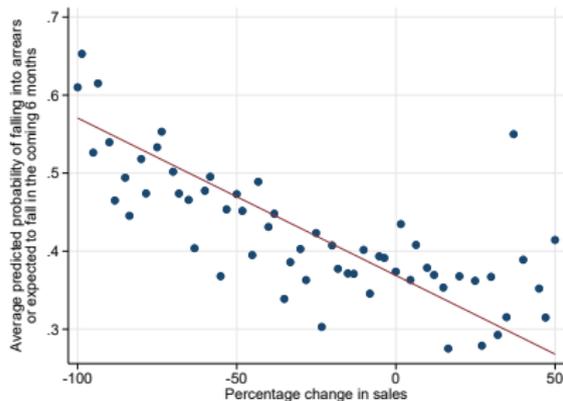


# Liquidity and survival

## Probability of falling into arrears



(a) Differences across businesses with different sizes



(b) Correlation between falling into arrears and drop in sales

# Expectations and uncertainty

## Expectations and uncertainty are correlated with the severity of the shock

- Uncertainty is very high - nearly 5 times higher than the uncertainty recorded in the US in June/July which was nearly 4 times higher than historical uncertainty pre-COVID
- Businesses that experienced smaller shocks to their sales are more optimistic and less uncertain about the future.

Figure 11: Average expectations and uncertainty about the future.\*

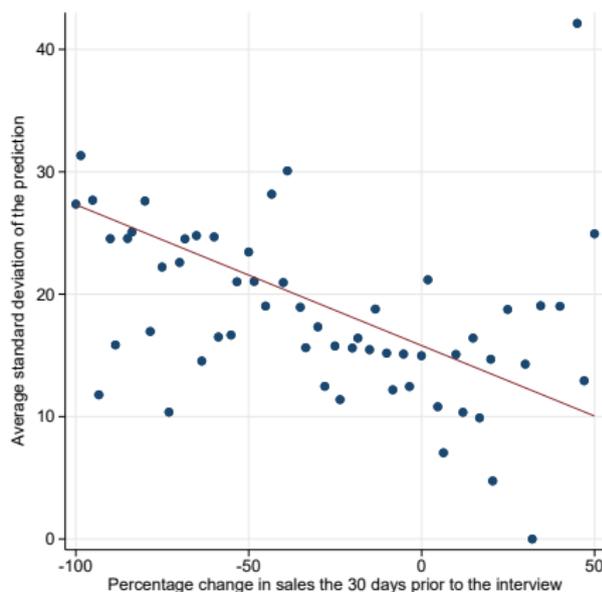
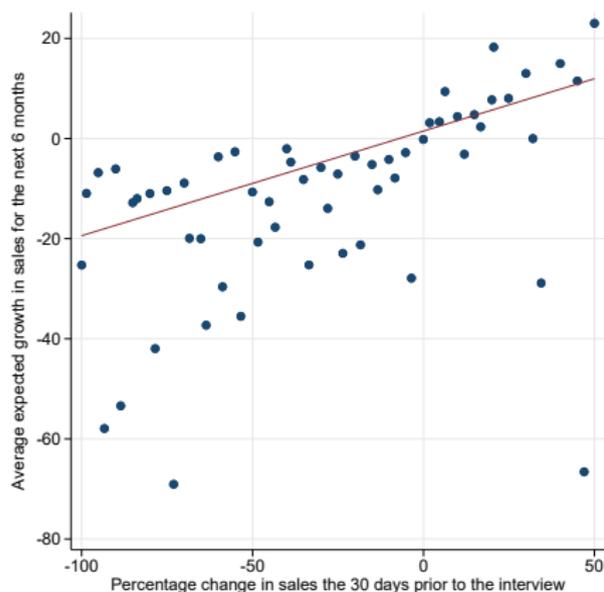
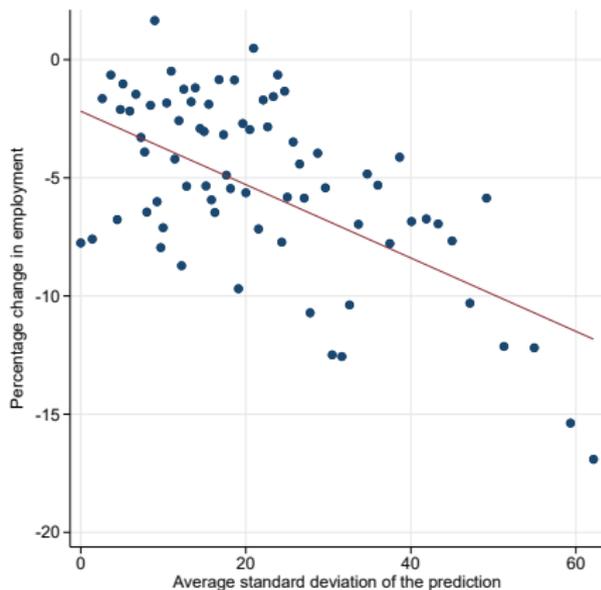
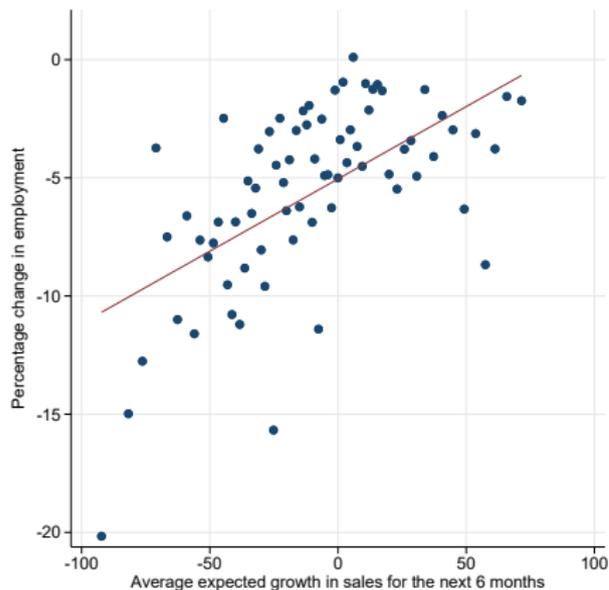


