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Firm Recovery during COVID-19

Six Stylized Facts

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Abstract

Building on prior work that documented the impact of COVID-19 on firms in developing countries using the first wave of Business Pulse Surveys, this paper presents a new set of stylized facts on firm recovery, covering 65,000 observations in 38 countries. This paper suggests that: *One*, since the outset of the pandemic, some aspects of business performance such as sales show signs of partial recovery. *Two*, other aspects remain challenging, including persistently high uncertainty and financial fragility. *Three*, recovery is heterogeneous across firms and more sensitive to firm-level attributes such as size, sector, and initial productivity than to country-level differences in the severity of the initial shock. In particular, larger and more productive firms are recovering faster, with implications for competition policy and allocative efficiency. *Four*, the decline in jobs has been steeper during the initial shock than the expansion in employment during recovery, raising the risk of a "jobless" recovery pattern. *Five*, the diffusion of digital technology and product innovation accelerated during the pandemic but did so unevenly, further widening gaps between small and large firms. *Six*, businesses now have more access to policy support, but poorer countries continue to lag behind and appropriate targeting of firms remains a challenge.

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Firm Recovery during COVID-19: Six Stylized Facts*

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1. Introduction

The COVID-19 pandemic has led to severe economic disruptions in the operations of businesses around the world. A prior work of the World Bank documents the impact of COVID-19 on firms in developing countries using the first wave of the Business Pulse Surveys (BPS) data collected during May-August 2020 in 51 countries covering more than 100,000 firms (Apedo-Amah et al., 2020). The analysis of this data found that the COVID-19 pandemic generated an average 49% drop in sales relative to 2019. This decline in sales was not only large but also persistent, as the drop in sales continued to be more than 40% even 4 months after the peak of the crisis (defined as the sharpest drop in mobility). During the May-August 2020 period, firms had been mostly holding on to workers, with only about a fifth of businesses resorting to lay-offs. However, most businesses (64%) made some adjustments to their payroll primarily by reducing hours, wages, or granting leave to workers. Financial risks driven by defaults and bankruptcies were large, with more than 55% of micro, small, and medium enterprises falling into arrears or expecting to be in arrears within the next 6 months from the time of the first wave of BPS. With the physical distancing norms in place, firms were found to be increasing the use of digital technology. About 34% of businesses started to use or increased the use of digital platforms and 16.5% increased their investment in digital solutions (Apedo-Amah et al., 2020).

The public health measures (e.g., physical distancing, strict lockdown of non-essential businesses) that dampened business operations in the first wave were largely retracted by October 2020 - March 2021, allowing activity to recover. Although business is not as usual yet and we are still in the midst of the crisis with more transmissible and virulent strains of the virus spreading (World Bank, 2021), this paper attempts to uncover the possible patterns of recovery by building on two waves of BPS data from 38 countries, covering 65,000 observations comprising 25,000 panel firms. Economists have long argued on the possible shapes of the recovery from the past crisis and including the current one. For instance, Sheiner and Yilla (2020) describe the possible shapes of the recovery from the current pandemic: 'Z', 'V', 'U','W', 'L' -shaped, and the Nike Swoosh.[1] While it is too early to confirm the shape of the overall economic recovery, our analysis suggests that the business recovery between May-August 2020 and October 2020 - March 2021 may take the form of either a 'U'-shaped or a Nike swoosh. Once more rounds of BPS data become available, we could possibly see a 'W'-shaped recovery.

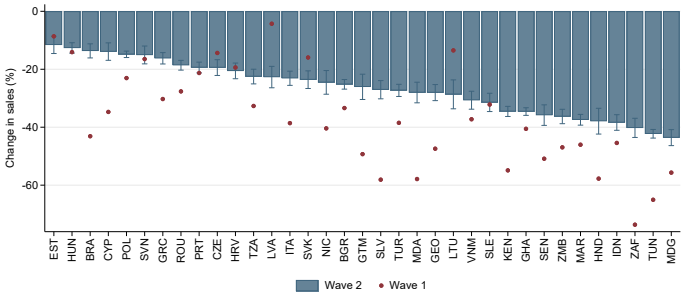
Beyond the shape of the recovery, our analysis provides the most comprehensive assessment of several aspects of the recovery trajectory for firms in developing countries. Our cross-country analysis suggests a positive recovery with some catch up across countries in the second wave of BPS data (see Appendix Figure B1). Despite this positive recovery, heterogeneity across countries is still very large; with enormous differences between some countries in Europe and Latin America, and some countries in Africa and South Asia (See Figure 1, panel a). Sales in wave 2 range between

[1] On March 23, 2020 Angel Gurria, the OECD's secretary-general, warned advanced economies that "… Right now we know it's not going to be a 'V'. It's going to be more in the best of cases like a 'U' with a long trench in the bottom before it gets to the recovery period..."

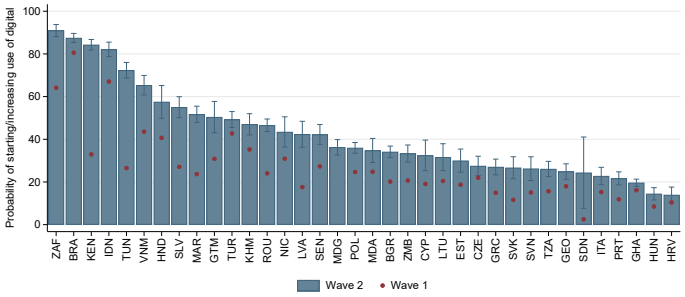
only 11% below 2019 levels in Cyprus to 44% below in Zambia. [2] Furthermore, there is wide adjustment response (probability of using or increasing the use of digital platforms, Figure 1, panel b). Our results suggest a potential widening digital divide. Differences in the share of firms using or increasing the use of digital tools are very large, and unlikely to be explained by a possible pre-pandemic large use of digital tools. Lower rates of digitalization in response to the pandemic among developing countries may reflect bottlenecks in the "analog complements", that is, regulations and infrastructure which constrains the adoption of digital technologies (Hallward-Driemeier et al., 2020).

Figure 1: Cross-country differences in COVID-19 impact and firm responses

(a) Change in monthly sales by country relative to 2019. Wave 2.



(b) Increased use of digital tech



Such cross-country differences imply that firm-level attributes could play a critical role in explaining the variation in recovery. The pandemic, therefore, constitutes a laboratory to study such heterogeneity in the behavior and recovery of firms and our data provides such an opportunity in a cross-country context. To this end, we document the following six stylized facts on the evolution of business recovery across a large sample of developing countries.

One, months after the pandemic, some aspects of business performance show signs of recovery, albeit partial, thereby suggestive of a possible U-shaped pattern. Compared to wave 1, a relatively larger share of businesses are operating and firm sales are improving. However, sales are still 28% below the pre-pandemic levels. This has uplifted business sentiments and firms are also optimistic about future sales relative to their outlook during wave 1.

[2] Accordingly, there are also significant differences in the probability of falling into arrears across countries, as shown in Appendix Figure B2.

Two, business recovery is not apparent in all spheres, that is, large uncertainty still persists and firms remain financially fragile. Uncertainty among businesses in the second wave is still as high as in the first wave, which may have long-lasting impact on the operations and investments of firms.[3] Furthermore, firms' reported probability of falling into arrears in the second wave is not any lower relative to wave 1. With an uncertain future and financial fragility, firms are continuing to lay-off workers at a similar rate as earlier in the pandemic, although fewer businesses are reducing wages and hours worked.

Three, the recovery among firms is heterogeneous and more sensitive to firm-level attributes rather than to country-level differences in the severity of the initial shock. While there has been some convergence in the impact of the shock across countries in wave 2, there is still large variation within countries by firm attributes (e.g., size, sector, initial productivity, and indebtedness). This heterogeneity across firms widened as the cross-country differences in mobility disruptions narrowed by wave 2. For instance, the gap in performance between medium/large firms versus small and micro firms has increased; while other sectors are converging, hospitality and other services continue to be the most hurt; more productive firms pre-pandemic are having a faster recovery, and a lower probability of falling into arrears. In this sense, the pandemic may shift resources towards such firms and lead to better allocative efficiency.

Four, preliminary evidence is suggestive of cyclical asymmetry in employment recovery such that the decline in jobs is steeper during the recessionary phase than the expansion in employment during the recovery phase. Thus, the evolution to normalcy from the current pandemic may be characterized by "jobless" recovery. These differences are starker in firms and sectors where employer-employee matches are difficult to establish (e.g., larger firms, those in knowledge intensive services). Given that firms continue to remain uncertain about the future even in wave 2, they remain cautious in responding to changes in business conditions and hence are slow to hire back employees. Surprisingly, the pandemic induced digitalization has mostly not been labor-substituting (except in retail) such that digitally enabled firms are less volatile. Digitally enabled firms exhibit lower elasticity of change in employment with respect to sales change during recessionary and recovery phases.

Five, the persistence of the pandemic and the induced mobility disruptions accelerated digital technology diffusion and product innovation but did so in an uneven manner. The probability of using digital platforms and engaging in product innovation will likely enhance the capabilities of firms adjusting through these channels. Nevertheless, firms' motivation and decision to digitalize have still been limited by the high uncertainty of the future. More productive firms, however, have a higher probability of adopting digital technologies and to engage in product innovation. In this regard, although micro firms (typically low productive) also stepped up digital adoption, the gap in digitalization and product innovation widened by firm size, market concentration has likely heightened and may contribute to the widening differences between the performance of micro and

[3] Advanced economies are not any different. For instance, in the United States, uncertainty has surged to levels above those observed during the global financial crisis in 2008-09 (Leduc and Liu, 2020).

small versus medium and larger firms.

Six, as the COVID-19 pandemic evolved, governments have expanded the support for businesses. Interestingly, the share of supported firms increased the most in countries that suffered the largest severe drop in mobility. Countries in the low and lower middle income group, as well as those with higher pre-pandemic public debt have been more constrained in their ability to offer support to firms.

Our work makes several contributions to the burgeoning literature studying the impact of the pandemic on firms. *First*, while the existing studies examine the direct disruptive effects of the pandemic primarily in advanced countries (e.g., Bloom et al., 2021; OECD, 2021; Bartik et al., 2020), our work provides extensive evidence for a large sample of firms in developing countries. *Second*, barring a few exceptions, most evidence so far has been focused on a cross-section of firms (e.g., Borino et al., 2021; Apedo-Amah et al., 2020). Our work provides a detailed account of the recovery patterns across a range of firm outcomes using two rounds of BPS data with nearly 25,000 panel firms, filling a critical knowledge gap on the recovery process. *Three*, our work provides a timely assessment on the heterogeneity of recovery by firm and country attributes and the gaps in adjustment response among developing countries. This could potentially help inform the type of firm support interventions. *Four*, jobs dynamics are fundamental in the context of an analysis of the recovery as crises tend to have a long-lasting impact on employment.[4] To the best of our knowledge, our work is the first to provide firm-level evidence on the asymmetry of employment recovery.

2. Related Literature

Our study is linked to the strand of the literature aiming to understand the impact of COVID-19 on the performance and economic decisions of incumbent firms over time. The assessment of the impact of the pandemic on firm performance, particularly SMEs, has been relying heavily on surveys.[5] A rapidly growing literature is showing a damaging economic impact of COVID-19 on a cross-section of incumbent firms (Bartik et al., 2020; Beck, 2020; Fairlie and Fossen, 2021; Gourinchas et al., 2021; Papanikolaou and Schmidt, 2020; Buffington et al., 2020). Most of these studies use one wave of data and are focused on the short-term impact of COVID-19. Overall, they tend to conclude that the pandemic has a large negative economic impact on performance of firms, with substantial heterogeneity across countries and groups of firms and workers, within countries.

A fewer studies follow a panel of firms in the same country to chart out the pattern of recovery. For instance, using the opt-in panel of around 2,500 small businesses from the United States, Bloom et al. (2021) report a significant negative impact on sales that peaked in mid-2020, with an average loss of 29% (Bloom et al., 2021). These impacts also appear to be persistent such that the recovery in quarter 3 of 2020 was only partial, if any. In fact, firms reporting the largest sales drops during the

[4]See, for instance, Fernald et al. (2017); von Wachter (2021); Brynjolfsson et al. (2020); Merkl and Weber (2021); Yagan (2019).

[5]There are some exceptions, such as Chetty et al. (2020), which describes an impressive dataset built with private sector information, providing daily statistics on consumer spending, business revenues, employment rates, and other key indicators disaggregated; and (Hassan et al., 2020), which uses text data from earnings reports.

peak still expected large sales losses a year later in mid-2021 (Bloom et al., 2021). These results are aligned with previous studies showing negative short-term impacts on employment (Barrero and Bloom, 2020) and business activity (Fairlie and Fossen, 2021). Another study using high-frequency data from the United States Census Bureau's Small Business Pulse Survey (SBPS) suggests that small firms experienced very sharp declines in activity, business sentiment, and expectations in the initial phase of the pandemic (Buffington et al., 2021). While there has been some recovery since then, multiple indicators of performance remained substantially in the negative range early in 2021.

From the perspective of firm dynamics, there are two relevant dimensions that can potentially explain differences in how countries, on average, are recovering from the COVID-19 shock: i) The performance of incumbent firms; and ii) the entry and exit of firms. Evidence, mainly from advanced economies, suggest that both dimensions have been playing an important role in the recovery process. In terms of the entry-exit margins, the literature suggests enhanced rates of entrepreneurship in advanced economies such as the United States, France, Germany, Japan, and the United Kingdom in contrast to a decline in new business formation in countries such as Portugal and the Russian Federation (Buffington et al., 2021; Haltiwanger, 2021; Djankov et al., 2021; Romei, 2020; OECD, 2021). For instance, Haltiwanger (2021) notes that the pace of applications since mid-2020 in the United States is the highest on record, although this surge in new business applications has been uneven across sectors and has mostly pertained to non-employer firms.

The COVID-19 pandemic may also have contributed to the exit of many firms. Miyakawa et al. (2021) estimated an increased firm exits in Japan of about 20% compared to the pre-pandemic year. OECD (2021) shows that among all surveyed countries, monthly bankruptcies dropped year-on-year by more than 30% on average since March 2020. Moreover, from September to November 2020, no significant rebound was observed and the total number of bankruptcies in 2020 remained lower than in the previous year.

A few developing countries are individually collecting survey data to understand the impact of the pandemic. For instance, FAO, IOM, and ITC (2021) follows 893 Iraqi firms in three rounds of surveys to find that nearly all firms register a decline in production or sales between February 2020, the pre-COVID-19 period, and the end of the year. By June 2020, firms suffered an average decline in revenue by 67%. Although revenue partially recovered between July and October 2020, it was still 23% below the pre-pandemic level. Using a panel of Chinese firms operating on Alipay platform, Kong et al. (2021) find that one year after the exposure to the COVID-19 pandemic, the operational status of micro-and small enterprises has significantly improved. However, they still face serious cash flow constraints. A higher percentage of newly established businesses in China adopted online sales and electronic information systems than those established earlier. Nevertheless, the expectations on expansion in employment remain subdued.

With entry-exit dynamics, the pandemic is bound to change the market structure and competition which in turn will also affect productivity. This will have profound consequences in shaping the recovery process in the long-run. However, the causality runs both ways. The pandemic shock

affects productivity by inducing adjustments in the use and price of factors of production, through changes in the demand structure and by altering the allocation of resources between high and low productivity firms. For example, Bloom et al. (2020a) estimate a reduction in productivity in the United Kingdom, primarily due to an increase in the cost of intermediate inputs in the short-run associated with measure to contain COVID-19 and lower R&D investment and managerial time in the medium-run, although they also document a partially offsetting positive shock of reallocation of resources from low to high productivity firms. Andrews et al. (2021) find a positive reallocation effect for three OECD countries, mainly driven by technology readiness to face the shock and the additional investments in technology. Statistical agencies, at least in developed countries such as the United States are already witnessing a decline in productivity. Multifactor productivity decreased in the United States by 1.7% (U.S. Bureau of Labor Statistics, 2021).

On the flip side, ex-ante firm exits may be contingent on initial firm productivity, as noted in Borino et al. (2021) who use survey data from 31 countries, including a few in Africa. More productive firms may be more prepared to offset the shock and are more agile in adjusting (for e.g., adjustments in operations model, work from home, innovation in products and so on) to minimize the negative impact of the lockdown restrictions, physical distancing norms or the disruptions in supply-chains.

One channel, as suggested in Andrews et al. (2021) is the fact that initial productivity may reflect technological and management capabilities that allow a faster and more effective firm response. Combining information on technology sophistication pre-COVID-19 and the BPS data for firms from Brazil, Senegal, and Vietnam, Cirera et al. (2021a) show that firms using more sophisticated technologies before the pandemic were more likely to increase the use of digital technologies in response to COVID-19 and achieved better sales performance, compared to firms that were similar in many other dimensions. Using a sample of more than 3,000 firms in 16 countries, including several developing countries, Grover and Karlus (2021) show that firms with structured management practices, which is highly correlated with productivity, show greater resilience in operational status and sales changes, plus they are also quicker to respond by adjusting their operating models.

The likelihood of exiting during the pandemic has also been correlated with burdensome business environment and lack of digital presence (Borino et al., 2021). Nonetheless, government support is pivotal. Using firm-level data for 17 countries, Gourinchas et al. (2020) suggest that in the absence of government support, the failure rate of small and medium enterprises (SMEs) would have increased by 9.1 percentage points. Likewise, evidence from Denmark also suggests that targeted policy support helped firms stay afloat and created incentives for job retention (Bennedsen et al., 2020). Although public support has played an pivotal role on avoiding business closures in high-income countries, prior work using the first round of BPS data shows that firms from middle- and low-income countries are significantly less likely to receive public support (Cirera et al., 2021c). Some middle income economies, such as China, have nevertheless, witnessed an increase in the share of businesses that have received support (e.g., through online loans, Kong et al., 2021).

