Small Firms Through the Pandemic: The Impact of the COVID-19 pandemic in Sao Paulo (Brazil)

Xavier Cirera[1], Rafael Dantas[1], Caio Piza[1], and Caroline Nogueira[1]

[1]World Bank

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Abstract

The COVID-19 pandemic has generated an unprecedented shock to the private sector. Using six rounds of data from the Business Pulse Survey in the state of Sao Paulo, we document the impact on micro and small firms throughout the pandemic. We show that the shape of the pandemic appears to be W shaped and smaller firms in the state of Sao Paulo have not recovered the levels of sales of 2019 a year and a half after the beginning of the pandemic. The recovery has been heterogeneous across sectors, and affected micro-entrepreneurs and firms in the services sector with more intensity. In terms of employment, most firms have managed to make adjustments in the intensive margin, through reductions in wages and hours worked, which has minimized large-scale layoffs; although the most recent lockdown has increased layoffs. Among the surviving companies there is an important increase in digitization, with an average turnover of 30% through digital platforms, much larger than other countries and regions.

1 Introduction

The COVID-19 pandemic and the non-pharmaceutical measures adopted to contain the spread of the pandemic have generated an unprecedented shock to the private sector in Brazil, threatening the country's present and future growth and the progress in the reduction of poverty and inequality. The great risk of the pandemic shock is the destruction of existing productive capacities, which could have major effects on the long-term growth of the country. This effect can be even more devastating if the negative effects, given the composition of the shock, are persistent over time and especially affect the most productive companies. Understanding and quantifying the persistence of impact and the shape of the recovery, and what are the types of firms that are more able to offset the shock is critical not only to design more effective policies that can address short-term job losses, but also to understand the longer term effects that this shock will have on productivity and growth.

In Cirera et al. (2020), using data from the Business Pulse Surveys (BPS) implemented to a large sample of more than 1,500 micro and small firms in the state of Sao Paulo in June and July 2020, we documented a very large negative shock. Specifically, the impact was large in terms of revenue and employment. More than half of the companies in the sample had their operations affected, with an average drop of sales by -53%, and 40% of the companies in the sample having to resort to the dismissal of employees after the shock. The intensity of the impact was comparable to other countries in the region, however, much more severe than the effect suffered by more developed economies in Europe. The shock was especially strongest between the self-employed, women-led companies and firms in the services sector.

This note focuses on the recovery process for small firms in Sao Paulo, and describes the heterogeneity of this recovery using four additional waves of BPS data collection from December 2020 to June 2021. In addition to the impact on sales, the note documents other critical aspects of the recovery such as the adjustment made by firms to respond to the shock or the increase in financial risks.

To advance some of the results, smaller firms, especially micro entrepreneurs (MEI), and firms in other services sectors have been the most severely hit. Firms did not recovered the levels of sales of 2019 by June 2021 and the median firm was still at almost 40% lower sales. While the recovery was happening at a good path in international comparison, the last lockdown in March 2021 was an important setback for the recovery of small firms, regressing growth to levels of last year. The shape of the recovery appears to be W shaped.

The note is structured as follows. Section 2 describes the main data used. Section 3 focus on describing the main impacts on firms' activities and performance. Section 4 focus on financial risk and access to credit. Then, we concentrate on value chain bottlenecks.

Section 6 describes some of the measures adopted by firms to adapt to the context of the pandemics in terms of digitization and access to public support. In Section 7 we focus on investigating if firms' quality of managerial skills is a key internal factor that might explain the heterogeneity of the pandemic impacts on firms. In Section 8 we document expectations and insights in the way forward to recovery. In Section 9 we document the role of policies in smoothing the shock of the pandemic, and the last section concludes.