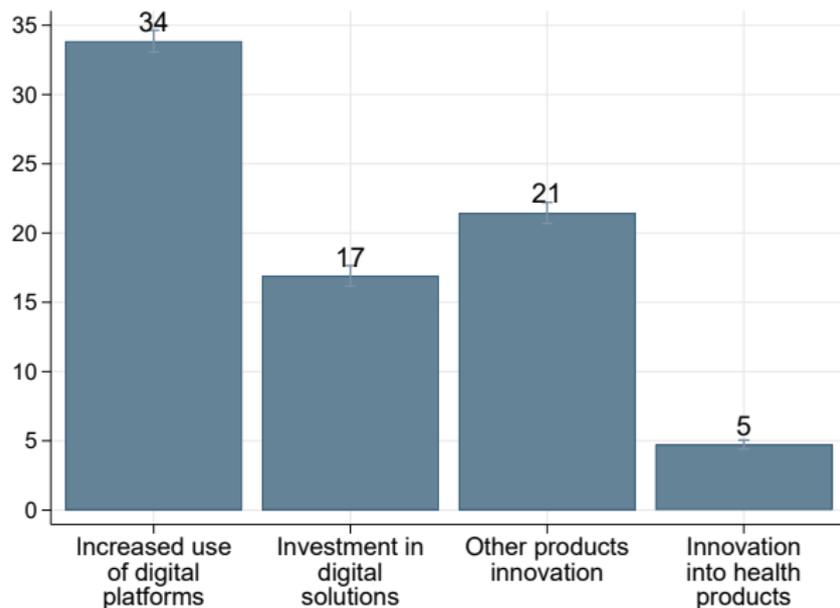
Figure 12: Average percentage change in employment.\*



# How are firms responding?

Increasing the use of digital platforms is the most common of business responses... more than twice more likely than product changes and investment in digital solutions.

Figure 13: Fraction of businesses across responses to the shock.\*



\* Unconditional mean.