3. Data and Methodology

3.1 Data

To understand the impact of the COVID-19 pandemic on the performance of firms across countries, the World Bank Group, through its Business Pulse Surveys (BPS) and the Enterprise Surveys (WBES), developed an instrument to survey firms. These surveys include modules on firm characteristics (e.g., size, age, gender of the owner, debt, pre-COVID-19 sales etc.), changes since the onset of COVID-19 in employment, sales, expectations, digitalization, and public support received.[6] The first wave of BPS surveyed firms between May and September 2020 in 51 countries, and a follow-up wave 2 survey was implemented between October 2020 and March 2021 in 38 countries. This second round of data collection allows us to observe the evolution of business responses over time. This paper focuses on the 38 countries where both the first and the second waves of surveys have been conducted. In total, we observed 34,620 firms in wave 1; and 30,404 in wave 2, where 24,973 correspond to panel firms. Our sample comprises primarily of countries in the low and middle-income group (See Appendix B for disaggregate observations for each country included in the sample).

Firms in all sectors and size groups are surveyed. Our sample includes firms in agriculture (3.6%), manufacturing (31.6%), retail (23.2%) and other service activities (41.6%). All size groups are included in the sample: micro (firms with 0-4 employees; 33.6%), small (5-19 employees; 31.9%), medium (20-99 employees; 21.5%) and large (over 100 employees; 13.0%). For most countries, the sampling frame was based on censuses from Statistics Agencies, Ministries of Finance or Economy, or business listings from Business Associations, and typically only included businesses that could be found in some registers or listings. The WBES COVID-19 follow up surveys, by design, cover only formal firms.

We also use data from Google mobility reports around transit stations (Google, 2021) to measure the size of the shock suffered by firms. For countries without available data, we impute data based on the Oxford Government Response Tracker index (Hale et al., 2021). We construct an indicator of the severity of the crisis that is a weighted average of 30-day periods since the start of the pandemic until the date of the survey. Specifically, the 30-day period average just before the survey has a weight of 1, the average from day 31-60 has a weight of 1/2, the average from day 61 to 90 has a weight of 1/3, and so on until the start of the pandemic.

3.2 Methodology

Estimation Issues

To use the harmonized BPS and WBES follow-up data for assessing the impact of COVID-19 on firm performance and recovery, we face two methodological challenges. *First*, there is heterogeneity related to the differences in country samples, implementation strategy, and the timing of the surveys, also noted in Apedo-Amah et al. (2020). *Second*, although wave 2 specifically targeted follow-up surveys of firms from wave 1, some firms were not reachable or declined participation. The

[6] For the BPS wave 1 questionnaire, see Apedo-Amah et al. (2020); for wave 2, see Appendix D. For WBES see http://www.enterprisesurveys.org.

challenges associated with attrition, typical of longitudinal studies, are exacerbated in the context of the COVID-19 crisis due to mobility restrictions, in times of higher likelihood of business closures, and potentially larger opportunity costs of responding to a survey rather than working when restrictions are lifted. Such idiosyncrasies may systematically influence the availability of certain types of firms to respond to the follow up surveys.

Although attrition of firms in our sample is not large, it is not trivial. On average, the attrition rate is 28% (see Appendix Figure B3 for attrition rates by country). Moreover, attrition is not random. For instance, firm characteristics such as size and sector determine the follow-up responses. In particular, micro firms, those in the retail sector, the ones that had larger declines in sales (more than 50% or 90%) in wave 1, and those that were already in arrears or expecting to fall into arrears at the time of wave 1 surveys were less likely to respond to the wave 2 survey (see Figure B4 of Appendix B.4). To avoid a reduction in sample size, attriting firms were replaced with other firms with similar characteristics, as per the original sample design, such as stratification by size and sector. Thus, we observe a balance between waves in terms of general characteristics of the firms, such as size and sector (Figure B5 of Appendix B.4). However, we cannot rule out differences in unobserved performance of the firm during the first months of the pandemic.

Estimation Methodology

To address the heterogeneity in the sample across countries, we conduct our analysis through regressions that controls for such differences in survey implementation. Following a similar approach used to analyze the BPS data from the first wave (Apedo-Amah et al., 2020), our basic specification controls for pre-pandemic firm size, sub-sector, country fixed effects, and the constructed measure of the severity of the crisis faced by firms at the time of the survey. More specifically, we estimate the following equation.

$$Y_{it} = \alpha + \beta X_{it} + \gamma Sector_{st} + \theta Country_{ct} + \delta Shock_{ict} + \epsilon_{it}, \tag{1}$$

Where Y_{it} refers to the outcome of interest of firm i in time t. Outcomes explored in this paper include indicators of firm performance, such as sales, operating status, probability of falling arrears. Other outcomes are related to adjustments in business operational dimensions, including changes in employment, digital response, innovation, and the likelihood to access public support. We split time *t* into two periods, broadly defined as the period in which each wave was conducted. For all specifications the vector of firm characteristics X includes dummies for the size of the firm based on the number of full-time workers (micro; small; medium; and large). Depending on the outcome of interest, additional firm characteristics were included to investigate the association between these variables (e.g. a dummy identifying if the firm is above or below the average level of uncertainty to estimate the association between employment elasticity and uncertainty). Estimations also control for 12 sectors and country fixed effects. To control for variation in the severity of the shock within the period we implement the survey, $Shock_{ict}$ includes the severity of the crisis measure explained in the data subsection (for more details see Apedo-Amah et al., 2020). All variables are interacted with time measure *t* to allow for changes in the coefficients between the first and the second waves.

We estimate the margins for the variable of interest (e.g., size, sector, or country), for which we compare results across waves, keeping the distribution of size, sector, and country constant across waves to ensure that the results are not driven by differences in composition. To control for variations in the sample size by countries, estimations are weighted using the inverse of the number of observations in each country, that is, each country has the same weight in our summary statistics.[7]

Our baseline estimation method uses pooled cross-section analysis including the full sample of firms in both waves. All results we presented are estimated conditional averages from regressions, unless specified. For robustness, we also replicate the analysis using a panel data approach, restricting the sample to firms responding to both waves of the survey. Overall, results are consistent across these different approaches.[8]

To further understand the potential bias arising due to firm attrition, we implemented three alternative empirical strategies as a robustness check.[9] Using the subset of panel firms, we implemented the following robustness tests for the outcomes pertaining to the probability of being open, change in sales, probability of falling into arrears, and probability of accessing public support. *First*, we re-weight the sample using the inverse of the probability of responding to the follow-up survey based on firm characteristics and performance during wave 1 to adjust for non-response (Wooldridge, 2002). *Second*, we use the estimated probability of responding to the follow-up survey as a control in the regressions. *Third*, we use a bounds approach where the outcomes are determined by a set of (extreme) assumptions on firm responses (Kling et al., 2007; Blattman et al., 2020). More specifically, we conjecture two scenarios: (i) estimate an imputed value of the outcome variable based on firm characteristics and past performance; and (ii) assume that all firms that did not answered the survey closed (i.e., impute a decrease in sales in 100%).

4. Six Stylized Facts on the Impact of COVID-19 on Impact and Recovery of Firms

4.1 Stylized Fact 1: Months after the pandemic, some aspects of business performance show signs of recovery, albeit partial, thereby suggesting a possible 'U' shaped pattern.

The COVID-19 pandemic had a large and persistent impact on the operation and performance of firms. The first wave of the BPS and WBES COVID-19 showed that, on average, firm sales fall by 49%; almost 2 in 5 firms had already fallen or were expecting to fall into arrears in the following 6 month-period; 57% of the firms had reduced wages or hours worked of their employees, while 19% fired workers (Apedo-Amah et al., 2020).

The second wave of the survey data shows a positive trend of business recovery from this shock. We note the following key points on recovery: *First*, more firms are now operational, in spite of modest changes in mobility.[10] Overall 93% of the surveyed firms were operational in the second

[7] In some countries, sampling weights are available in order to produce nationally representative results at the country level, but for cross-country comparison purposes, we do not include these weights.

[8] These additional results are available upon request.

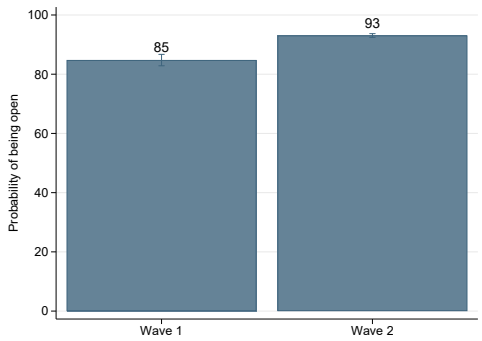
[9] These methods are described in McKenzie (2021).

[10] See Appendix Figure C1. This could be explained by a decrease in mandatory closure measures that were less likely to be implemented in successive waves of the pandemic and replaced by other measures to restrict mobility and social

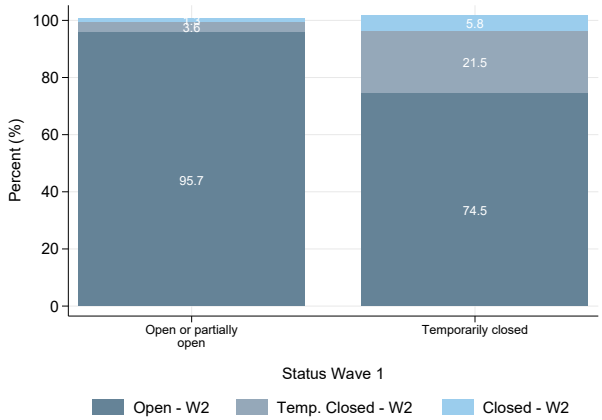
wave, compared to 85% in wave 1 (Figure 2, panel a). Three in four businesses that were closed during wave 1, were open in wave 2, while only 7% of firms that were open in wave 1 were not fully operational in wave 2 (Figure 2, panel b).

Figure 2: Probability of being open

(a) Overall



(b) Transition from wave 1 to wave 2



Second, sales are recovering since the peak of the shock, but still below pre-pandemic levels. For the panel of firms in 38 countries, average sales during the last 30 days in wave 2 is 28% lower than the same period in 2019. This is indicative of a possible 'U'-shaped or Nike Swoosh-shaped recovery rather than a rapid 'V'-shaped or a more optimistic 'Z'-shaped one. Nonetheless, this is still an improvement of 12 percentage points than that observed in the initial months of the pandemic (Figure 3, panel a). This finding on the persistence in the impact of the shock is qualitatively comparable to that observed for the United States (Bloom et al., 2020b), although the intensity of the shock is much higher in our sample of developing countries. Sales recovery is most noticeable for firms that experienced the largest decline in sales at the onset of the crisis. Firms that witnessed more than 70% decline in sales during wave 1 recovered, on average, by 44 percentage points by the second wave of BPS, compared to a median firm that recovered only by 20 percentage points (Figure 3, panel b).

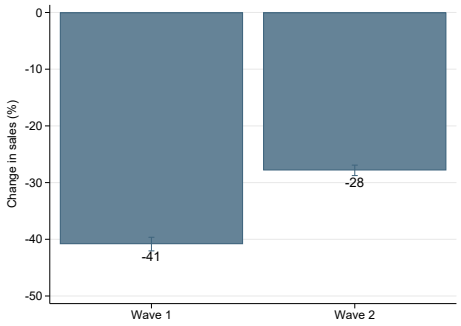
These results are robust to differences in estimation methodologies, and also when controlling for firm attrition (see Appendix Figure C2). For instance, using the bounds approach with imputation of change in sales for missing panel firms (based on firms with similar pre-pandemic characteristics and performance during wave 1), increases the predicted change in sales by 0.8 percentage point relative to the average drop of 25.3% without any correction for firm attrition.[11]

interactions.

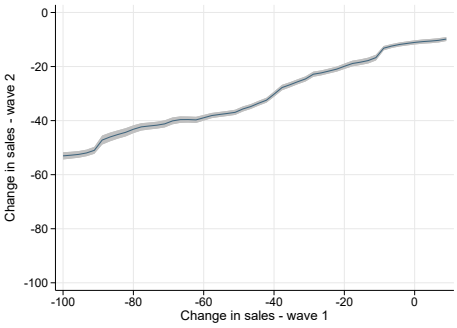
[11] The only case where the estimate diverges is in the bounds approach with an extreme assumption that all non-responding firms closed. Given the stability of the core results with varying methodologies, we present only the pooled cross-section estimates throughout the paper, unless otherwise noted. Additional robustness checks across all outcomes are available upon request.

Figure 3: Change in monthly sales

(a) Relative to 2019



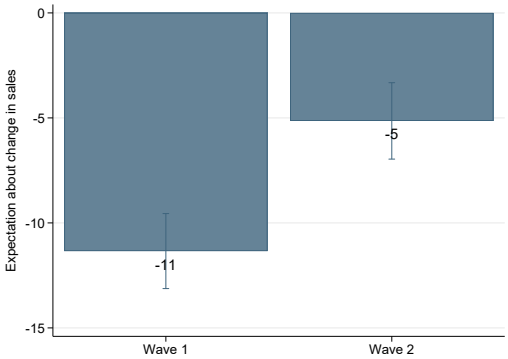
(b) Recovery from wave 1



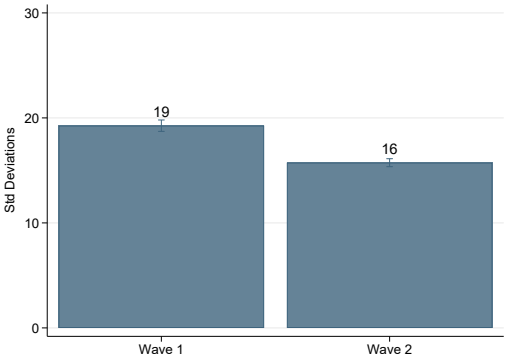
Three, with sales recovering relative to the initial phase of the pandemic, the expectations of future sales have improved. In the following 6 months, firms expect their sales to be, on average, only 5% below 2019 levels, which is a considerable improvement compared to 11% in wave 1 (Figure 4, panel a). Notably, firms' expectations about future sales in wave 1 is positively correlated with their actual sales nearly six months later. Nonetheless, there is an error such that the actual sales are lower than that expected in wave 1 by 17 percentage points (see Appendix Figure C3). This expectation error is tightly correlated with the uncertainty about the future (Bloom et al., 2020b), which does not seem to have faded at all by wave 2 (Figure 4, panel b).

Figure 4: Expectations and uncertainty about sales

(a) Expectations next 6 months



(b) Uncertainty



4.2 Stylized Fact 2: Business recovery is not apparent in all spheres, that is, large uncertainty still persists and firms remain financially fragile.

Improvement in other dimensions of firm performance may be slow and the effects of the crisis could be more long-lasting. *First*, as shown in Figure 4 (panel b), uncertainty, measured as the standard deviation in a firm's expectations, remains high and comparable to that in wave 1.[12] This finding is

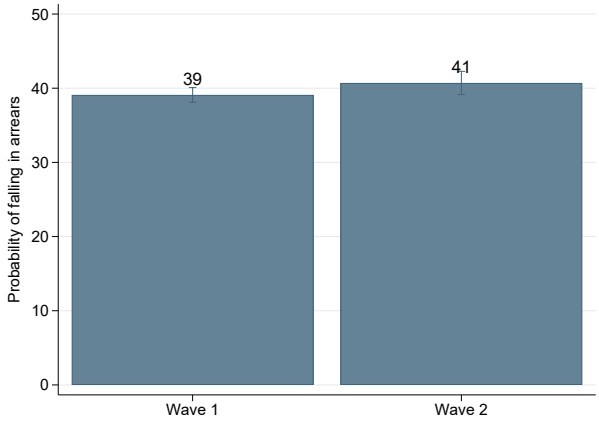
[12]Uncertainty is measured at the firm level as the standard deviation of each firm's expectations under three scenarios (regular, pessimistic, and optimistic), using as weights the self-assessed probability of each scenario.

consistent with other studies, such as Baker et al. (2020) who note that levels of uncertainty during COVID-19 have been much higher than that observed during the great financial recession of 2007-08 and more in line with that during the Great Depression . As such, the remarkably high uncertainty has important implications for firms' decisions to invest, innovate, as well as hire workers, which are all crucial for firm growth, productivity and hence recovery during the crisis (Bernanke, 1983; Bloom, 2009, 2014; Bloom et al., 2007).

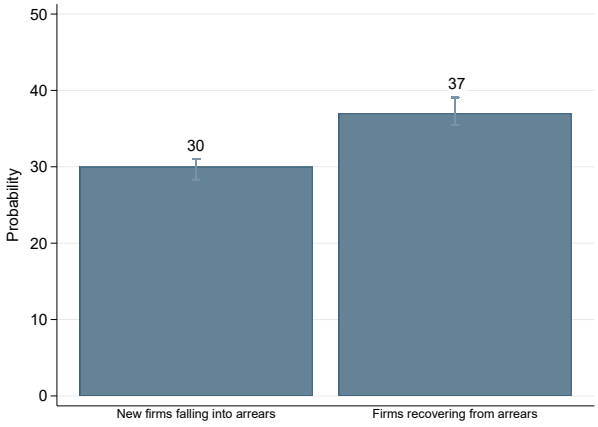
Second, firms still face severe financial constraints. Global crises and the demand shocks that they entail are accompanied by periods of financial distress, liquidity constraints, and tightening in the provision of credit (Menezes et al., 2020). Furthermore, the COVID-19 crisis has the particularity of working through various channels, which generates even more financial pressure on firms. Therefore, it is not surprising that, even though firm sales are beginning to recover, they remain financially fragile. There are no statistically significant differences across waves in the likelihood of falling into arrears and the probability of facing financial difficulties is still high at around 40% (Figure 5, panel a). This persistent financial fragility results from the fact that only 37% of the firms that fell in arrears during the peak of the crisis recovered from their financial woes, while a non-negligible share (30%) of firms that were not in arrears in the first wave are now falling into arrears (Figure 5, panel b).

Figure 5: Probability of falling into arrears

(a) Probability of falling into arrears: Comparison across two waves



(b) Probability of new firms falling into arrears and firms recovering



Third, as firms face a highly uncertain context and are financially constrained, they still need to make employment adjustments on both margins: extensive (lay-offs) and the intensive (salary, benefits, or hours reduced, as well as leave of absence). Since the start of the pandemic, firms that have resorted to lay-offs have reduced their number of employees by an average of 12%.[13] While the probability of firing workers does not exhibit a statistically significant reduction across waves (Figure 6, panel a), the probability of adjusting on the intensive margin has reduced by 12 percentage points between

[13]For firms with more than 100 employees (large firms), this implies an average reduction of 49 employees.

the two waves of the survey (Figure 6, panel b). However, this still represents a large share (32%) of the firms that make downward adjustments on the intensive margin. Employment changes are especially rampant for firms that already adjusted in wave 1. Of the firms that made a downward shift in employment on both the intensive and extensive margins in wave 1, 60% continue to adjust on either margins. Moreover, 25% of firms that did not modify employment during wave 1 are also adjusting, albeit mainly on the intensive margin (Table 1).