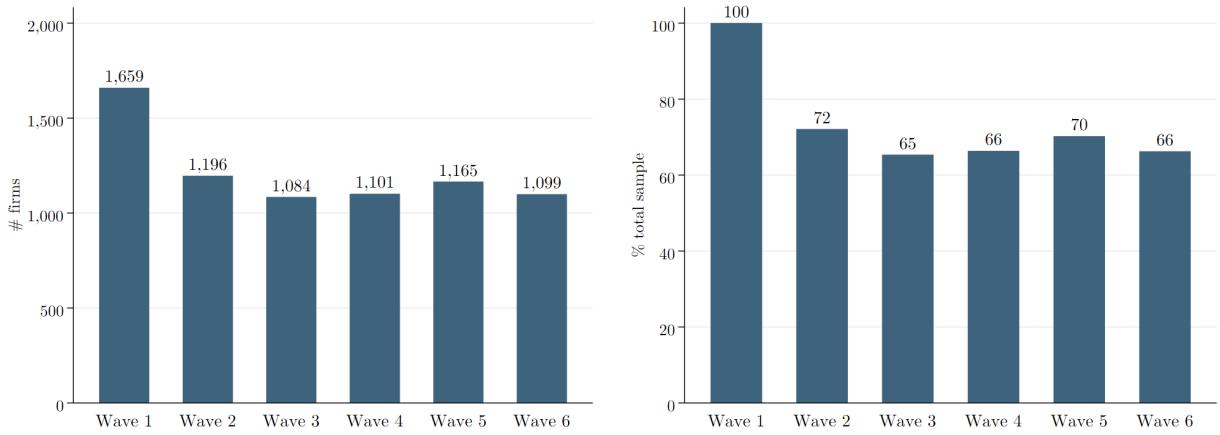
2 Data

We leverage the data from the World Bank's Business Pulse Survey (BPS) which assess the short-term and ongoing impacts of the COVID-19 pandemic on the private sector. On a global scale, data was collected for more than 120,000 businesses in 60 countries using the same questionnaire. The information collected includes critical dimensions of the private sector, such as the status of operations, sales, liquidity and insolvency, employment adjustments, expectations and uncertainties about the future, and the need for and access to public support.

Survey data for Brazil was collected in the state of Sao Paulo, Brazil's largest state. The sample framework used was adopted from the Brazilian Business Support Program to Micro and Small Enterprises (*Serviço Brasileiro de Apoio às Micro e Pequenas Empresas* - SEBRAE), a Brazilian institution aimed at supporting entrepreneurship and the competitiveness of small firms, and is representative of small firms only - microentrepreneurs, micro and small firms strata.

Data collection took place through Computer-Assisted Telephone Interviewing (CATI) and it was implemented in six waves from June 2020 to June 2021. Figure 1a shows the number of firms interviewed in each wave. After some attrition after wave 1, we managed to keep around 1100 firms in the sample each wave. Figure 1b shows the share of the total sample in each wave. No sample replacement was made and 1,481 firms are observed in at least two waves.