- Firm responses appear “bundled” across various actions

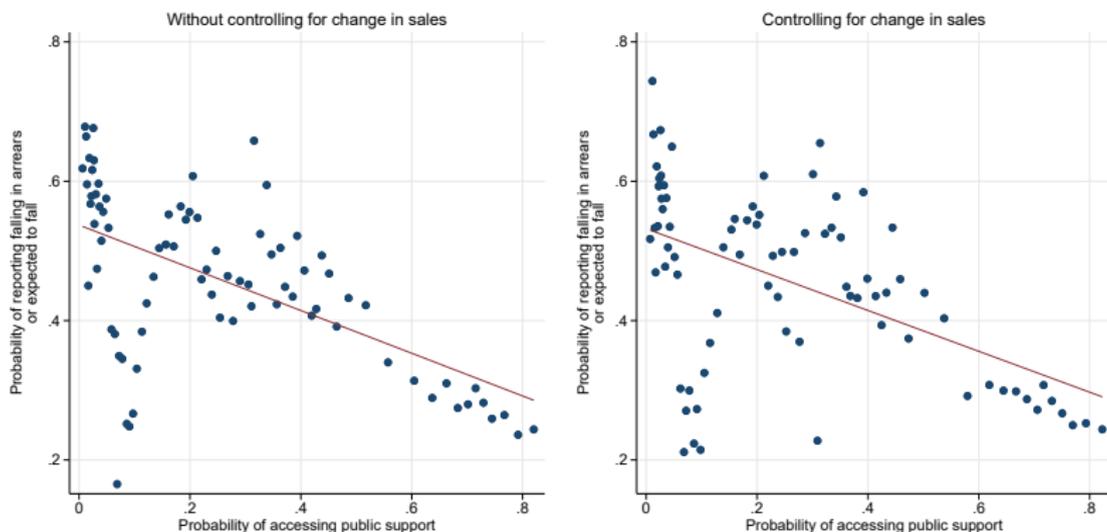


# Public policies

## Public support can be very important

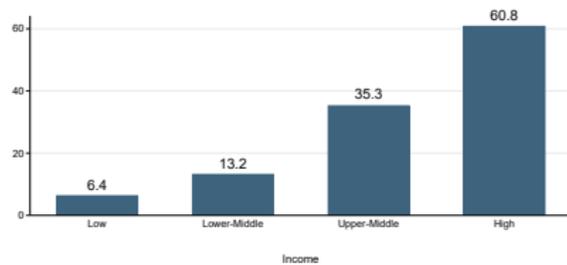
Businesses more likely to report access to public support are less likely to expect falling in arrears

Figure 14: Average predicted probability of reporting falling in arrears or expecting to fall in arrears and access to public support.\*

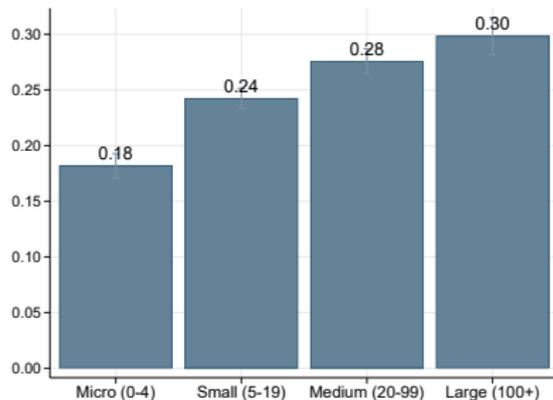


\* Predicted probabilities from Probits controlling for country, size, subsector, and weeks before and after the peak of the mobility shock. The right panel controls also for the change in sales in the Probit for arrears.