Figure 6: Evolving employment adjustments during the pandemic

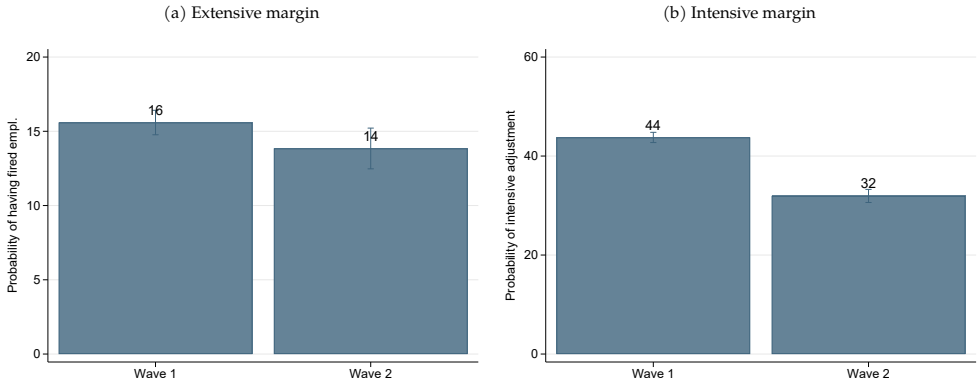


Table 1: Transition in employment adjustment patterns across waves

		Wave 2			
		No employment changes	Extensive margin only	Intensive margin only	Extensive and intensive margins
Wave 1	No employment changes	74.5	17.7	2.9	4.8
	Extensive margin only	61.3	15.2	7.7	15.8
	Intensive margin only	50.3	37.7	6.5	5.5
	Extensive and intensive margins	37.9	32.5	18.3	11.4

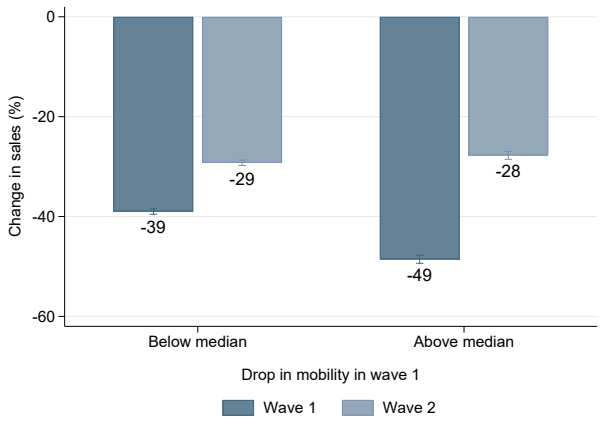
4.3 Stylized Fact 3: The recovery among firms is heterogeneous and more sensitive to firm-level attributes rather than to country-level differences in the severity of the initial shock.

The analysis of firm outcomes, focusing on average trends, masks significant heterogeneity in performance. Such heterogeneity is well-noted in many studies, including the one using the first wave of BPS (Apedo-Amah et al., 2020). The second wave of BPS data allows us to explore the heterogeneity in recovery process within and across countries.

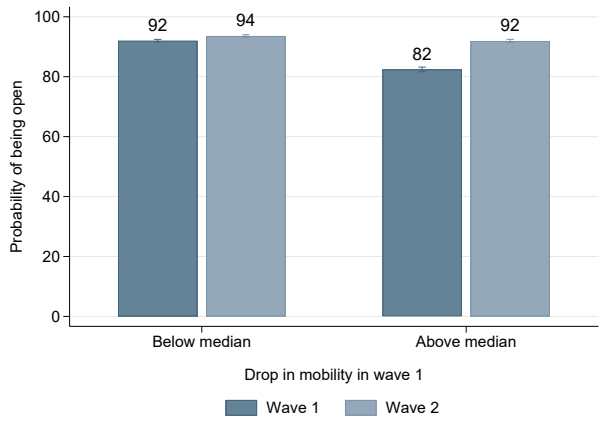
First, firms in countries with more severe initial shock (as measured by the drop in mobility drop) are catching up in performance relative to their peers in countries facing a lower severity of the shock. For instance, while firms in countries with more severe mobility drop during the start of the pandemic witness a decrease in sales by 49% in wave 1 and 29% in wave 2, those in countries with milder disruptions in mobility observed a decline in sales by 39% during wave 1 and 28% in wave 2 (Figure 7, panel a). A similar pattern is also found with the probability of being open (Figure 7, panel b).

Figure 7: Severity of initial mobility drop

(a) Change in sales



(b) Probability of being operational

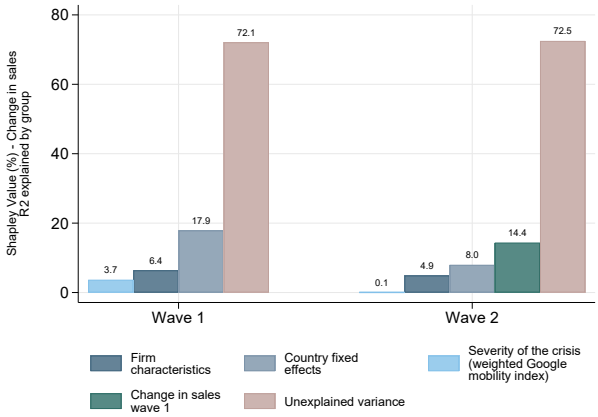


Second, the adjustment mechanisms and decisions of the firm are having a more important impact on sales performance and recovery relative to severity of the initial lockdown. As many developing countries were imposing severe lockdown measures in wave 1, they also faced a dilemma of "lives versus livelihood", because a disproportionate number of firms (and workers) operate on the fringe of subsistence and are more likely to exit when countries shutdown. If changes in sales are largely explained by the country level disruptions in mobility (which may, in some cases, be induced by the severity of lockdown), then recovery will be organic once mobility is back to normal and some of the pandemic related restrictions are lifted. However, this recovery may still be uneven due to *firm-level heterogeneity*. The non-pharmaceutical measures, proxied by the mobility variable and the country dummies, explain only 21% of the variation in sales in wave 1 and 10% in wave 2 (Figure 8, panel a). Some of the firm-specific heterogeneity and unobserved attributes are captured in the decline in wave 1 sales, which explain 14% of the change in sales in wave 2.[14] The bulk of the variation in sales is not explained by the mobility disruptions or even by the some of the observed firm characteristics, and are related to other idiosyncratic unexplained factors. This finding is confirmed in (Figure 8, panel b), which illustrates that the elasticity of sales with respect to severity of the mobility disruptions reduces by half in wave 2. Thus, firms' decisions and adjustments are increasingly important in the recovery.

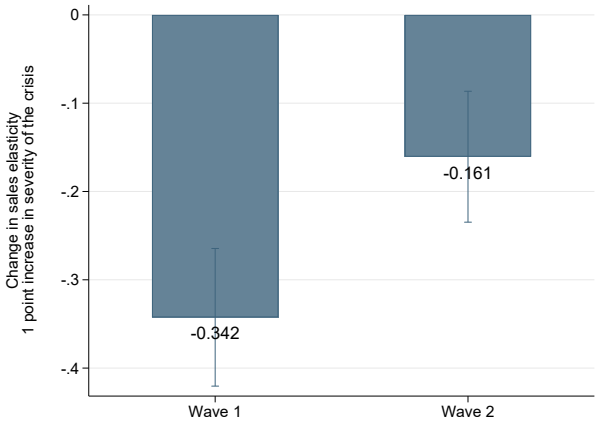
[14] Although some of this could be due to the persistence from the initial shock.

Figure 8: Explaining change in sales: Country-level versus firm level attributes

(a) Shapley decomposition of change in sales



(b) Elasticity of change in sales to severity



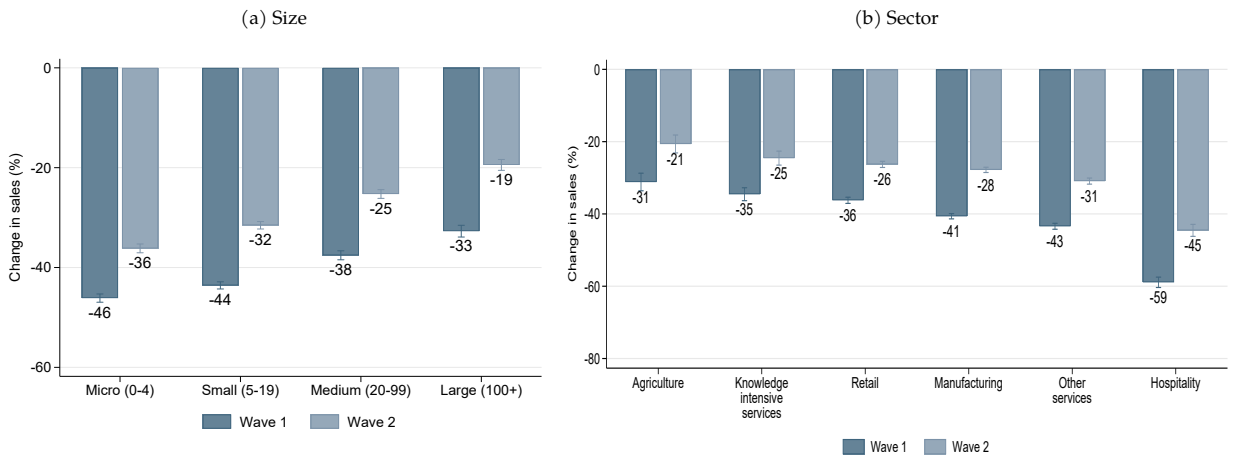
Third, part of this heterogeneity in recovery is related to firm size and sector. The gaps observed in improvements across firm sizes and sectors, documented by Apedo-Amah et al. (2020) are still relevant in the recovery process. Micro and small firms have seen their sales improve but still are 36% and 32% below 2019 levels (Figure 9, panel a). More importantly the gap with medium and large firms increased, especially in relation to large firms. Thus, the gap in sales recovery between smaller and larger firms has widened, and micro and small firms are recovering at a slower pace.[15] Likewise, the gap in recovery for the hospitality sector is still large and the drop in sales is far below its pre-COVID-19 levels in sales, -45%.[16] Other services, while improving is also -31% sales below 2019 levels (Figure 9, panel b). The shock continues to hit these two services sectors with high intensity, while retail and knowledge services are recovering to a level comparable to that in manufacturing.[17]

[15]The elasticity of mobility disruptions to sales by firm size group does not vary significantly across firm size group, thereby suggesting that disruptions in mobility at the country level play little role in explaining the heterogeneity of the recovery across size groups (see Appendix Figure C4).

[16]In Appendix Figure C5, we show that the hospitality sector also exhibits a higher probability of falling into arrears and that the gap against other sectors has not reduced significantly.

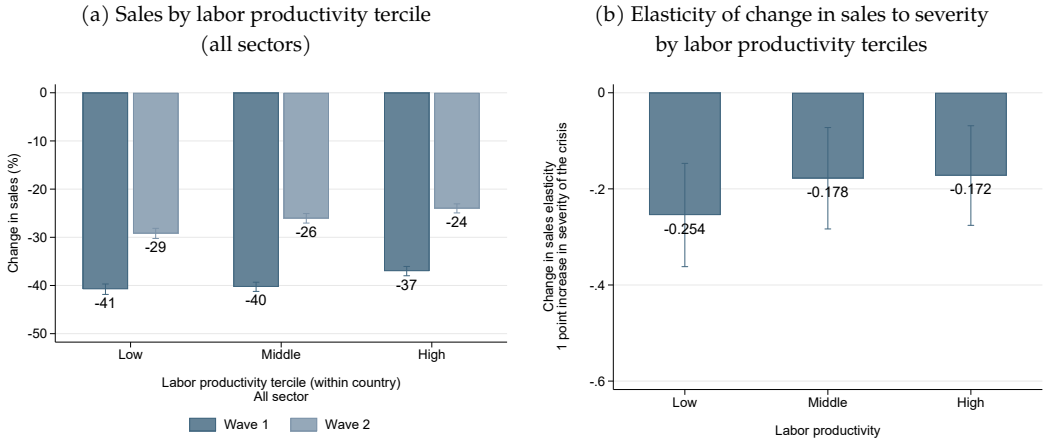
[17]The recovery in the hospitality sector is very much linked with the severity of mobility disruptions, as illustrated in the elasticity of changes in sales. While other sectors can adjust by selling online or have addressed supply and labor bottlenecks, hospitality depends almost entirely on face-to-face interactions with consumers. See Appendix Figure C6.

Figure 9: Change in sale by observable firm attributes



Fourth, sales recovery in wave 2 is correlated with firm capabilities, as measured by initial labor productivity. This is consistent with findings such as Cros et al. (2021), who find Schumpeterean "cleansing" effects of COVID-19 on exit of less productive firms, and congruous with the hypothesis of Andrews et al. (2021) that initial productivity may embody capabilities in technology and management that help firms respond to the crisis (also see Grover and Karlus, 2021). While higher productivity corresponds to relatively more resilience and faster recovery (Figure 10, panel a), unlike the findings of Cette et al. (2020) this resilience is not significantly different across different levels of exposure to mobility disruptions (Figure 10, panel b).[18]

Figure 10: Initial labor productivity and firm's resilience and recovery

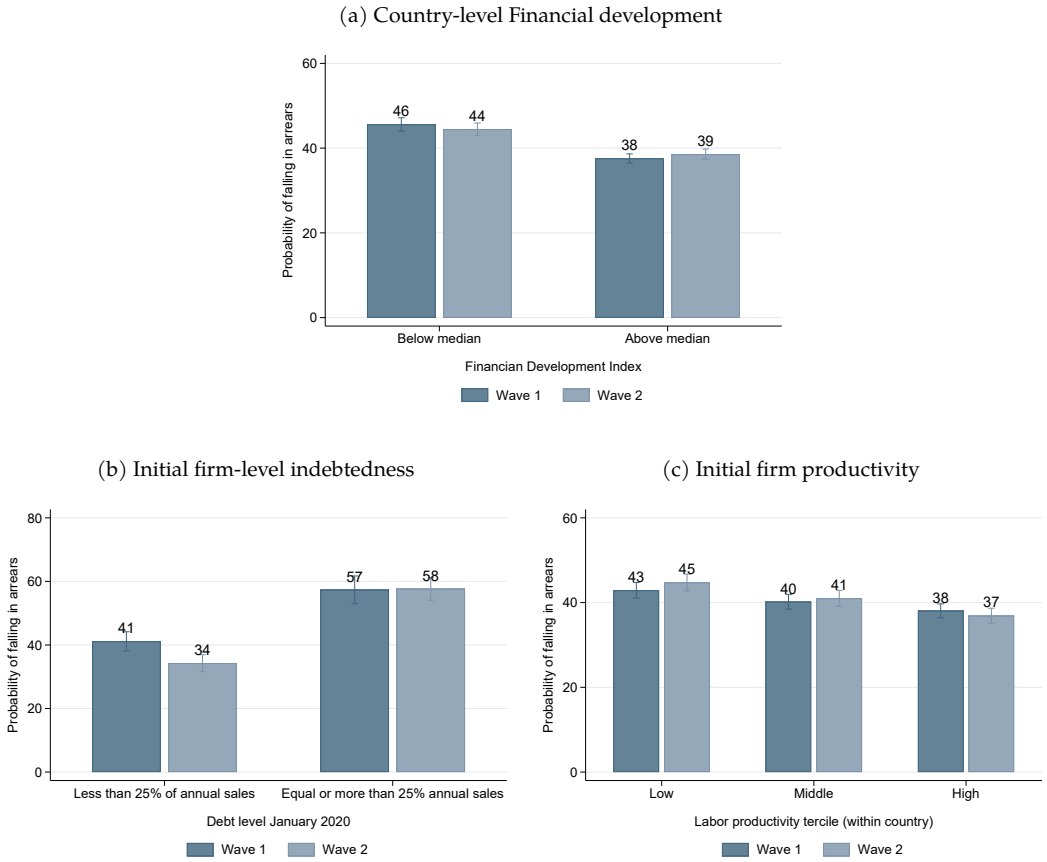


Fifth, financial fragility among firms is associated with financial development at the country-level and with initial firm-level attributes (e.g., indebtedness and capabilities). Firms in less-financially

[18]To have a cleaner comparison, Appendix Figure C7 shows the same comparison of productivity groups within the same homogeneous sector, retail, highlighting a better performance of more productive firms.

developed markets have a higher probability of falling into arrears. Firms in countries with below median financial development have about 45% probability of falling into arrears in either wave, while those in countries with better financial development have a probability around 38% (Figure 11, panel a).[19] Still, the probability is not decreasing for any group.[20] In terms of the firm-level attributes, pre-pandemic indebtedness is positively associated with the extent of financial fragility, as measured by the probability of falling into arrears (Figure 11, panel b), and negatively correlated with initial productivity (Figure 11, panel c). Nevertheless, it is also noteworthy that irrespective of the productivity position in pre-pandemic times, firms in the retail services sector, for instance, are increasingly more likely to fall into arrears in wave 2.[21]

Figure 11: Probability of falling into arrears by country-level and firm-level attributes



Note: Financial development is measured as the ratio of private credit over GDP, following Beck et al. (2009).

[19] See Appendix Figures C8 and C9 for further analysis on Financial Development.