Figure 1: Sample attrition

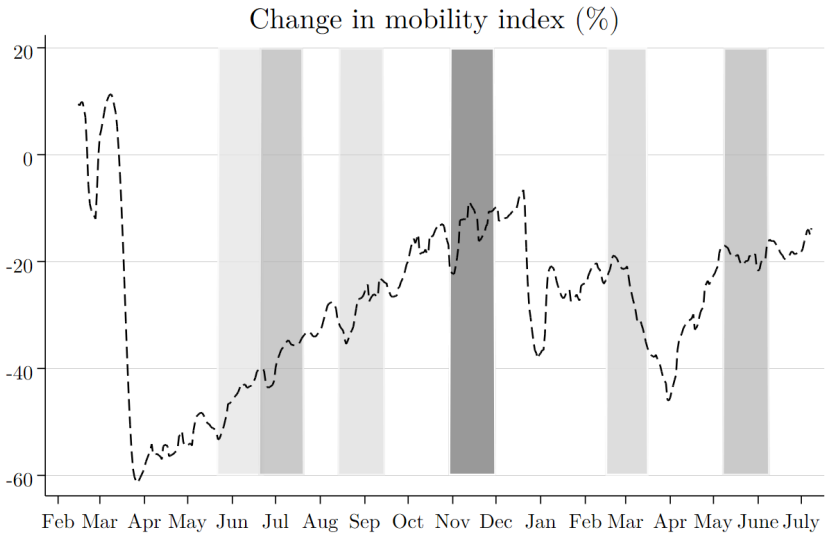


(a) Sample size by wave

(b) Share of total sample by wave

Figure 2 illustrates the context of the data collection by presenting the period for which each wave of interviews were conducted. We proxy the incidence of the shock using the evolution of urban mobility measured with state-level Google Mobility Data. The mobility data compares current mobility with the baseline levels before the outbreak of the COVID-19 pandemic, reflecting the initial shock and the placement of restrictions. After an increase in mobility since March 2020, the peak of lockdown measures, mobility increased until January 2021, which decreased due mainly to the holiday period in Brazil. New lockdown measures were introduced in March-April 2021, which reduced mobility to the periods of July 2020. By June 2021 mobility was converging to the levels of October 2020.

Figure 2: Mobility in transit stations and survey period from wave 1 to 6



As mobility is an outcome variable that includes the effects of lockdown measures and the demand and supply shock, this correlates with the sales dynamics, as we show below.

3 Impact on firms performance

How did firms recover during the period and what was the effect of the latest lockdown on the recovery trend? This section describes this recovery process, as well as some of the key performance indicators.

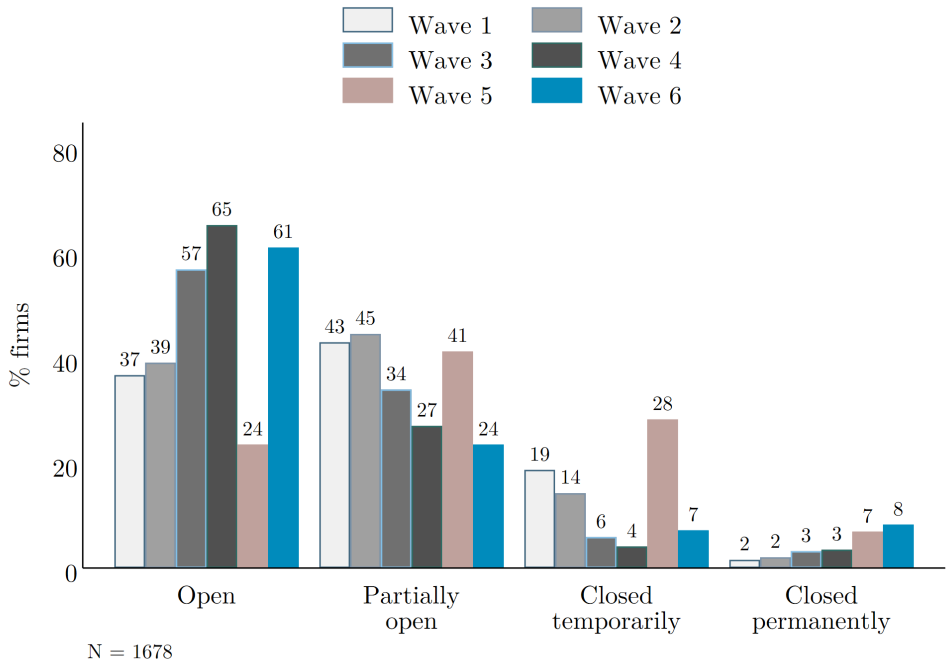
3.1 Operations

One the most important channels through which the non-pharmaceutical interventions to fight the pandemic adopted by the government authorities affects firm performance is by impacting operations. During closures, businesses are affected by their ability to produce goods and services and to interact with consumers. Some of these closures are mandated by local authorities but in some cases businesses can also decide to restrict operations if they cannot ensure that they can cover all costs of operations.

After the onset of the shock, firms were getting back to full operation status, but closures increased after the fifth wave due to further mobility restrictions. Figure 3 plots the percentage of firms by business operation status at the time of the interview by wave. While

two thirds of businesses were fully open and 28% partially opened by the end of the year, the lockdown in March implied a significant temporary closure. Only 24% of firms were fully opened, 40% of firms were partially opened and 30% closed temporarily.[1] In the last wave, 8% of remaining and surviving firms in the sample decided to permanently close, an important final blow for some firms.[2] Restrictions on operations is an important negative channel of the pandemic shock.