## Public support has been limited, especially in low-income countries and among smaller firms



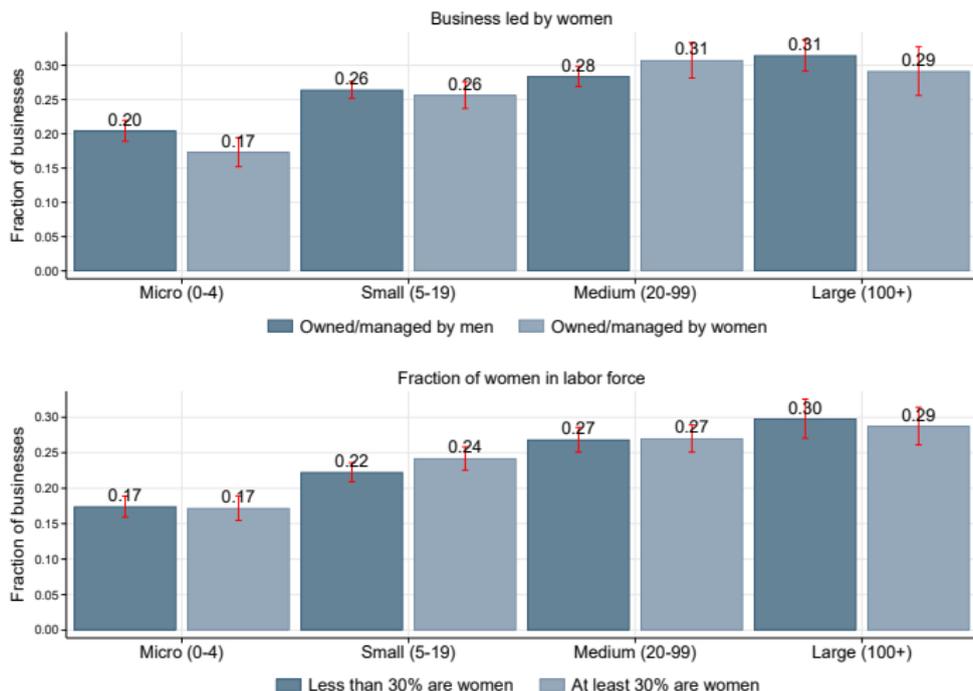
(a) Differences across countries



(b) Differences across firms size

Micro-businesses led by women are less likely to report access to public support.

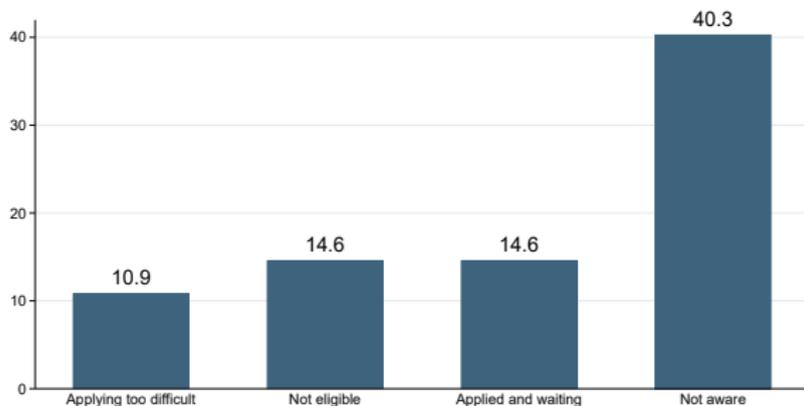
Figure 16: Average predicted probability of reporting access to public support.



Predicted probability from a Probit conditioning on dummies for size, sector, country, and weeks before/after the peak of the crisis. The estimation interacts size and sector with the dummy for whether the owner is a woman, or the dummy for whether the fraction of women in the labor force exceeds 30%. Computations use weights equal to the inverse of the number of observations in each country.

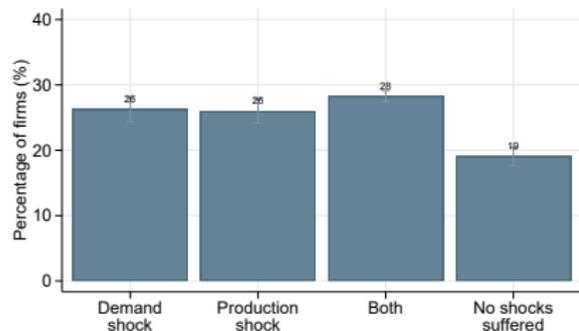
The main reason why businesses have not received public support is lack of awareness.

Figure 17: Fraction of businesses across reasons for lack of participation in public programs.\*

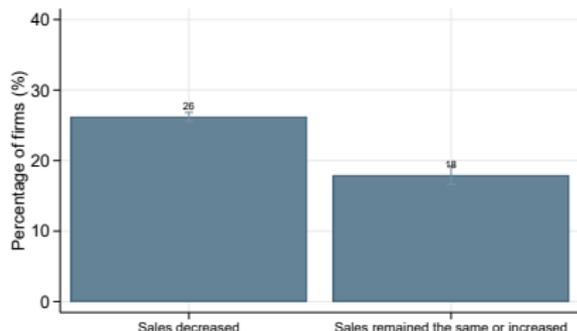


\* Unconditional mean.