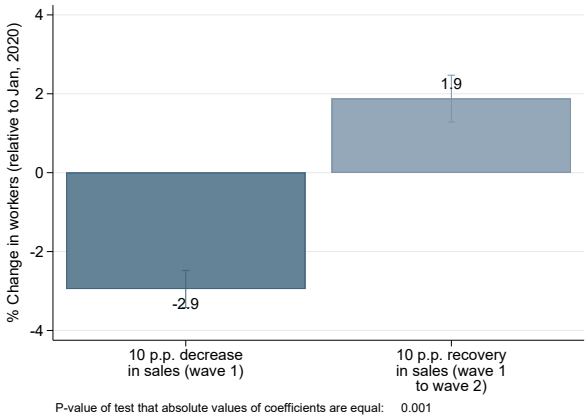
[20] By comparison, firms in countries with more severe initial mobility drop are still more likely to fall into arrears relative to their peers in countries with less severe mobility drop in wave 1 (Appendix Figure C10, panel a). In fact, the probability of recovering from arrears is significantly lower in countries with more severe initial mobility drop, see Appendix Figure C10, panels b and c.

[21] In fact, recovery is also difficult for firms with higher initial indebtedness and if firms with high initial indebtedness have not already fallen into arrears in wave 1, they have a 60% probability of becoming fragile in wave 2 (see Appendix Figure C11)

4.4 Stylized Fact 4: Employment responses to changes in sales are lower in the recovery phase than in the first phase of the crisis.

It is well-known that the unemployment rate rises deeply and sharply during recessions, but it recovers slowly and gradually during expansions. This mismatch of sharp spikes in unemployment during recessions and slow job gains during expansions is known as "cyclical asymmetry" (Andolfatto and Spewak, 2018; Andolfatto, 1997; Ferraro, 2018). Our analysis makes several key points on employment recovery. *First*, the pattern observed in the recessionary and recovery phases of the current pandemic concurs with such a phenomenon. While employment declined sharply by 2.9% for a 10 percentage point drop in sales during wave 1, it recovered by only 1.9% for a commensurate increase in wave 2 sales (Figure 12).

Figure 12: Employment elasticity during recessionary and recovery phases

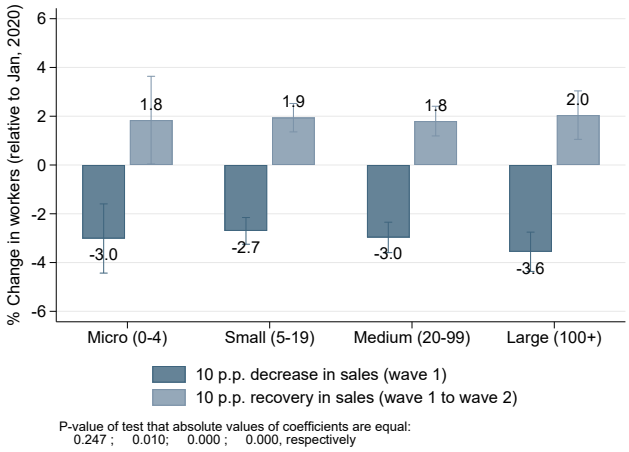


Second, cyclical asymmetry is stronger among firms and sectors where skills are more specialized and employer-employee matches are difficult to establish. In these situations, it takes much longer to create jobs than to destroy them.[22] To this end, it is not surprising to see that while micro, small and medium sized firms still have asymmetry in employment elasticity during the recessionary versus the recovery phase, these differences are much more pronounced for large firms (Figure 13, panel a). Likewise, across sectors, it might be most difficult to recover jobs in the knowledge intensive services compared to those in the hospitality sector. The significance of employer-employee matches is evident in the cyclical asymmetry across sectors (Figure 13, panel b). For a 10 percentage point decline in sales, firms in the hospitality sector drop employment by 3% but absorb 2.8% employment once sales recover. By contrast, the respective figures for firms in the knowledge-intensive sector are 3.5% and 0.8% .

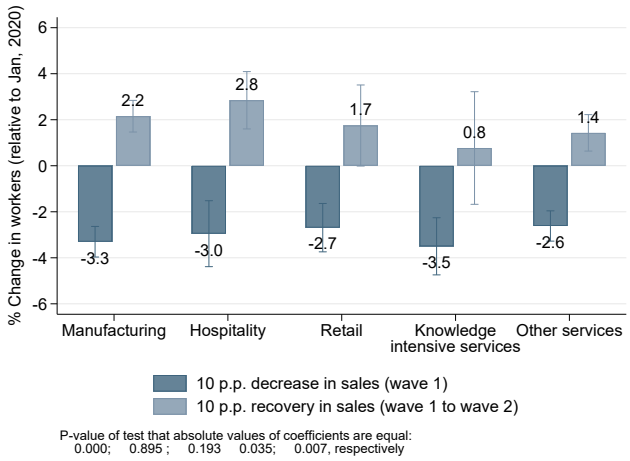
[22]Employer-employee relationships can be perceived as a durable form of intangible capital that provides long-term economic benefits for firms and workers. While these relationships can be terminated within a short span, it takes time to build this capital (Andolfatto, 1997).

Figure 13: Employment elasticity during recessionary and recovery phases

(a) by firm size

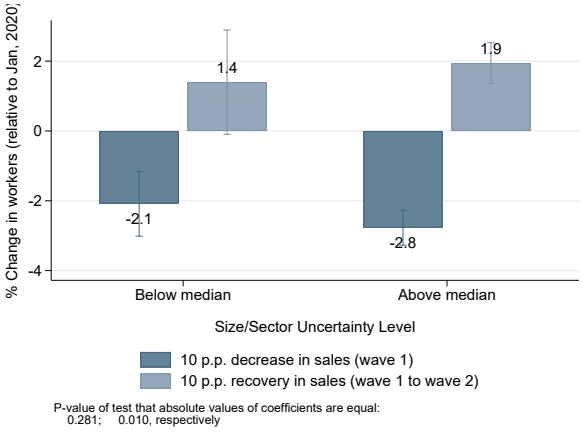


(b) by firm sector



Third, the observed cyclical asymmetry in employment elasticity may be attributed to heightened uncertainty during the pandemic. Anticipating future disruptions from the continuing COVID-19 crisis, firms have postponed their long-term decisions, such as investment and hiring which is likely affecting the depth of the downturn and the strength of the recovery (Leduc and Liu, 2020). Firms with elevated levels (above median) of uncertainty suffer more sluggish recovery in employment: a 10 percentage point decline in sales in wave 1 is associated with a 2.8% decline in employment and 1.9% increase when sales recover in wave 2. The corresponding figures for firms with below median uncertainty are 2.1% and 1.4% respectively (Figure 14). Higher uncertainty among firms corresponds to more volatility. As a result, even short-lived spikes in uncertainty, such as those experienced during the recovery phase from the financial crisis (2010-2014), have historically had persistent effects on employment growth (Foerster et al., 2014).[23]

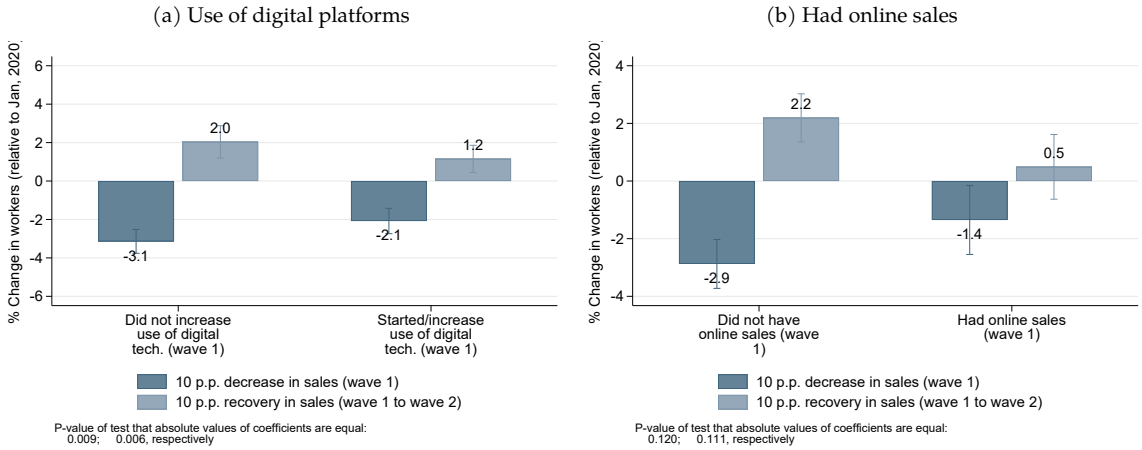
Figure 14: Employment elasticity during recessionary and recovery phases by uncertainty among firms



[23]Foerster et al. (2014) finds huge asymmetry in the response of employment growth to changes in uncertainty such that large decreases in uncertainty and small changes in either direction seem to have little or no effect on employment. However, increases in uncertainty produce statistically significant and persistent declines in employment growth.

Fourth, on average digital technology adoption does not accentuate cyclical asymmetry, and if anything it only makes firms less volatile to shocks. Using two binary measures of digital technology adoption: (i) use of digital platforms; and (ii) online sales (in Figure 15, panels a and b respectively), we find that for a 10 percentage point decline in sales, firms that started or increased the use of digital platform drop employment by 2.1% in wave 1, but absorb back 1.2% employment once sales begin to recover in wave 2. The corresponding changes for other firms is 3.1% and 2%, with the differences between digitally enabled and other firms being statistically significant.[24] Prior literature suggests that recessions accelerate routine-biased technological changes (Hershbein and Kahn, 2018)[25] which may in turn substitute for labor and contribute to the jobless recoveries (Jaimovich and Siu, 2020). However, on average this does not seem to be the case in the current pandemic although there is heterogeneity by sector. Compared to manufacturing, digitally enabled firms in retail experience a much sharper asymmetry in employment elasticity, thereby suggesting a sluggish jobs recovery in the sector (see Appendix Figure C13).

Figure 15: Employment elasticity shock and recovery by use of digital technologies



Our analysis here is based on the elasticity with respect to the number of full-time employees, however, it is possible that COVID-19 may permanently reshape the business operation strategies perhaps due to concomitant changes in the production function. For example, there has been a remarkable increase in automation (Leduc and Liu, 2020) and working from home which may encourage firms to switch to other types of employment contracts instead of full-time employees (Barrero and Bloom, 2020). In such a scenario, we may observe a discrepancy between recovery in hours worked for the economy as a whole versus full-time employment, as was witnessed in the United States' recovery from the financial crisis (Mulligan, 2012).

[24]The p-values of differences during wave 1 are 0.029 (use of digital platform), and 0.016 (online sales) and those during wave 2 are 0.216 (use of digital platform) and 0.010 (online sales). Over the one-year period if firms have recovered their sales, digitally enabled firms lose 0.9% employment compared to 1.2% in other firms.

[25]Prolonged uncertainty in the possibility of workers returning to physical office spaces also encourages firms to switch towards automation, because the productivity of robots is not susceptible to the pandemic (Leduc and Liu, 2020).

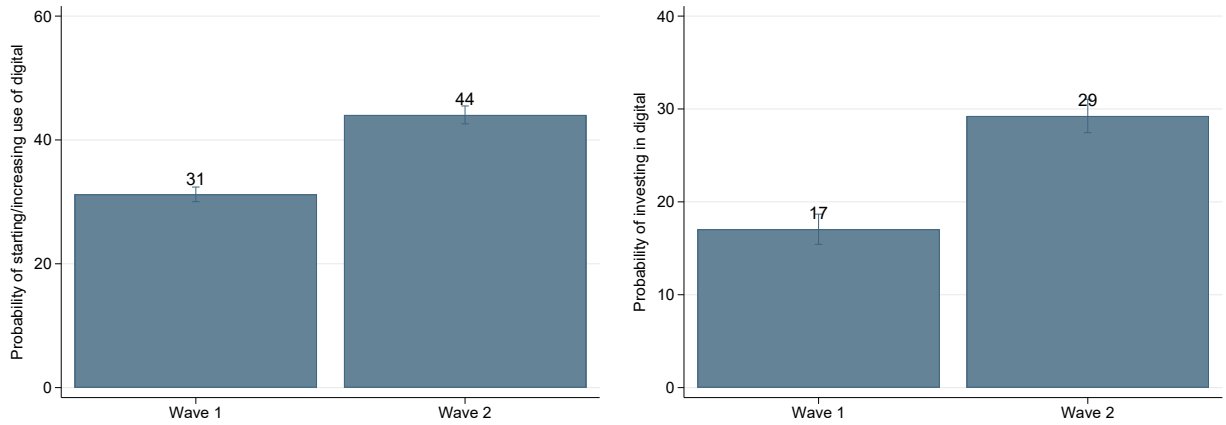
4.5 Stylized Fact 5: The persistence of the pandemic and the induced mobility disruptions accelerated digital technology diffusion and product innovation but did so in an uneven manner.

The social distancing measures to curb the spread of the pandemic generated a profound shock to which firms had to respond. These restrictions restrained workers' mobility, introduced bottlenecks in supply chains and made it difficult for firms to reach consumers in person. These constraints in turn induced changes in production and demand patterns.[26]

Apedo-Amah et al. (2020) find evidence of accelerated digitalization and product innovation among firms in response to the pandemic in the short-term.[27] Using a subsequent wave of data, we document the medium-term patterns (for more details on digital adoption see Cirera et al., 2021a). Our results suggest that, *first*, firms responded by accelerating the use of existing digital technologies, investing in new digital solutions and by altering their product-mix. This expansion in the use of digital technologies allowed firms to better reach consumers (or reach new ones) and organize production more flexibly and efficiently. Nearly 44% of businesses have increased the use of digital technologies, compared to 31% in the first wave (Figure 16 panel a). This shift towards the acceleration of digitization is confirmed in Figure 16 panel (b), showing that 29% of firms had invested in new digital solutions, nearly doubling from wave 1.

Figure 16: Probability of digitization

(a) Increased use of digital tech. (b) Investment in digital solutions



Second, the extent of digitization and product innovation is contingent on the severity of the initial shock to mobility, although causality is difficult to establish. Firms are more likely to accelerate digital adoption and product-innovation when facing larger disruptions to mobility (Figure 17). These differences are especially large when it comes to the use of digital technologies compared to

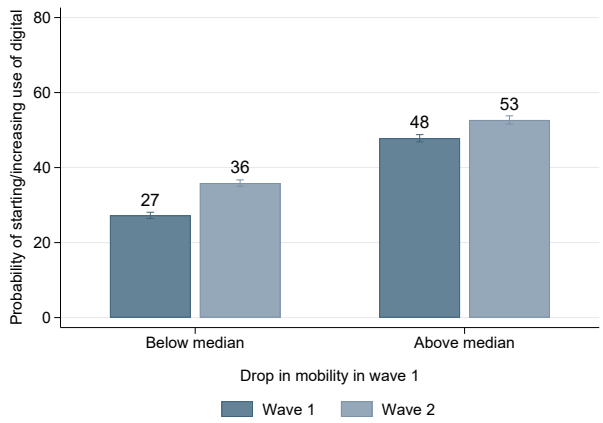
[26]For example Watanabe and Omori (2020) find that in the first few months of the pandemic Japanese consumers familiar with online channels switched to products and services that were sold online perhaps in an attempt to avoid face-to-face interactions.

[27]Relying on the first wave data collected between April and August 2020.

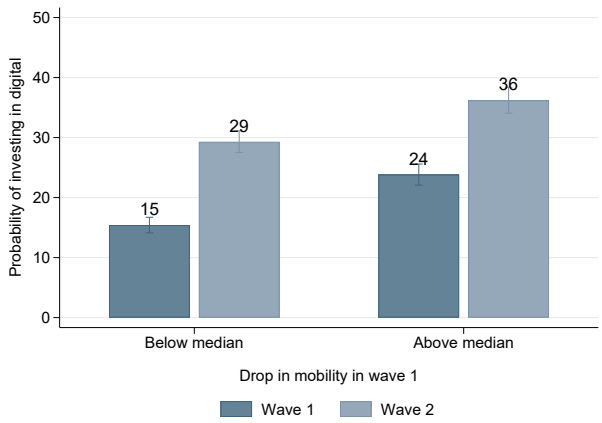
digital investments, which could be rather lumpy.

Figure 17: Probability of digital or innovation response and severity of initial shock

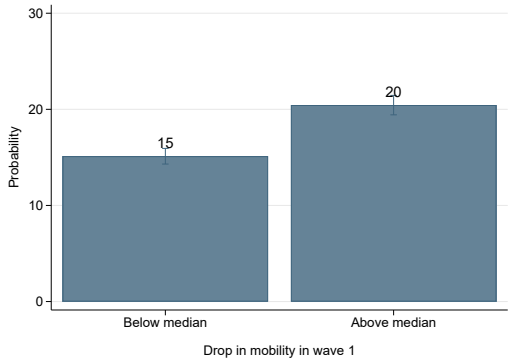
(a) Increase use of digital tech.



(b) Investment in digital solutions



(c) Probability of introducing new products



Third, firms' adjustment responses (e.g. in terms of digital upgrading) are associated with increased market concentration and may widen the gaps in performance (and productivity) between smaller and mid-sized or larger firms. The concentration of online sales in a few firms, especially in the retail industry is striking although not surprising given that the option to sell online is usually adopted by retailer chains. Based on the BPS data in Vietnam, we find that the top 5% largest firms accounted for a share of online sales that increased from 65% in the first wave to 77% in the second wave in barely a six-month period. This is especially worrying in the light of recent evidence of increasing market concentration at the global level (De Loecker and Eeckhout, 2018).

This tendency towards heterogeneous responses across firms with different sizes is in line with differences in investment in digitalization and product innovation. Micro and small firms appear to invest significantly less in digital technologies and product innovation strategies (Apedo-Amah et al., 2020). Although the gaps between micro and small, and medium and large firms with respect to the use of digital technologies narrowed by wave 2 (Figure 18, panel a), the divide regarding

investments in digital solutions and product innovation persists (Figure 18, panels b and c).[28] Smaller firms possibly face larger barriers to invest in digital or product innovation due to the lack of complementary inputs (i.e., managerial skills) or access to finance.