Figure 3: Status of the business at the time of interview



3.2 Sales

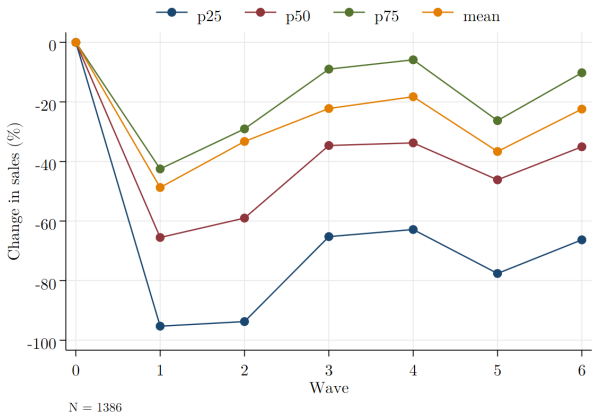
Consistent with this negative shock to operations, sales growth experienced a negative blow to the recovery trend. Figure 4a shows the evolution of sales by quartile in terms of sales change from the same period in 2019. Several factors are important when looking at the impact of the shock on sales. First, while by the fourth wave there was a significant recovery for small firms, the latest lockdown pushed firms to the levels of August 2020, and by June 2021 small firms had still not recovered the levels of sales of 2019. The recovery appears to

[1] When considering the operating status of firms, we group businesses temporarily closed, whether closure is due to the firm's own choice or mandated by the local government.

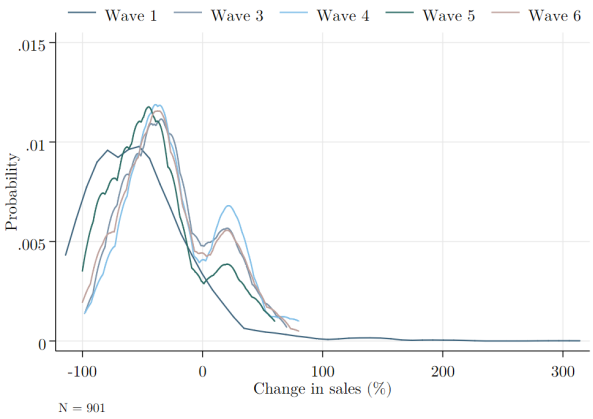
[2] Given the focus on the same cohort of firms over the six waves, the data collected does not measure with precision market dynamics such as full exit and entry.

be following a W shape.

Figure 4: Average change in sales



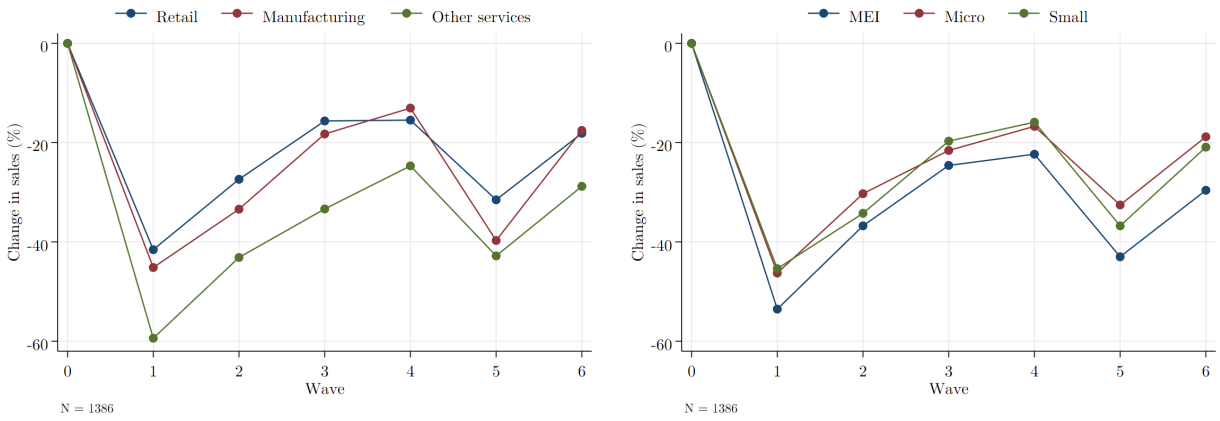
(a) Average change in sales relative to same period of 2019