Figure 18: Access to public support by type of shock received



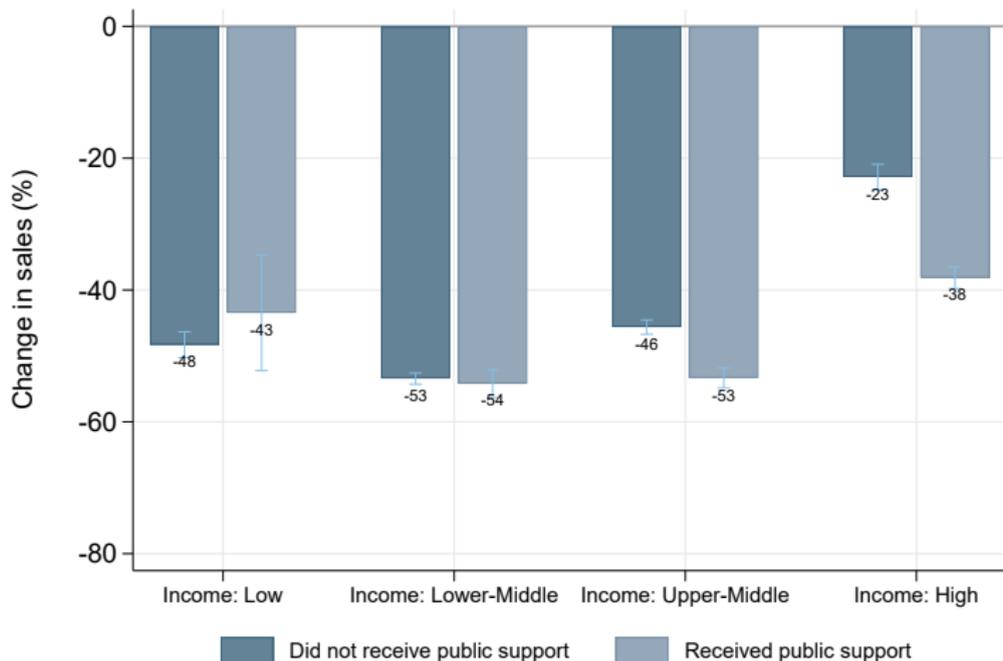
Prediction after probit regression on accessing public support controlling for firm size, subsector, country, weeks after and type of shock suffered fixed effects



Prediction after probit regression on accessing public support controlling for firm size, subsector, country, weeks after pe and type of shock suffered fixed effects

...driven mainly by lower income countries

Figure 19: Correlation between change in sales and access to public support. Differences across income groups.



Change in sales. Estimates are based on a linear regression controlling for firm size, subsector, weeks after peak fixed effects and income classification interacted with accessing support



# Summary of key messages

- ① COVID-19 shock impact widespread and persistent
  - ▶ Negative impact on sales (-40%) even 12-16 weeks after the peak of the shock
- ② Country-factor matters as well as firm-heterogeneity
  - ▶ Severity of crisis, country policy/interventions, and closeness to the peak of the crisis
- ③ Employment adjustments mostly along intensive margin (i.e. reduction in hours, wages, leave, etc.)
  - ▶ Elasticity of employment to sales equal to .076
  - ▶ 10% sales drop is associated with a 0.8% reduction in employment
- ④ Increasing use of digital platforms is the most common business response to the shock
  - ▶ Only 30% of businesses
  - ▶ Smaller firms less likely to respond
- ⑤ Uncertainty is very large
  - ▶ 4-5 times than in US
  - ▶ Correlated with sales drop
  - ▶ Correlated with workers layoffs
- ⑥ Public support is key but too limited and possibly mis-targeted
  - ▶ Less than 22% of firms having received support
  - ▶ Less support among smaller firms
  - ▶ Less support in poorer countries
  - ▶ Main constraint: lack of awareness

Thanks for your attention!