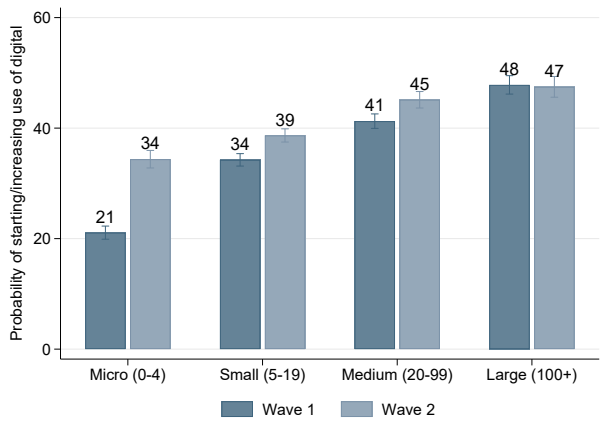
These results suggest that the benefits of the digital acceleration and opportunities to pivot product-mix may be accessible only to larger firms or selected groups which have both access to finance and the required managerial skills to take advantage of them. While this might widen the inequality across firms, in the long-run it may also lead to a possible reallocation of market shares towards more productive firms. This is not surprising because more productive firms have a higher tendency to adopt digital technologies and they also appropriate larger benefits from such adoption because they have complementary capabilities (e.g. technical, managerial, and organizational) (Sorbe et al., 2019; Gal et al., 2019).[29] BPS data also confirms that the probability of adopting digital technologies tends to increase with productivity, although the differences are slight and not significant (Figure C15). Thus, the COVID-19 shock may end up reallocating resources and market share from low productive firms to those with higher productivity.

[28] We show only wave 2 data for product innovation because it is not exactly comparable with wave 1. It should be noted that the gap between large and micro or small firms in the aftermath of the COVID-19 crisis, which ranges between 7 and 9 percentage points, is actually lower than the typical gap found in innovation surveys during normal times in the OECD countries where the average innovation (product, process or organizational) gap between large firms and SMEs is 24 percentage points (OEC, 2021).

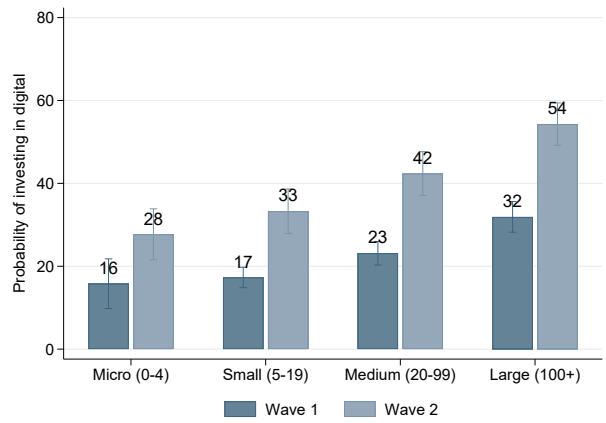
[29] In the context of the COVID-19 crisis, Riom and Valero (2020) find path dependence in digitalization, that is, firms that had already invested in digital technologies were more likely to adopt more of these technologies.

Figure 18: Probability of digital or innovation response by firm size

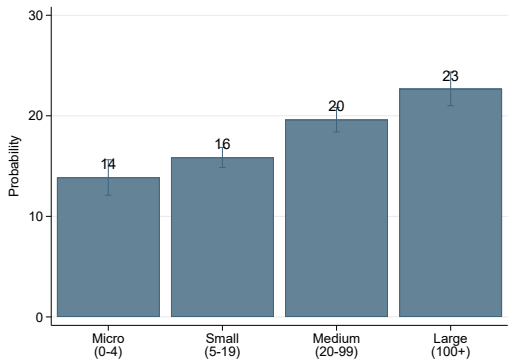
(a) Increase use of digital tech.



(b) Investment in digital solutions



(c) Probability of introducing new products

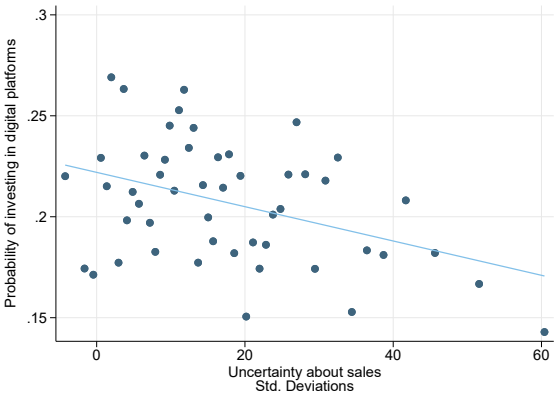


Fourth, uncertainty about the future dissuades firms from making investments in digital technologies and product innovation even though there could be potential rewards in aligning with the changes in market demand and supply conditions (Figure 19).[30] While governments cannot predict the surge of potential new contagion waves, uncertainty could still be addressed through predictable policy interventions.

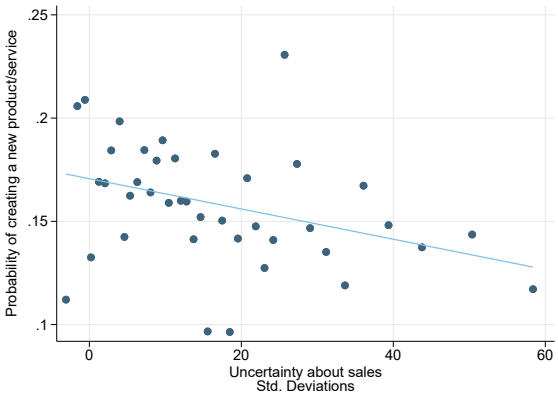
[30]See García-Quevedo et al. (2017) for a review of the impact of uncertainty and future demand on innovation, and Cirera et al. (2021b) show that uncertainty about future demand is an important deterrent in the adoption of technology in Vietnam.

Figure 19: Uncertainty about sales and probability innovating

(a) Investment digital



(b) Innovation



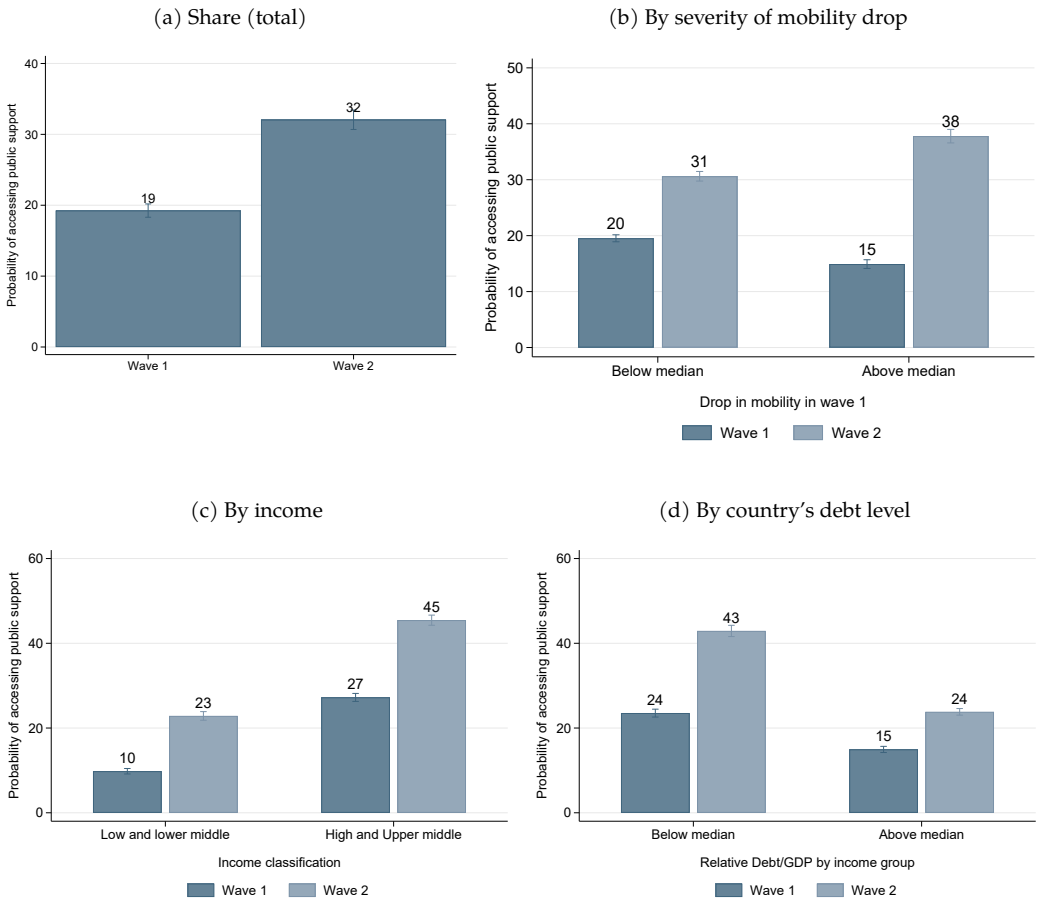
Notes: Panel (a) is the bin scatter of the probability of investing in digital platforms controlling for size, sector, severity of the crisis and wave. On average, an increase in 1 standard deviation in uncertainty is associated with 0.15 percentage point decrease in the probability of investing in digital platforms (p-value: 0.000) Panel (b) repeats the same for product innovation. Because we have this information only for wave 2, it does not control for wave. On average, an increase in 1 standard deviation in uncertainty is associated with 0.07 percentage point decrease in the probability of innovating (p-value: 0.020)

4.6 Stylized fact 6: As the COVID-19 pandemic evolved, governments have expanded the support for businesses.

Relying on the first wave of BPS data covering more than 120,000 firms in 60 countries, Cirera et al. (2021c) document the wide range of policy support measures, the reach of these policies, the alignment of measures with firm needs, and their targeting and effectiveness. Despite the plethora of measures launched around the globe, they show that only one in four firms received any type of public support at the time we conducted the surveys. These results show stark differences by income levels: the probability of receiving some public support is 11% in low-income countries, 15% in lower-middle-income countries, 30% in upper-middle-income countries, and 53% in high-income countries. They show that policy reach has been limited, especially for the more vulnerable firms and countries. Using data from the second wave, we provide three novel findings.

First, through time the probability of accessing public support increased significantly from 19% to 32% for an average firm in 38 countries surveyed in the second wave (Figure 20, panel a). *Second*, there is significant heterogeneity in access associated with country-level characteristics. Firms in countries with more severe initial mobility drop witnessed a significant increase in the probability of accessing support in wave 2 (Figure 20, panel b). Firms in higher income countries and those with lower indebtedness (within their income-group) have a higher probability of accessing support in both waves (Figure 20, panels c and d). Firms in highly indebted countries are also at a disadvantage. These findings suggest that countries with more public resources significantly responded to the COVID-19 pandemic by providing a wider coverage to businesses.

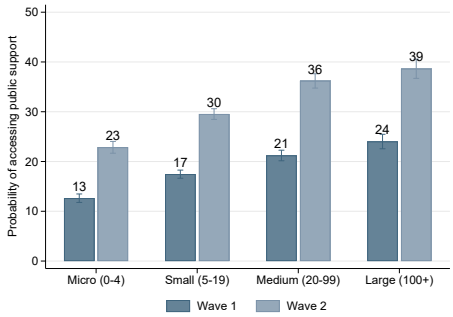
Figure 20: Probability of accessing public support (total and by country characteristics).



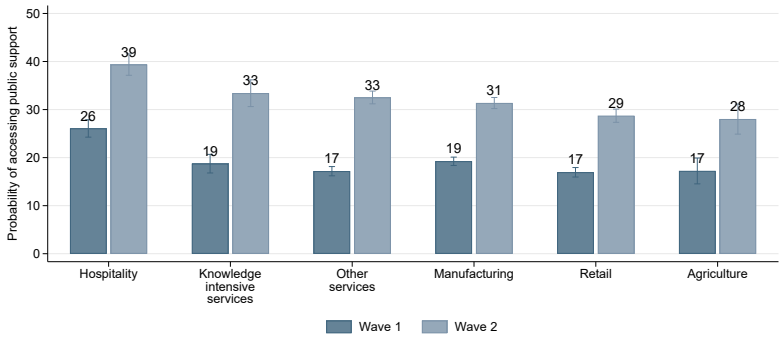
Third, within countries, access to public support also varies widely by external firm attributes. The gap between micro/small versus medium/large on the likelihood of accessing public support noted in Cirera et al. (2021c) seems to be persistent across time (Figure 21, panel a). Given that the service sector was hardest hit by the pandemic, policy makers have been careful in extending provision of business support to firms in hospitality, knowledge-intensive services and other services (Figure 21, panel b). However, access to public support is not correlated with internal firm attributes such as firm productivity (Figure 21, panel c). These observations reinforce the challenges faced by policy makers on targeting businesses identified in Cirera et al. (2021c) using the first wave of the BPS. Their work shows that a large number of firms that did not experience any shock or sales drop during the COVID-19 pandemic still received public support. It appears that support to firms during the pandemic may continue to be based on basic observable characteristics of the firms (e.g. sector and size), as opposed to saving the more productive and viable firms.

Figure 21: Probability of accessing public support by firm attributes.

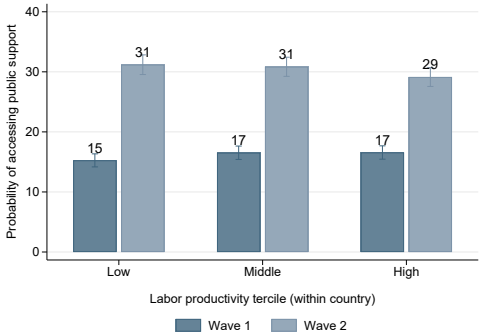
(a) By firm size



(b) By firm sector



(c) By firm productivity



5. Conclusions

More than a year into the COVID-19 pandemic, policy makers' attention has shifted from immediate crisis mitigation to policies that support medium-term adaptation and a longer-term, productivity-driven recovery. Utilizing novel panel data from 38, mostly developing countries, this paper provides new evidence to guide policy makers in this process. This evidence has been grouped into a set of six stylized facts on the shape of the recovery, its heterogeneity across indicators, countries, sectors, and types of firms; its relationship with uncertainty; digital technology adoption; financial development; and the evolution of policy support.

The results show that, some 7-12 months since the onset of the pandemic, business activity is recovering. Three in four firms that had temporarily closed during the early months of the crisis are operating again. Although firm sales are still 28% below pre-pandemic levels, it is a significant improvement from a 41% decline in the months immediately following the onset of the crisis. Firms in countries with more severe mobility restrictions early in the pandemic — that generally experienced larger declines in sales — are recovering faster than businesses in countries with less severe initial mobility limits. And within countries, more productive firms have been more resilient than less productive businesses, consistent with other evidence of Schumpeterean "cleansing" effects of COVID-19. Last but not least, the pandemic has significantly accelerated the adoption of digital

technology, with 44% of firms increasing the use of digital technologies and 29% of businesses making new investments in digital solutions.

However, other aspects of business performance during the pandemic show less progress. Uncertainty, which reached historic proportions early in the crisis, remains just as elevated more than a year into the pandemic. Similarly, financial vulnerabilities continue to loom large: the share of firms in arrears or likely to fall into arrears has risen slightly from 39% in May-August 2020 to 41% in October 2020 - March 2021. Across countries, financial vulnerabilities are higher in countries with less developed financial markets while within countries, large firms are recovering faster than micro and small firms, raising concerns of rising market concentration. And, while fewer firms are cutting down on labor than earlier in the pandemic, the recovery in employment has been less robust than the initial decline. This suggests that not all jobs lost during the pandemic may come back, even as sales trend back to the pre-crisis levels.

These findings point to several areas for policy attention and action. *First*, historically high uncertainty inhibits many aspects of business recovery, such as digital adoption and new hiring. Policy makers can reduce uncertainty through clear communication of policy objectives, eligibility for and duration of public assistance programs, as well as by supporting firms in strengthening their capabilities, improving managerial processes, and diversifying into new products and markets. *Second*, elevated financial vulnerabilities, particularly in countries with less developed financial markets, underscore the importance of protecting the financial sector's ability to continue lending to the viable corporate sector while prioritizing reforms to strengthen insolvency and restructuring frameworks (Freund and Pesme, 2021). At the same time, measures should be taken to avoid extending policy support to unviable (e.g. "zombie") firms, particularly in the light of evidence that there has been substantial mistargeting of public support (Cirera et al., 2021c). *Third*, when formulating policy response, competition authorities must weigh the rising concentration due to the exit of smaller firms against the evidence that many times these exiting firms could be less productive. *Fourth*, evidence that the COVID-19 recovery may be less jobs-intensive than the contraction suggests a role for labor market policies to facilitate employer-employee matches (see Groh et al. (2015, 2016) for some instruments that have been shown to be effective). And *fifth*, while digital technology has proven to be an effective means of mitigating the impact of the crisis on firm performance, too few businesses have successfully adopted digital, with small firms particularly lagging behind. Even when businesses have access to technology, they do not use it intensively or across the full range of business functions (Cirera et al., 2020). Thus, policies to facilitate technology adoption will not only help firms weather the effects of the current crisis, but also set the foundations for faster productivity growth.

The ongoing tug-of-war between new COVID-19 variants and treatment advances means that the ultimate depth and duration of the economic shock remains uncertain. Continued efforts to collect timely, policy-relevant data on crisis impacts, adjustments, and policy responses will be critical to ensure the efficiency and effectiveness of policy measures, protect livelihoods, establish the foundations for a sustainable and productivity-driven recovery, and improve the arsenal of tools for addressing future shocks.