(b) Estimated distribution of the variation in sales

Second, and looking at differences in firms dynamics, there is an increasing gap in the heterogeneity of performance above and below the median. Firms at the top quartile were almost recovering the levels of sales by December 2020, but small firms below the median have continued for about one year at sales levels below 50% for most of the period. This is translated in an increasing bi-modality in Figure 4b, suggesting two different dynamics, one of recovery and another one of persistent decline in sales. Third, micro entrepreneurs (MEI) is the most affected group of businesses, while micro and small face a similar recovery dynamic (Figure 5b). Fourth, the services sector continue to be the most affected sector overall, and while the small firms manufacturing sector was close to full recovery in December 2020, the March-April 2021 lockdown slowed down the recovery significantly.

Figure 5: Average change in sales by sector and size



(a) By sector

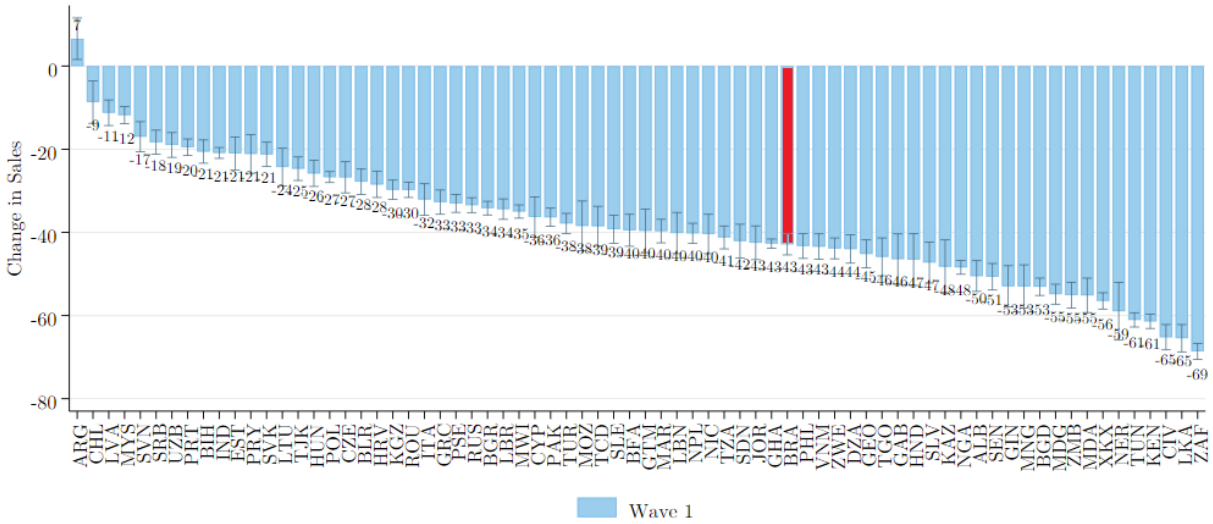
(b) By firm size

One important question is how the shock experienced in Sao Paulo compares to the rest of the world. The BPS allows to have some comparison across countries (Apedo-Amah et al., 2020). Figure 6 shows the average impact of the shock across countries in wave 1, which is during the May-July 2020 period, and highlights selected countries in Latin America. Brazil corresponds to Ceará and Sao Paulo. The shock in the first wave was large and felt strongly in Brazil, with a negative shock larger than the median country in the global sample. The initial show was felt strongly for small firms in Sao Paulo looking from an international perspective.

Figure 7 shows the results for the second and third global wave[3], which corresponds to the fourth wave in Sao Paulo - prior to the lockdown. The results show a faster recovery in Sao Paulo than other countries inside and outside the LAC region, although this has been halted by the March-April 2021 lockdown. But overall the recovery was faster in Sao Paulo from an international perspective.