# Appendix

- 1 **Deep and persistent shock.** COVID-19 shock was widespread with 4/5 of firms closed in the short-term and the negative impact on sales was severe and persistent
- 2 **Firm level heterogeneity matter.** Effect of the crisis differ across countries, sector and business size, but micro-level heterogeneity is even more important
- 3 **Firms holding on to workers in short term.** The employment adjustment has operated mostly along intensive margin (i.e. reduction in hours, wages, leave, etc.) and there is a clear positive relationship between the effect of the shock (i.e. drop in sales) and employment responses: on average 50% sales drop is associated with a 4% reduction in employment
- 4 **Digital adoption has been limited.** Increasing use of digital platforms is the most common business response to the shock...but only 30% of businesses have done so and smaller ones are significantly less likely to have made any adjustment. Additionally, there is evidence of complementarities across different firms' responses (i.e. digital solutions and product innovation)
- 5 **Uncertainty weighs on recovery prospects.** There is great uncertainty about the future, especially among firms that have experienced larger drop in sales. Crucially, more uncertainty is correlated with more workers being laid off
- 6 **Policy support can help but is not reaching enough firms.** Policy support helps firms to avoid falling into arrears, and reduces uncertainty but it is reaching a minority of firms, too few especially in poorer countries.

COVID-19 shocks operate through many channels, and some shocks could severely hit specific sectors.

Figure 20: COVID-19 shocks on the private sector.



### Lockdown effects

Public health measures require non-essential businesses to close

Temporary shock, targeting non-essential businesses, mostly in **retail, hotels/restaurants** (tourism) and **personal services**.



### Demand shocks

Economic downturn drives down demand domestically and abroad

Broad-based shock. Will especially hit firms producing **durables, apparel/textiles** and those **reliant on export** (manufacturing & services – e.g. tourism).



### Supply shocks

Decline in labor and intermediate inputs, global value chains disrupted

E.g., firms that **rely on imports** are affected.



### Financial shocks

Opportunities for finance becoming further constrained

Deterioration in availability of credit while demand increases will affect access to finance



### Uncertainty

Uncertainty is driving down investment and innovation

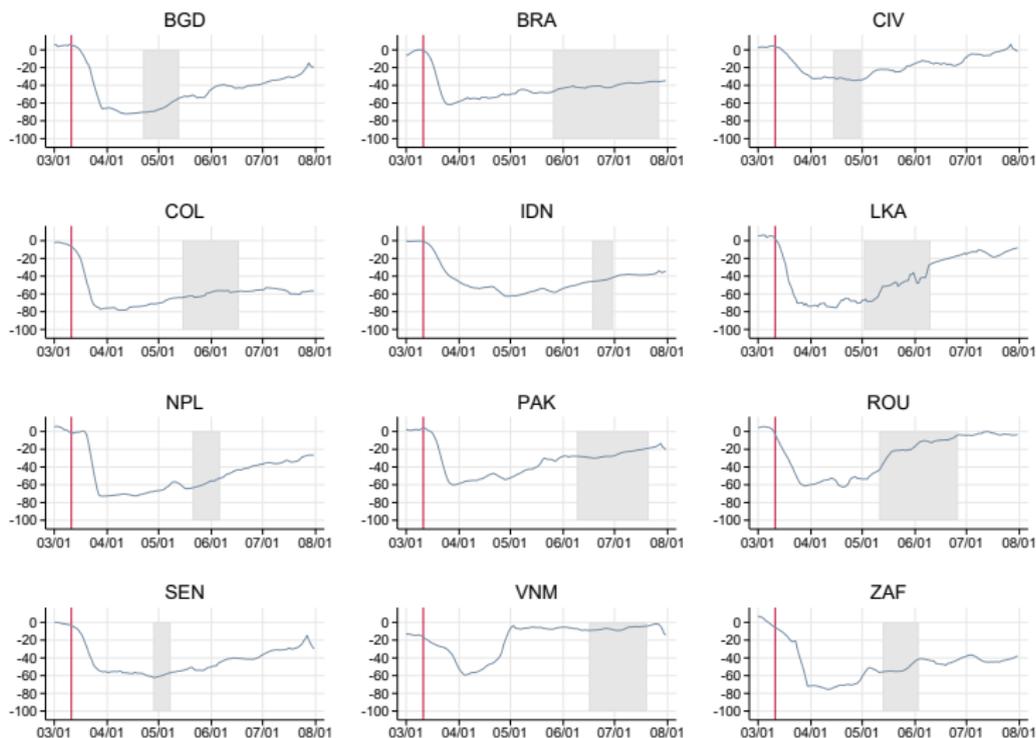
◀ Back



The COV-BPS is a rapid survey designed to understand the micro-economic impact on businesses.