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Appendices

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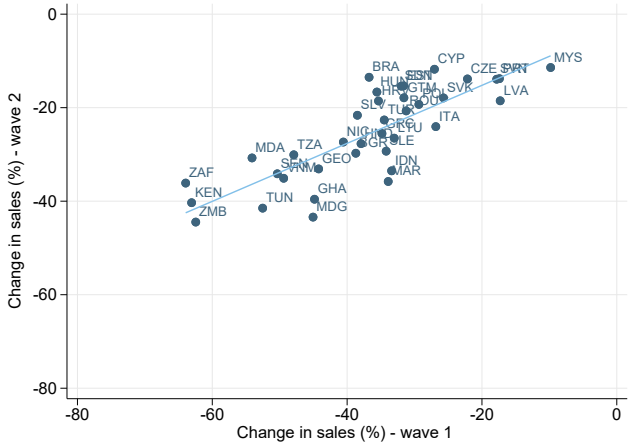
B. Data

B.1 Introduction figures

Figure B1: Change in sales by wave

(a) Controlling for mobility



(b) Not controlling for mobility

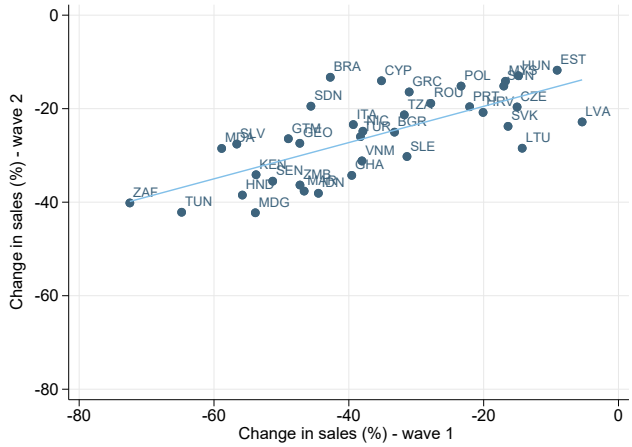
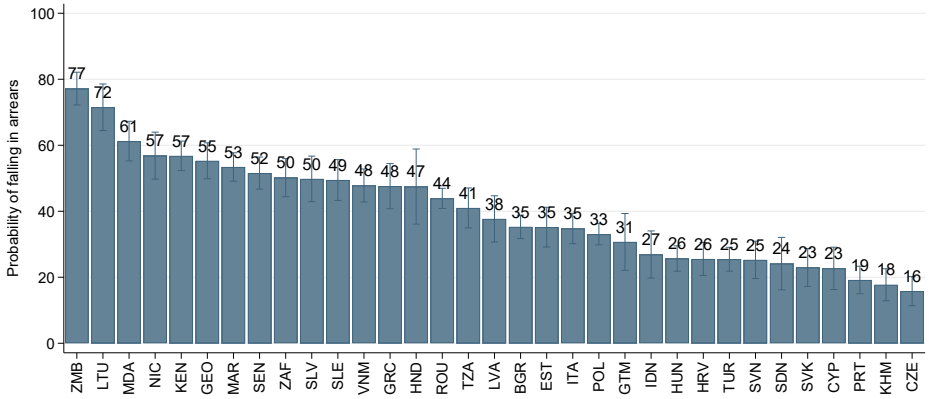


Figure B2: Predicted probability of falling into arrears by country



B.2 Sample description

Table A1: Number of firms in the sample at the country level

Country	Wave 1	Wave 2	Balanced panel	Country	Wave 1	Wave 2	Balanced panel
BGR	1,498	1,411	965	MDA	286	283	250
BRA	1,638	1,072	1,072	MDG	900	1,947	633
CYP	171	177	143	MYS	1,374	1,374	1,374
CZE	405	402	336	NIC	235	198	196
EST	273	360	273	POL	2,340	1,665	1,500
GEO	614	589	544	PRT	820	822	707
GHA	4,107	3,501	3,501	ROU	1,474	1,134	1,079
GRC	532	545	500	SDN	531	312	118
GTM	237	195	189	SEN	508	502	374
HND	206	166	164	SLE	494	419	292
HRV	351	336	310	SLV	494	424	419
HUN	630	647	557	SVK	338	305	281
IDN	873	712	712	SVN	249	252	174
ITA	454	473	397	TUN	3,361	2,465	2,283
KEN	1,842	1,642	1,635	TUR	1,434	1,484	388
KHM	512	499	400	TZA	982	992	529
LTU	214	358	214	VNM	496	499	485
LVA	244	266	181	ZAF	2,067	599	576
MAR	873	805	678	ZMB	563	572	544

B.3 Data cleaning and harmonization

Even though the BPS is based on a global questionnaire, there are some differences in the menu of options for some questions. These idiosyncrasies correspond to the context of each country. Each country's dataset goes through a process of harmonization to ensure comparability. This paper employs the harmonized options. It is worth noting that the number of observations may vary across figures as a result of this harmonization process.

In addition, each individual country dataset has sampling weights that respond to their specific sample design. Due to those differences in design, in this case, we do not use sampling weights.

In the case of panel observations, size and sector categories were obtained from the wave 1 survey. These questions were not included in the second wave for panel firms to reduced respondents' burden. For new and replacement firms included in wave 2, sector and size were obtained from the wave 2 questionnaire.

B.4 Analyzing firm attrition

As previously mentioned in section 3.2, the average attrition rate is 28%. However, as shown in Figure B3, some countries in the Sub-Saharan Africa region exhibit attrition rates above 70%. When we analyze the firms' baseline characteristics associated with attrition in Figure B4, we observe that the probability of observing a firm in wave 2 is lower for smaller firms (microenterprises and small),

as well as for retail firms. Also, firms that exhibited larger decreases in sales and were in arrears in wave 1 are less likely to be part of the wave 2 sample.

Still, when we compare the observable characteristics of the unbalanced panel across waves (Figure B5), the samples are balanced in most of the covariates. This means that replacements tend to follow the characteristics of the original sample. Only retail firms have decreased their proportion in favor of manufacturing firms, which exhibit a higher share relative to wave 1. Something similar is observed in the case of small firms, which have a slightly lower proportion in this second wave, while the share of microenterprises is higher.

Figure B3: Attrition rate by country

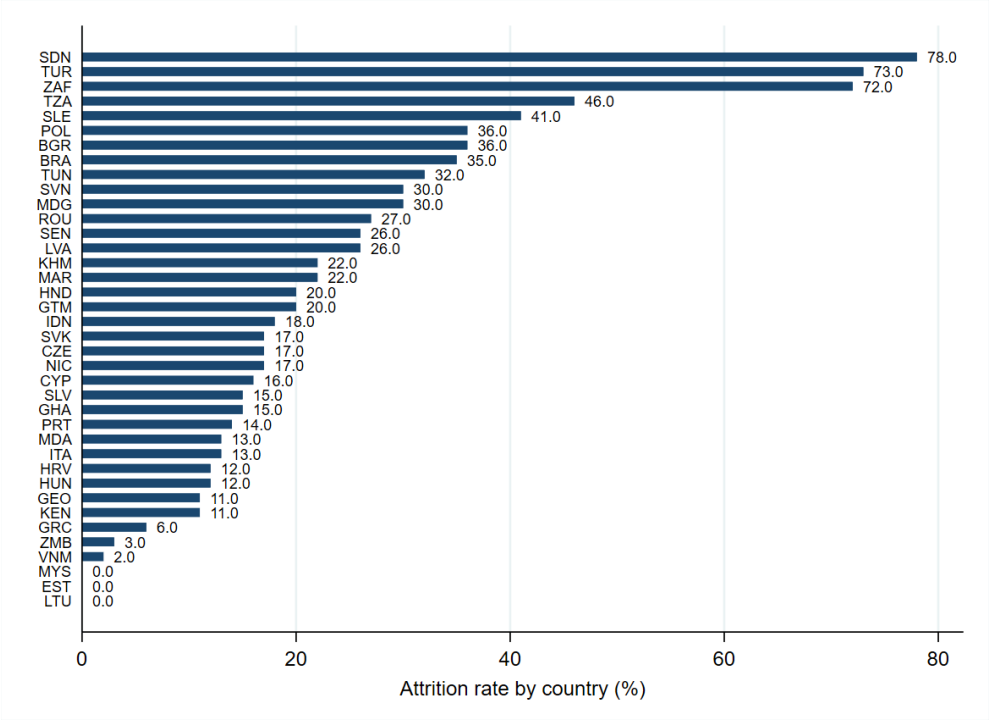
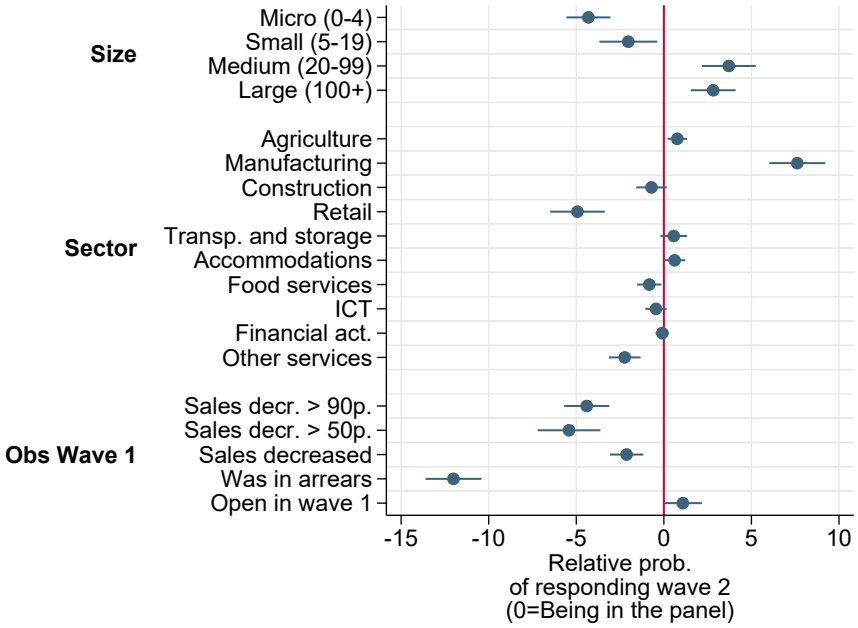
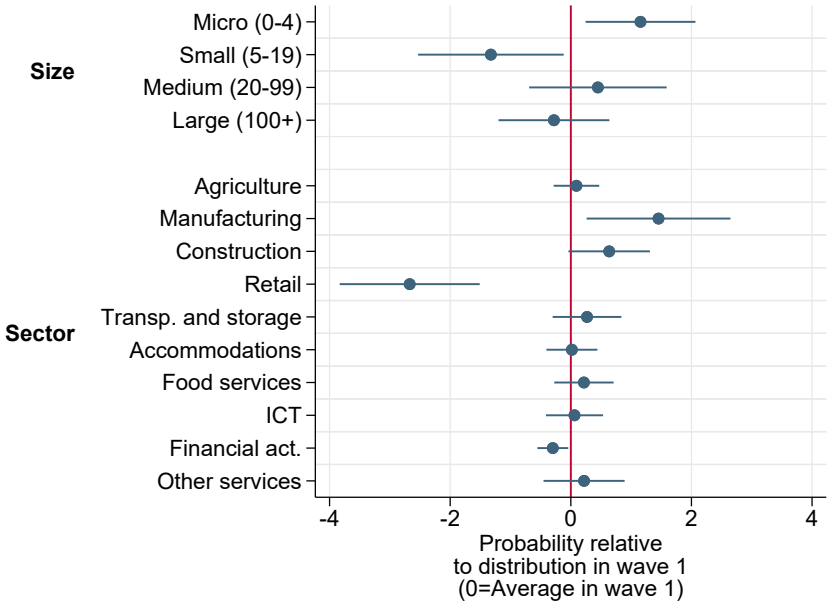


Figure B4: Attrition test on respondents of wave 1



Note: This is based on the panel firms. The probability of a firm responding to wave 2 is computed based on wave 1 characteristics.

Figure B5: Distribution across waves, using the pooled cross section



Note: This is based on the pooled cross-section; t-tests on observables across the two waves is performed using both panel and new firms.

B.5 Measuring the severity of the crisis and mobility

As previously mentioned, the severity of the shock is proxied using the Google mobility index (Google, 2021). This indicator is based on anonymized data of visits and lengths of stay in different transit stations relevant to measuring social distancing, compared to a baseline period (January-

February, 2020). For countries where Google mobility data are not available, we predict mobility using the stringency of the lockdown restrictions provided in Hale et al. (2021). This measure is a 0-100 index based on nine indicators analyzing policies like travel bans, restrictions on internal movement, and workplace closures, among others.

C. Additional figures on stylized facts

Figure C1: Severity of the crisis and mobility restrictions

(a) By wave (b) By country type

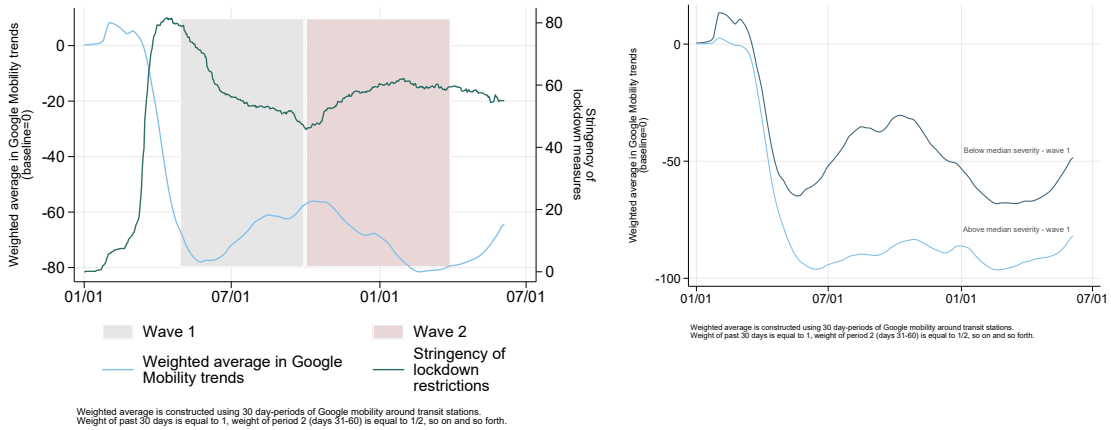


Figure C2: Robustness check: Methods to deal with attrition and selection bias

(a) Predicted change in monthly sales

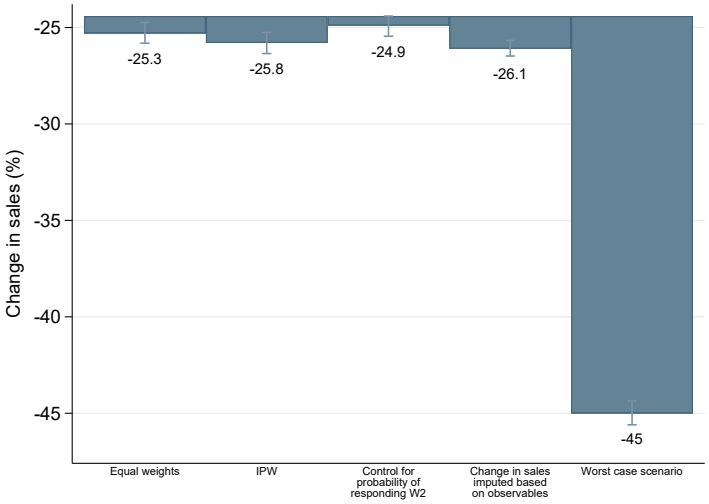


Figure C3: Binscatter expectation about sales and observed change in sales

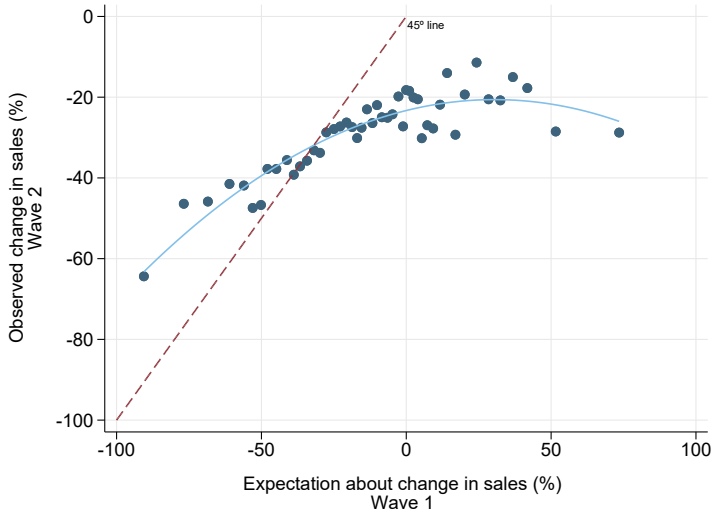
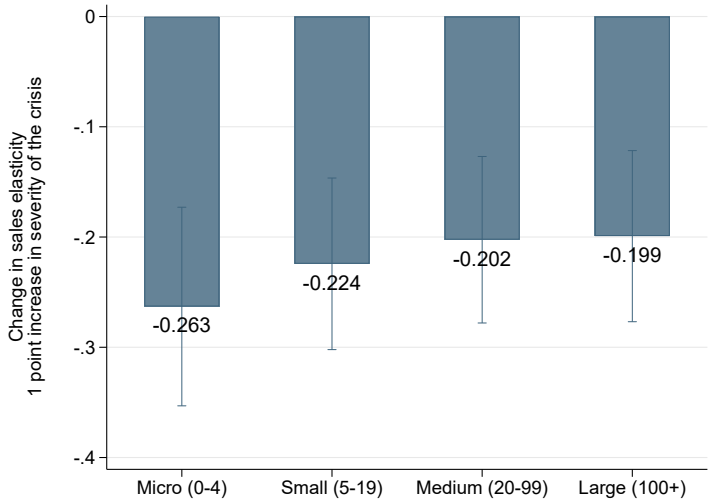


Figure C4: Elasticity of mobility disruptions

(a) By size



Notes: The differences in the elasticity of sales to mobility disruptions are not statistically significant across sizes.