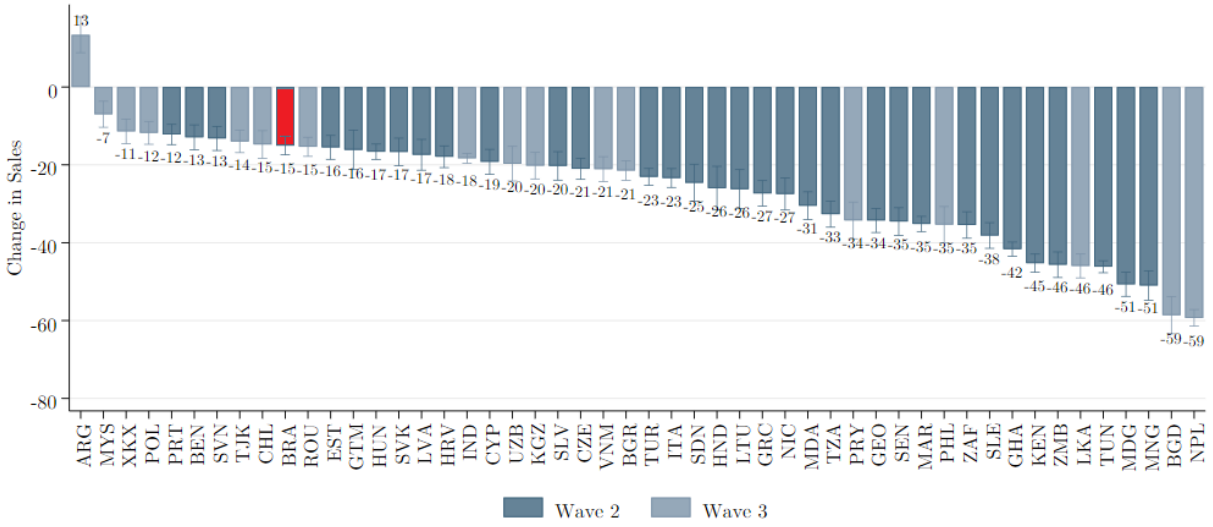
[3]The iso country codes are represented as follows: ALB (Albania); ARG (Argentina); ARM (Armenia); BEN (Benin); BFA (Burkina Faso); BGD (Bangladesh); BGR (Bulgaria); BIH (Bosnia and Herzegovina); BLR (Belarus); BRA (Brazil); CHL (Chile); CIV (Cote d'Ivoire); COL (Colombia); COM (Comoros); CYP (Cyprus); CZE (CzechRepublic); DZA (Algeria); EST (Estonia); GAB (Gabon); GEO (Georgia); GHA (Ghana); GIN (Guinea); GRC (Greece); GTM (Guatemala); HND (Honduras); HRV (Croatia); HUN (Hungary); IDN (Indonesia); IND (India); ITA (Italy); JOR (Jordan); KAZ (Kazakhstan); KEN (Kenya); KGZ (Kyrgyzstan); KHM (Cambodia); LBN (Lebanon); LBR (Liberia); LKA (Sri Lanka); LTU (Lithuania); LVA (Latvia); MAR (Morocco); MDA (Moldova); MDG (Madagascar); MLI (Mali); MNE (Montenegro); MNG (Mongolia); MOZ (Mozambique); MWI (Malawi); MYS (Malaysia); NER (Niger); NGA (Nigeria); NIC (Nicaragua); NPL (Nepal); PAK (Pakistan); PHL (Philippines); POL (Poland); PRT (Portugal); PRY (Paraguay); PSE (Palestine); ROU (Romania); RUS (Russia); SDN (Sudan); SEN (Senegal); SLE (Sierra Leone); SLV (El Salvador); SRB (Serbia); SVK (Slovakia); SVN (Slovenia); TCD (Chad); TGO (Togo); TJK (Tajikistan); TUN (Tunisia); TUR (Turkey); TZA (Tanzania); UZB (Uzbekistan); VNM (Vietnam); XKX (Kosovo); ZAF (South Africa); ZMB (Zambia); and ZWE (Zimbabwe).