- **Shock on sales**
- **Employment adjustments:** hire workers, dismissals, granting leave of absence with/without pay, reduce wages, reduce hours
- **Channels:** decrease in operating hours, decrease in demand, decrease in cash flow, decrease in availability of finance, decrease in availability of intermediate goods
- **Prospects for survival:** weeks that the business can remain open in current circumstances, days that can cover costs with cash available
- **Expectations and uncertainty:** sales growth, employment growth (Altig et al.)
- **Responses to the shock:** use of digital solutions, investments in digital solutions, product innovation
- **Demand for policy:** perceived needs, access to programs

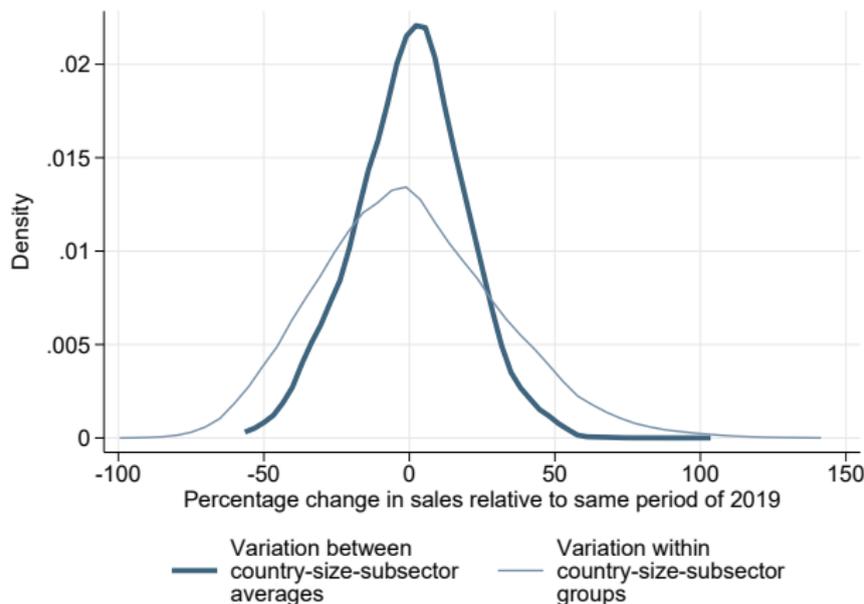
Figure 21: Interview period and Google mobility trends



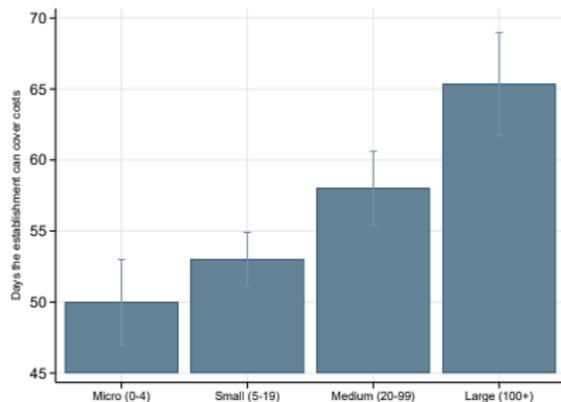
## Firm-level heterogeneity matters a great deal to explain sales change

Differences between firms within same country-size-sector group are larger than differences between different country-size-sector groups

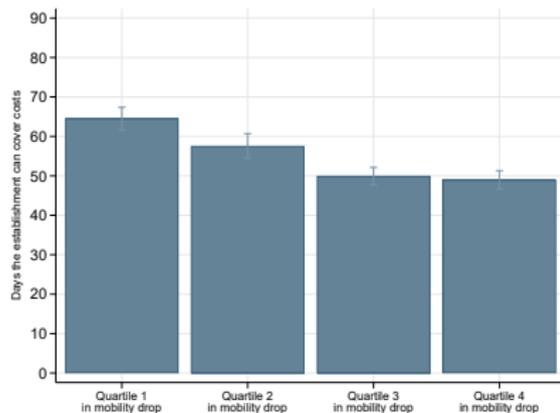
Figure 22: Distribution of the percentage change in sales. Differences between firms vs between country-size-subsectors.\*



## Available liquidity



(a) Differences across businesses with different sizes



(b) Differences across countries based on severity of the shock

## Businesses that report access to public support are more optimistic and less uncertain about the future

Figure 24: Average predicted probability of reporting access to public support and expectations about the future.\*