Figure C5: Probability of falling into arrears by sector

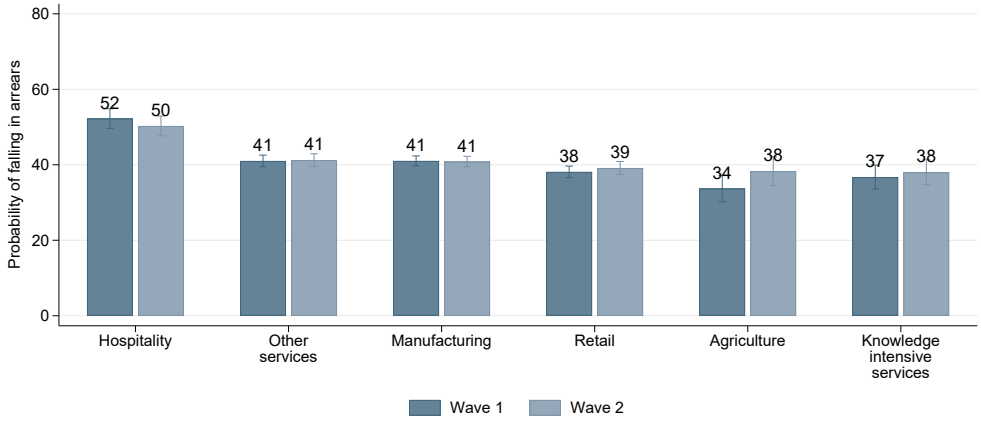


Figure C6: Elasticity of mobility disruptions

(a) By sector

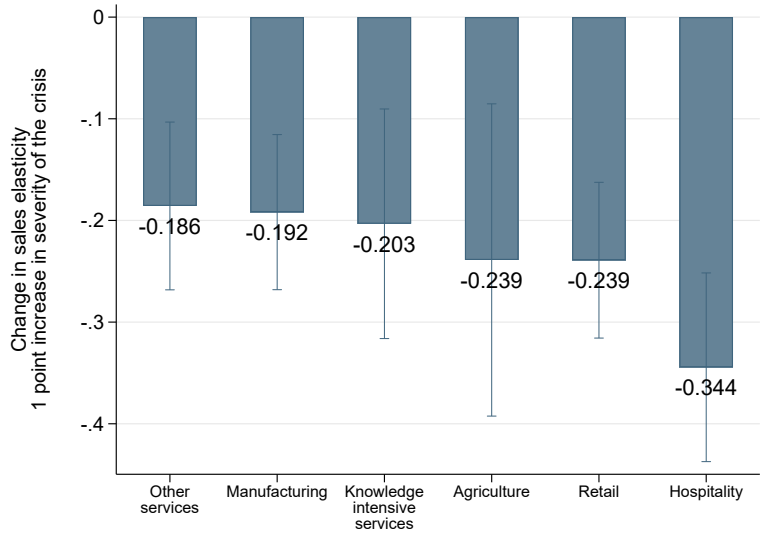


Figure C7: Predicted change in monthly sales relative to 2019 by Labor productivity (retail)

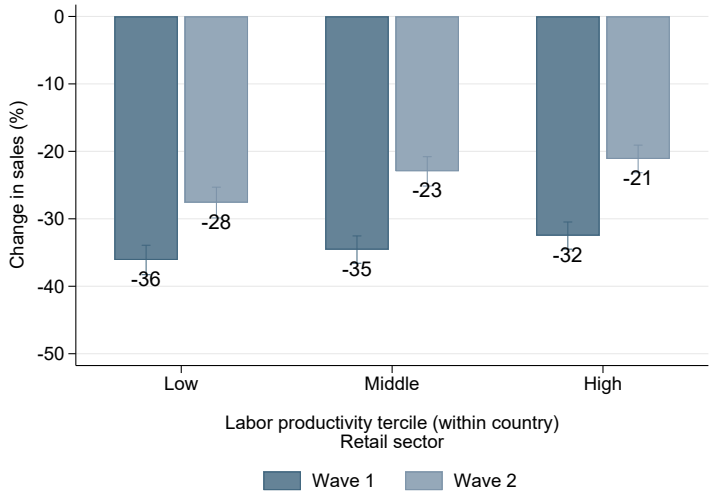
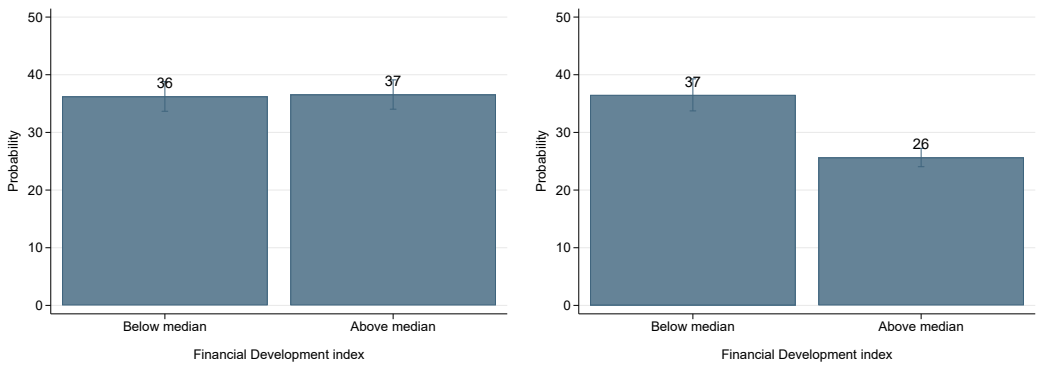


Figure C8: Predicted probability of falling into arrears by financial development

(a) Recovery from arrears

(b) New firms falling into arrears



As shown in panel (a), the good news is that the probability of recovering from arrears is similar regardless of financial development. However, as shown in panel (b), in less financially-developed markets, the probability of new firms falling into arrears is significantly higher.

Figure C9: Predicted probability of falling into arrears by financial development and indebtedness

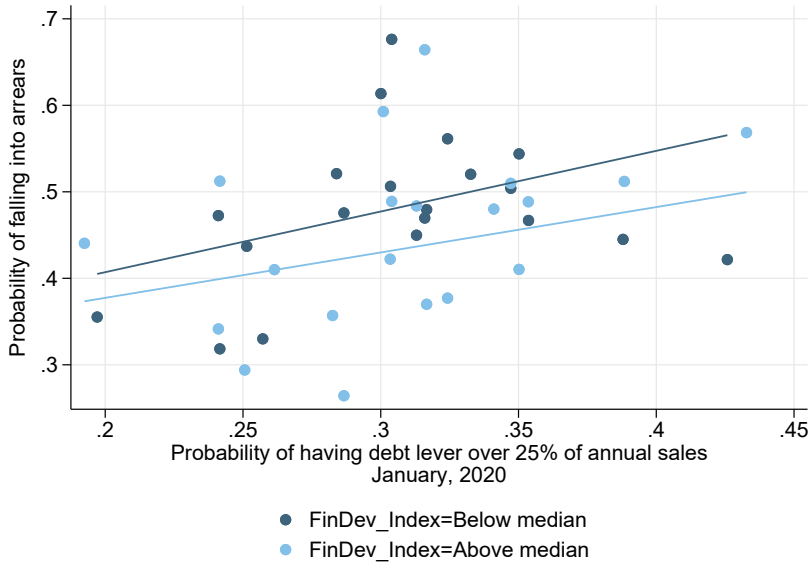
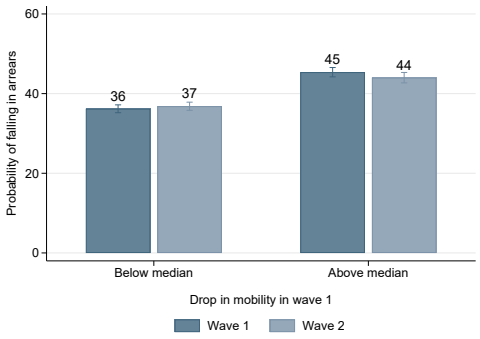
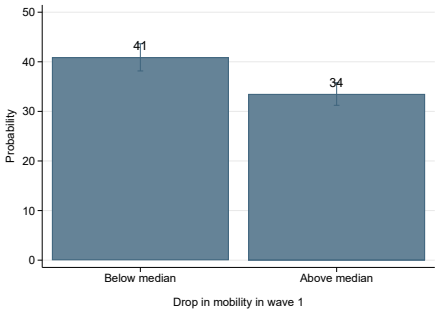


Figure C10: Probability of falling into arrears by severity of initial mobility drop

(a) Probability of falling into arrears



(b) Recovered from arrears



(c) New firms falling into arrears

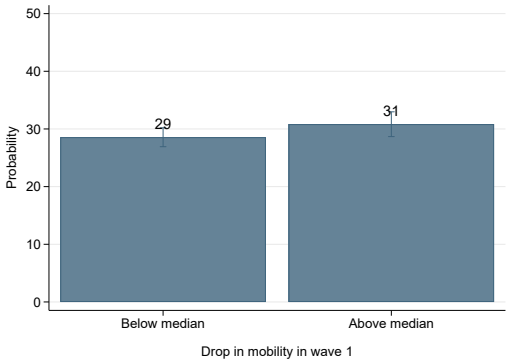
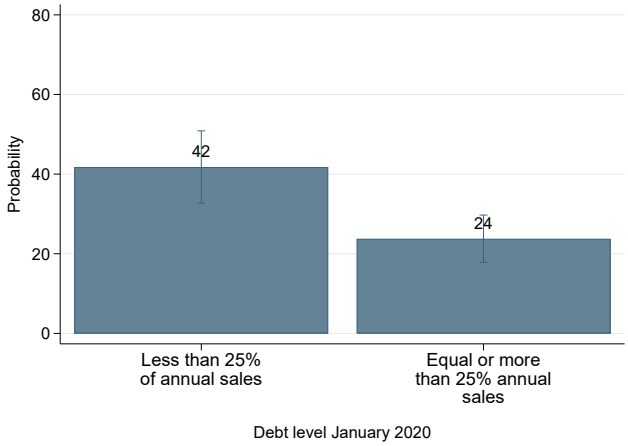


Figure C11: Predicted probability of falling into arrears by debt level

(a) Recovered from arrears



(b) New firms falling into arrears

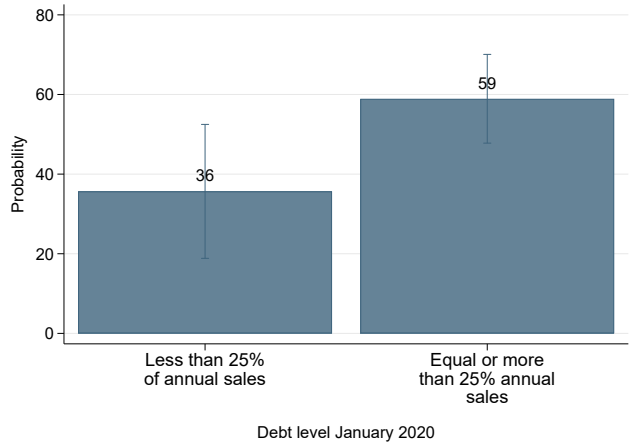
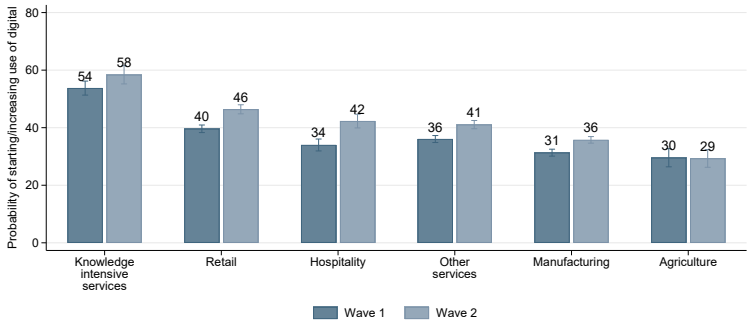


Figure C12: Predicted probability of digitalization

(a) Increase use of digital tech.



(b) Investment in digital solutions

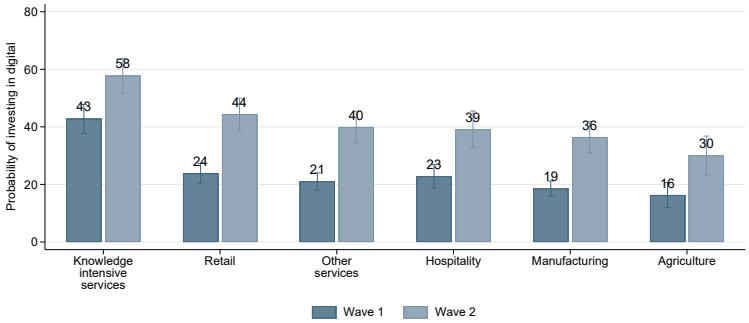


Figure C13: Employment elasticity shock by use of digital and sector

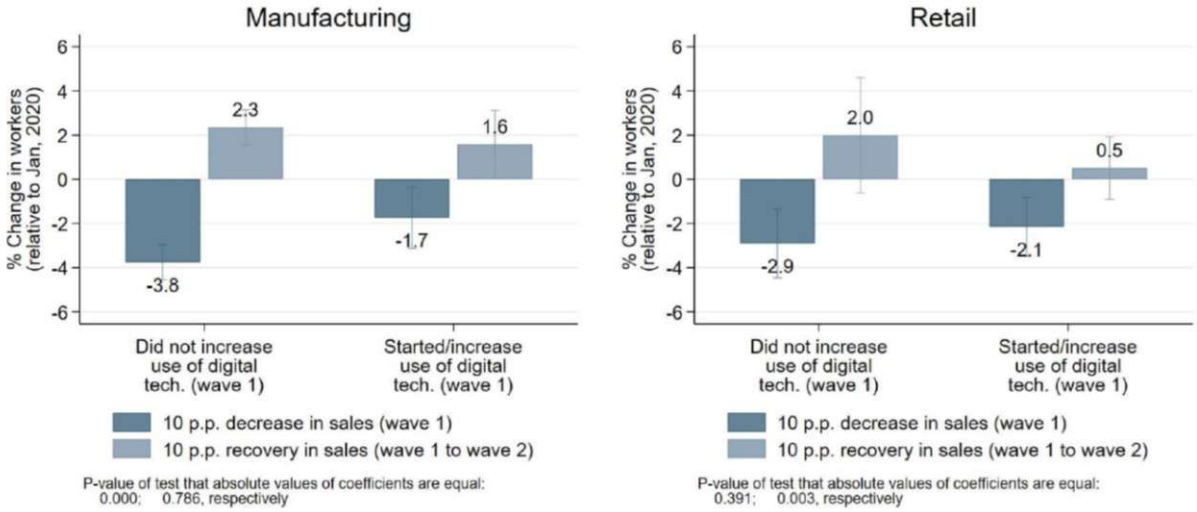


Figure C14: Predicted probability of innovating

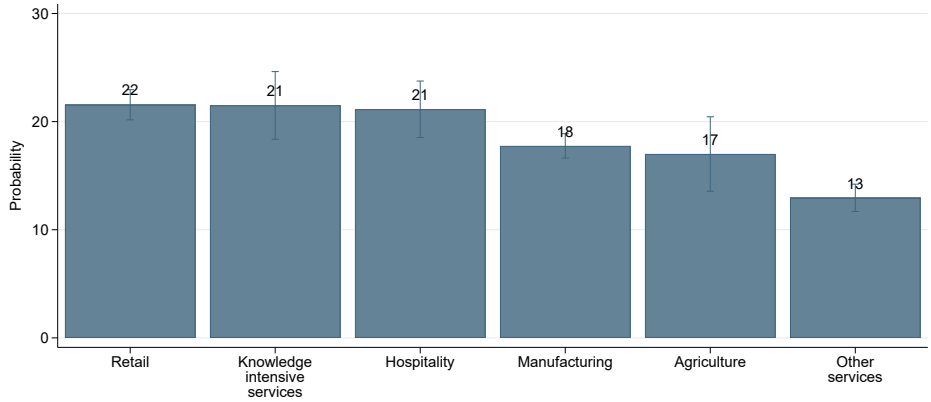


Figure C15: Predicted probability of digitalization by firm productivity. Wave 2.

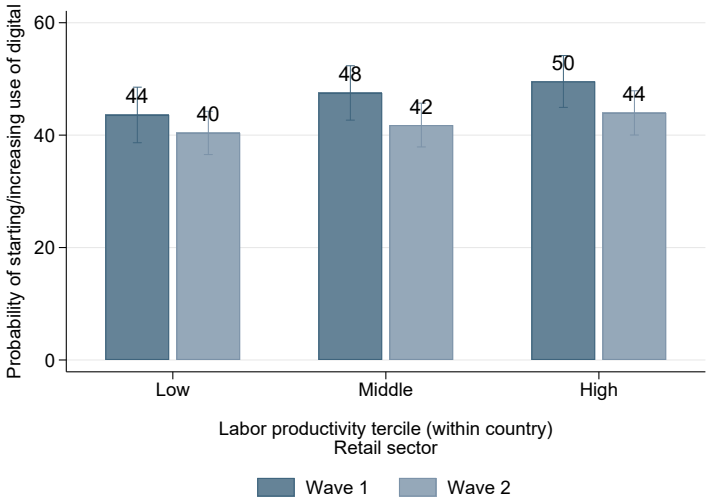
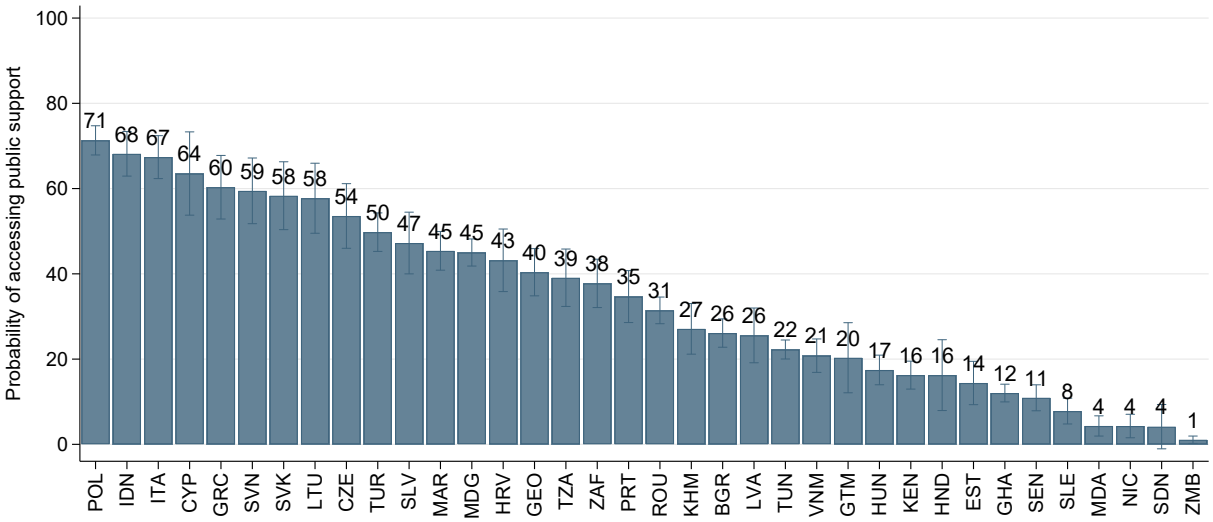


Figure C16: Predicted probability of accessing public support by country. Wave 2.