Figure 6: Average changes in sales across countries (Wave 1).



Note: Predicted mean of the percentage change in sales, estimated from linear regressions controlling for firm size, sector, and mobility relative to the pre-pandemic level. Data from the first wave.

Figure 7: Average changes in sales across countries (Wave 2 & 3).



Note: Predicted mean of the percentage change in sales, estimated from linear regressions controlling for firm size, sector, and mobility relative to the pre-pandemic level. Data from the second and third wave.

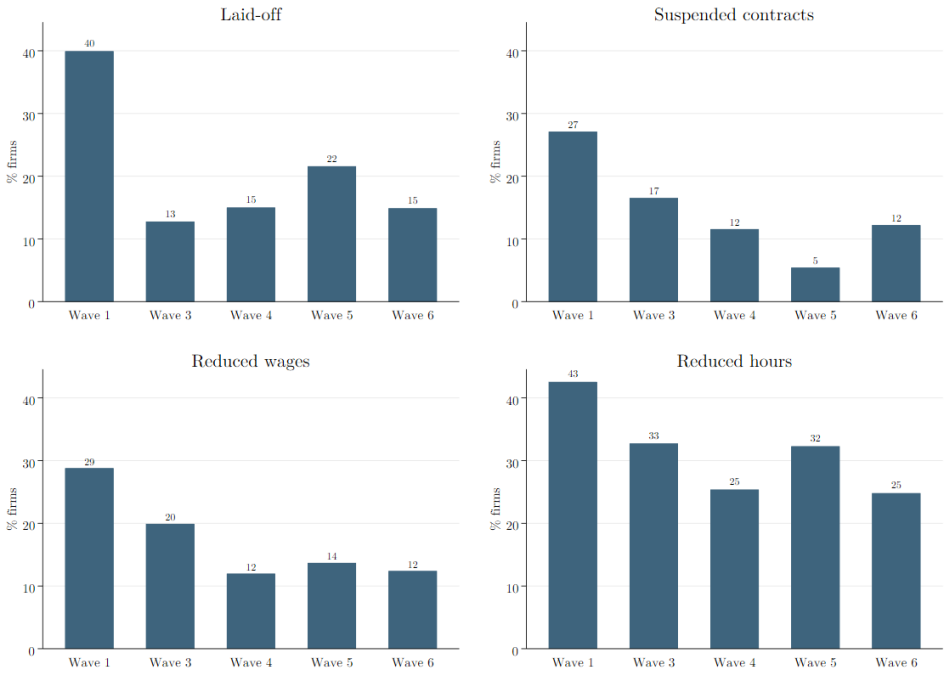
3.3 Labor force

Another important question when documenting the recovery is the impact on employment. Although the BPS is not the most appropriate tool to understand overall employment

changes, since it exclude medium and large firms and focus on surviving firms, the results document the adjustments that these surviving small businesses have been implementing.

Figure 8 shows the main adjustments in the labor force by wave. After a large adjustment at the extensive margin at the onset of the shock with 40% of firms laying off workers, this type adjustment decreased to only 13% and 15% of firms in wave 3 and 4, but escalated again to 22%. Most firms, however, have adjusted to the shock at the intensive margin. Between 40% and 30% of firms have reduced the number of hours as adjustment in each wave. Contract suspensions, facilitated by several MPs (provisional measures) at the onset of the shock, decreased from 27% to 5%. Finally, 29% in wave 1 and 14% in wave 5 reduced wages to adjust to the shock.

Figure 8: Labor adjustments



One important question is how these intensive (ie. reducing working hours or wages) and extensive (ie. laying off workers) adjustment measures experienced in Sao Paulo compares to the rest of the world. Figure 9 and Figure 10 show the probability of adjustments across countries.