D. Questionnaire

COVID-19 – BUSINESS PULSE SURVEY (COV-BPS)

The World Bank

2020 – 2nd Wave

QUESTIONNAIRE

Firm ID	**id**	Unique identifier
Date and time of the interview (start)	**cov0**	Date and time

COV0. General characteristics/Screener

Question	Variable	Answer
What type of product or service (describe) represents this establishment's largest share of current sales?	**cov0b**	Text (Product with largest share of annual sales)
How many paid workers (full-time and part-time) does this establishment have at the moment? INSTRUCTION: Include all full time and part time paid workers.	**cov0c**	_____ Total number of workers
What is the total share of female workers at the moment?	**cov0d**	_____% Women

COV1. Operation status: Impact of COVID

Question	Variable	Answer
What is the current status of this establishment?	**cov1a**	0=Open 1 = Partially open (due to government regulations) 5 = Partially open (own choice) 2 = Temporary closed (mandated by government) 3 = Temporary closed (own choice) 4= Permanently closed
What is the main reason to close the business? **CONDITION: Ask only if cov1a = 4 or cov1a=3** **SKIP: go to cov4a if cov1a==4**	**cov1b0**	1= Insufficient demand 2=Not enough cash to pay for costs 3= No access to external finance to pay for costs 4= Problem in accessing inputs 5= Health concerns among staff and customers 6 = Other (Specify ____**cov1b01**)

For how many weeks has this establishment been closed? **CONDITION: Ask only if cov1a=2 OR cov1a=3**	**cov1b1**	Number of weeks_____ -9 = Don't know
When are you expecting that this business will resume operations? **CONDITION: Ask only if cov1a =2 OR if cov1a =3**	**cov1b3**	1 = Less than 2 weeks 2 = Between 2 and 4 weeks 3 = Between 1 and 2 months 4 = Between 2 and 6 months 5 = More than 6 months -9 = Don't know (spontaneous)
Comparing this establishment sales for the last 30 days (before this interview) with the same period in 2019, did the sales? **CONDITION: Ask if only cov1a=0 or cov1a=1 or cov1b1<=4**	**cov1c**	1= Increase 2=Remain the same 3=Decrease -9=Don't know (spontaneous)
Increased by how much? **CONDITION: Ask only if cov1c =1**	**cov1c1**	(%) change
Decreased by how much? **CONDITION: Ask only if cov1c =3**	**cov1c2**	(%) change
Comparing this establishment sales for the last 6 months with the same period in 2019, did the sales?	**cov1c3**	1= Increase 2=Remain the same 3=Decrease -9=Don't know (spontaneous)
Increased by how much? **CONDITION: Ask only if cov1c3 =1**	**cov1c4**	(%) change
Decreased by how much? **CONDITION: Ask only if cov1c3 =3**	**cov1c5**	(%) change

Question: In the last 30 days (before this interview), how many workers (were/have):	**Variable**	**Answer**
Newly hired (don't include if contract was extended or renewed)	**cov1d1**	Numbers
Laid off	**cov1d2**	Numbers
Question: Out of those workers that were not laid off, how many were…	**Variable**	**Answer**

INSTRUCTION: More than one condition may apply to the same worker (e.g., salary AND hours reduced)		
Granted leave of absence without payment[1]	**cov1d3a**	Numbers
Granted leave of absence with payment (all types of paid leave, paid by firm or through public support programs)[2]	**cov1d3b**	Numbers
Had their salary, wages, or benefits reduced[3]	**cov1d4**	Numbers
Had their hours reduced[4]	**cov1d5**	Numbers

COV2. Channels affecting operations

Question:[5]	Variable	Answer
Comparing this establishment hours of operation for the last 30 days (before this interview) with the same period in 2019, did the number of hours of operation per week? **CONDITION: Ask if only cov1a=0 or cov1a=1 or cov1b1<=4**	**cov2a**	1= Increase 2=Remain the same 3=Decrease -9=Don't know (spontaneous)
Increased by how much? **CONDITION: Ask only if cov2a =1**	**cov2a1**	(%) change
Decreased by how much? **CONDITION: Ask only if cov2a=3**	**cov2a2**	(%) change
In the last 30 days (before this interview), did this establishment have to cancel any sale orders because there were no inputs for production (they were delayed or interrupted)? **CONDITION: Ask if only cov1a=0 or cov1a=1 or cov1b1<=4**	**cov7a**	1 = Yes 2 = No
What is the percentage of (monthly) sales that those cancelled transactions represent? **CONDITION: Ask only if cov7a =1**	**cov7b**	Share ____% -9 = Don't know

[1] This question refers to workers who are not laid off
[2] This question refers to workers who are not laid off
[3] This question refers to workers continuing to work
[4] This question refers to workers continuing to work
[5] If there is a shutdown longer than a month, consider using 30 days before the shutdown as a reference period.

How has this establishment adjusted (or is envisioning to adjust production) when essential inputs have been delayed or interrupted? INSTRUCTION: Choose all that apply	**cov7c**	1= No change, waiting until the situation improves 2=Expand the number of local suppliers 3= Expand the number of foreign suppliers 4= Increased in-house production of inputs 5=Keep larger inventories 6=Others [Please specify – **cov7c1**]
As of today, for how many **weeks** could this establishment continue paying all costs and payments (such as payroll, suppliers, taxes or loan repayment) with the cash available?	**cov2g**	_____Number of weeks 0 = No cash available 9999 = A year or more
And for how many additional **weeks** this establishment could continue paying all costs and payments (such as payroll, suppliers, taxes or loan repayment) relying on external sources of finance that you have access to? Condition: Skip if cov2g==9999	**cov2g1**	_____Number of weeks 0 = No access to external sources of finance 9999 = A year or more
Since the COVID-19 outbreak started (February 2020), has this establishment needed any adjustments in credit or loan repayment terms and/or schedule?	**cov2g2**	0 = No outstanding liabilities 1 = Yes 2 = No
Is it expected that this establishment will fall in arrears in any of its outstanding liabilities in the next 6 months?	**cov3d**	1 = Yes. It is already in arrears. 2 = Yes. It will fall in arrears. 3 = No
Is it expected that this establishment's clients will delay payments or fall into in arrears in any of their outstanding liabilities with your company in the next 6 months?	**cov3d1**	1 = Yes. They are already late or into arrears. 2 = Yes. They will be late or fall in arrears. 3 = No 4 = Not applicable
What are the main difficulties you currently face in accessing finance? INSTRUCTION: Choose up to 3 options	**cov2h**	1 = No difficulty 2 = Interest rates too high 3 = I have no guarantee / collateral 4 = Already have too many outstanding loans 5 = Repayment risk too high due to market uncertainty 6 = Supplier are less willing to provide inputs on credit and/or loans 7= Not interested 8 = Other (Specify **cov2h1**)

COV3. Expectations and uncertainty

Question: **Regular scenario (most likely/probable scenario)**	Variables	Answer
Looking ahead to the next 6 months,[6] do you expect that your sales will increase, decrease, or remain the same, compared to the same period last year?	**cov3a_1**	1= Increase 2=Decrease 3=Remain the same
Increase by how much? CONDITION: Ask only if **cov3a_1**=1	**cov3a_1a**	change __%
Decrease by how much? CONDITION: Ask only if **cov3a_1**=2	**cov3a_1b**	change __%
On a scale of 0 to 100, what is the chance (probability) you believe this will happen? CONDITION: Ask only if **cov0c1 >= 5** in the FIRST WAVE	**cov3a_1L**	Probability__ % (between 0 and 100)

INSTRUCTION: As you know, sometimes businesses don't go as we expect, given that businesses can go better or worse, let us talk about these possible alternative situations:

Question: **Optimistic scenario/alternative**	Scenarios	Variables
In a more optimistic (better) scenario, do you expect that your sales for the next 6 months will increase, decrease, or remain the same, compared to the same period last year?	**cov3a_2**	1= Increase 2=Decrease 3=Remain the same
Increase by how much? CONDITION: Ask only if **cov3a_2**=1	**cov3a_2a**	change ___%
Decrease by how much? CONDITION: Ask only if **cov3a_2**=2	**cov3a_2b**	change ___%
On a scale of 0 to 100, what is the chance (probability) you believe this will happen? CONDITION: Ask only if **cov0c1 >= 5** in the FIRST WAVE	**cov3a_2L**	probability ___% (between 0 and 100)

Question: **Pessimistic scenario/alternative**	Scenarios	Variables
In a more pessimistic (worse) scenario, do you expect that your sales for the next 6 months will increase, decrease, or remain the same, compared to the same period last year?	**cov3a_3**	1= Increase 2=Decrease 3=Remain the same
Increase by how much? CONDITION: Ask only if **cov3a_3**=1	**cov3a_3a**	change ___%
Decrease by how much? CONDITION: Ask only if **cov3a_3**=2	**cov3a_3b**	change ___%

[6] If the survey is planned to be repeated in a short period, use 3 months instead of 6 months for questions **cov3a**, **cov3b**, **cov3c**, and **cov3d**.

In a scale from 0 to 100, what is the chance (probability) you believe this will happen? CONDITION: Ask only if **cov0c1 >= 5** in the FIRST WAVE	**cov3a_3L**	probability ___% (between 0 and 100)

COV4. Policies

Question	Variable	Answer
What would be the most needed policies to support this business over the COVID-19 crisis? CONDITION: Choose up to three options	**cov4a**	1 = Grants (monetary transfer) 2= Deferral of payments (rent, mortgage payments, utility bills, credit payments). 3 = Access to new credit or loans 4 = Fiscal exemptions, tax reductions, or tax deferrals 5 = Wage subsidies 6= Support (technical assistance or subsidies) for adoption of digital technologies 7= Support (technical assistance or subsidies) for adoption of health protocols 8= Support (technical assistance or subsidies) to improve my marketing and/or repackage my product or introduce new products 9 = Support (technical assistance or subsidies) to improve management skills to reduce costs 10=Others [Please specify - **cov4a1**]
Since the outbreak of COVID-19, has this establishment received any national or local government measures issued in response to the crisis?	**cov4b**	1 = Yes 2 = No
Did any of these measures involve any of the following: INSTRUCTION: Choose all that apply **CONDITION: Ask only if cov4b=1** **(Countries can opt for specific national policies list provided: i) The list id complete; and ii) these are recoded back to the list here)**	**cov4c**	1 = Grants (monetary transfer) 2= Deferral of payments (rent, mortgage payments, utility bills, credit payments). 3 = Access to new credit or loans 4 = Fiscal exemptions, tax reductions, or tax deferrals 5 = Wage subsidies 6= Support (technical assistance and/or subsidies) for adoption of digital technologies 7= Support (technical assistance and/or subsidies) for adoption of health protocols 8= Support (technical assistance or subsidies) to improve my marketing and/or repackage my product

		9 = Support (technical assistance or subsidies) to improve organization and managerial practices to reduce costs 10=Others [Please specify - **cov4c1**]
Which of the following options best describe the reason why this establishment did not receive any national or local government measures issued in response to the crisis? **CONDITION: Ask only if cov4b=2** **SKIP: If cov1a=4 go to cov0p**	**cov4d**	1 = I was not aware 2 = Too cumbersome or costly to apply 3 = I am not eligible 4= I don't expect to get it because I don't have the right connections 5 = I have applied but not received it 6 = I do not need it 7 = Others [Please specify - **cov4d1**]

COV5 - Adjustment mechanisms

CONDITION: This section applies if the establishment has 5+ workers (cov0c1>=5) in the FIRST WAVE

Has this establishment started using or increased the use of internet, online social media, specialized apps, or digital platforms in response to COVID-19 outbreak?	**cov5a1**	1 = Yes. It started. 2 = Yes. it increased. 3 = No. It uses, but it has not increased. 4. No, it does not use it.
For which of the following business functions has this establishment started using or increased the use of internet, online social media, specialized apps or digital platforms in response to COVID-19 outbreak? INSTRUCTION: Choose all options that apply CONDITION: Ask only if **cov5a1**=1 OR **cov5a1**=2	**cov5a2**	1 = Business Administration 2 = Production planning 3 = Supply Chain Management 4 = Marketing 5 = Sale 6= Payment methods 7= Service delivery
What is the share of sales of this establishment using external digital platforms, apps, or own website during the last 30 days?	**cov5b**	Share___(%) -9 = Don't know
Has this establishment invested in any new equipment, software or digital solution in response to COVID-19?	**cov5d**	1 = Yes 2 = No
What is the share of workers currently working remotely from home?	**cov5e**	Share____(%) -9 = Don't know
Has this establishment changed or is in the process of changing its products or services in response to COVID-19?	**cov5g**	1 = Yes 2 = No
Does this change imply a brand-new product or service being offered?	**cov5g1**	1 = Yes 2 = No

CONDITION: Ask only if **cov5g**=1		
In the last 30 days, which of the following options best describe competition in your sector of activity?	**cov5h**	1=competition increased 2=competition decreased 3= the level of competition is the same than previous to the pandemic
Which option best describes the reason why competition increased? CONDITION: Ask only if **cov5h**=1	**cov5h1**	1 = There are more competitors in my sector 2 = There is much less demand in my sector
Which option best describes the reason why competition decreased? CONDITION: Ask only if **cov5h**=2	**cov5h2**	1 = Firms in my sector have exited the market 2 = There is more demand in my sector
Since the start of the pandemic, which option best describes what happened to the price of the product or service that accounted for most of your revenue before the pandemic?	**cov5i**	1 = the price of the product has increased 2 = the price of the product has not changed 3 = the price of the product has decreased
By how much the price of the product has changed? CONDITION: Ask only if cov5i=1 or cov5i=3 (use negative sign if decrease, and 0 if no change in price)	**cov5i1**	_____%
Think about the cost to you of making one more unit of the product with the largest share of revenue. Since the start of the pandemic, which option best describes what happened to the cost of the product or service that accounts for most of your revenue?	**cov5j**	1 = the cost of the product has increased 2 = the cost of the product has not changed 3 = the cost of the product has decreased
By how much the cost of your main product or service has changed? CONDITION: Ask only if cov5j=1 or cov5j=3 (use negative sign if decrease, and 0 if no change in cost)	**cov5j1**	_____%

COV5M - Adjustment mechanisms (FOR MICRO FIRMS ONLY)

CONDITION: This section applies if the establishment has less than 5 workers cov0c1<5 in the FIRST WAVE

Question	Variable	Answer
Has this establishment started using or increased the use of phone for marketing, placing orders or introduced other changes in delivery in response to COVID-19 outbreak?	**covm5d**	1 = Yes 2 = No

Has this establishment started using or increased the use of internet, online social media, specialized apps, or digital platforms in response to COVID-19 outbreak?	**covm5e**	1 = Yes 2 = No
Has this establishment changed or is in the process of changing its products or services in response to COVID-19?	**covm5f**	1 = Yes 2 = No
What is the share of sales of this establishment using phone, email, or online during the last 30 days? CONDITION: Ask only if **covm5e** ==1 or **covm5d** ==1	**covm5g**	Share (%) -9 = Don't know
What is the current share of sales from new products? CONDITION: Ask only if **covm5f** ==1	**covm5h**	Share (%) -9 = Don't know
In the last 30 days, how best would you describe competition in your sector of activity?	**covm5i**	1=competition increased 2=competition decreased 3= the level of competition is the same than previous to the pandemic

COV5K – Health protocols

Are you aware of any the protocols and preventive measures to minimize the risk of contagion for COVID-19 in the workplace?	**cov5k1**	1 = Yes 2 = No
Are you implementing any protocols and preventive measures for COVID-19?	**cov5k2**	1 = Yes 2 = No
Which of the following measures has your company taken to minimize the risk of contagion for COVID-19? INSTRUCTION: Choose all that apply **CONDITION: Ask only if cov5k2= 1**	**cov5k3**	1. Health protocols for workers (e.g. temperature measurement and protective equipment such as mask and training on new protocols) 2. Modification in workers' shift and flexibilization of working arrangement 3. Health protocols for customers (e.g. temperature measurement and protective equipment such as mask) 4. Change the layout of the establishment to adjust with social distance (e.g. installation of signaling material, spacing of furniture or equipment, or protection barriers) 5. Adoption of alternative payment methods (contactless) 6 = Other (specify cov_extra17_oth)
Since the beginning of the pandemic, how much did you have to invest to implement these COVID-19 prevention measures within your business? **CONDITION: Ask only if cov5k2= 1**	**cov5k4**	_____ (local currency unit) 0=no investment

COV6 – Baseline

What was the value of total sales of this establishment in 2019? CONDITION: Ask only if **cov6a** =. in the FIRST WAVE	**cov6a**	Number (value of sales) -9 = Don't know
Does this - establishment export?	**cov6b1**	1=Yes 2 =No
What share of this establishment's revenues are obtained from products or services supplied to Government or public owned companies in 2020 until now?	**cov6b2**	_____% (Share) -9 = Don't know
What is the share of exports over sales in 2020 until now?	**cov6b**	Share (%) -9 = Don't know
How many paid workers (full-time and part-time) did this establishment have at the beginning of June 1, 2020? INSTRUCTION: Include all full time and part time paid workers.	**cov6d**	_____ Total number of workers
What was the total amount of this establishment's debts on January 1 2020? Instruction: Please take into account only debts in name of the establishment	**cov6e1**	Number (value of sales) -9 = Don't know
What was the total amount of this establishment's debts on September 1 2020? Instruction: Please take into account only debts in name of the establishment	**cov6e2**	Number (value of sales) -9 = Don't know

Control questions

Same respondent from wave 1 **(SKIP: If cov0p = 1 go to cov0l)**	**cov0p**	1 = Yes 2 = No

Question	Variable	Answer
What option best reflect your main occupation in this establishment?	**cov0f**	1= Owner, CEO, or CFO 2= Manager 3 = Accountant or lawyer 4 = Other (Please specify – **cov0f1**)
Gender of the respondent	**cov0g**	Gender
Contact information (phone)	**cov0h**	Phone

Contact information (email)	**cov0i**	Email
Alternative contact information (phone)	**cov0j**	Phone
Main city of operations	**cov0k**	City

For interviewers/supervisors

Country	**cov0l**	Country
Language of the interview	**cov0m**	Language
Number of calls attempted (for phone interview)	**cov0n**	# of call attempted
Date and time of the interview (end)	**cov0o**	Date and time