Figure 9: Probability of intensive margin adjustments across countries (reducing working hours or wages)

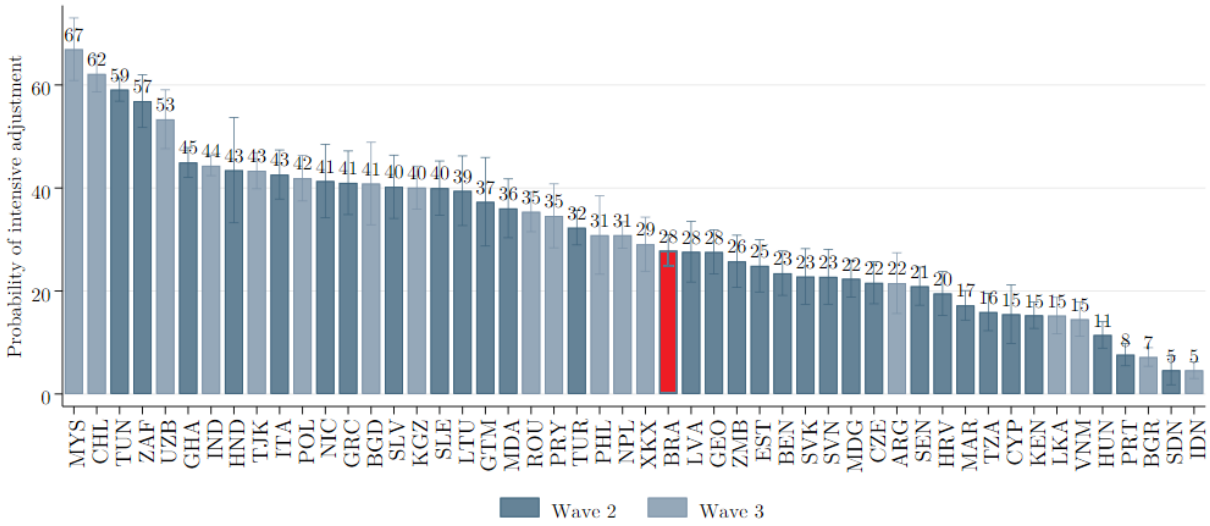
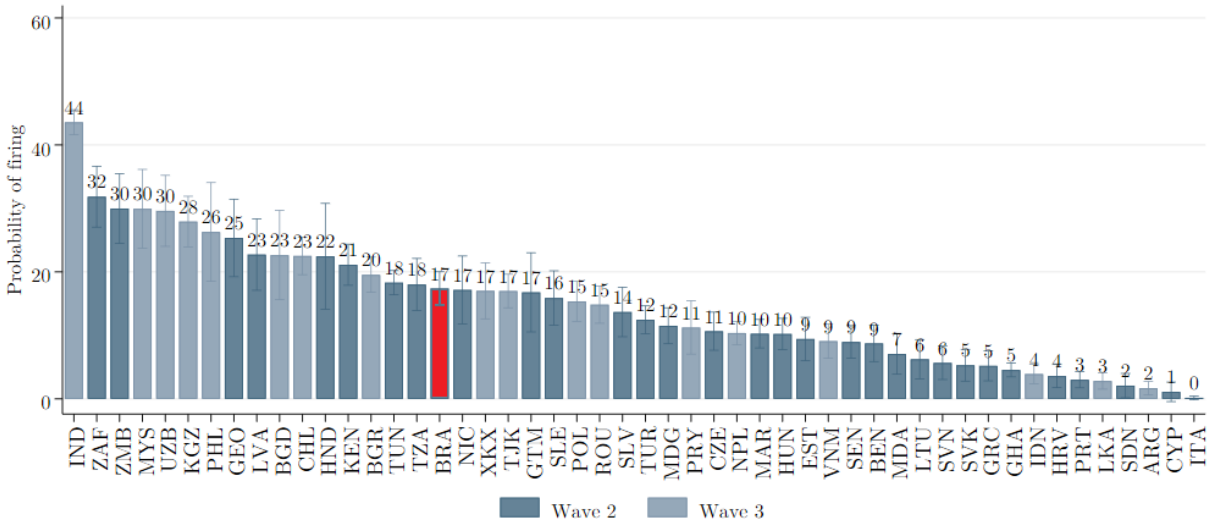


Figure 10: Probability of extensive margin adjustments across countries (laying off workers)



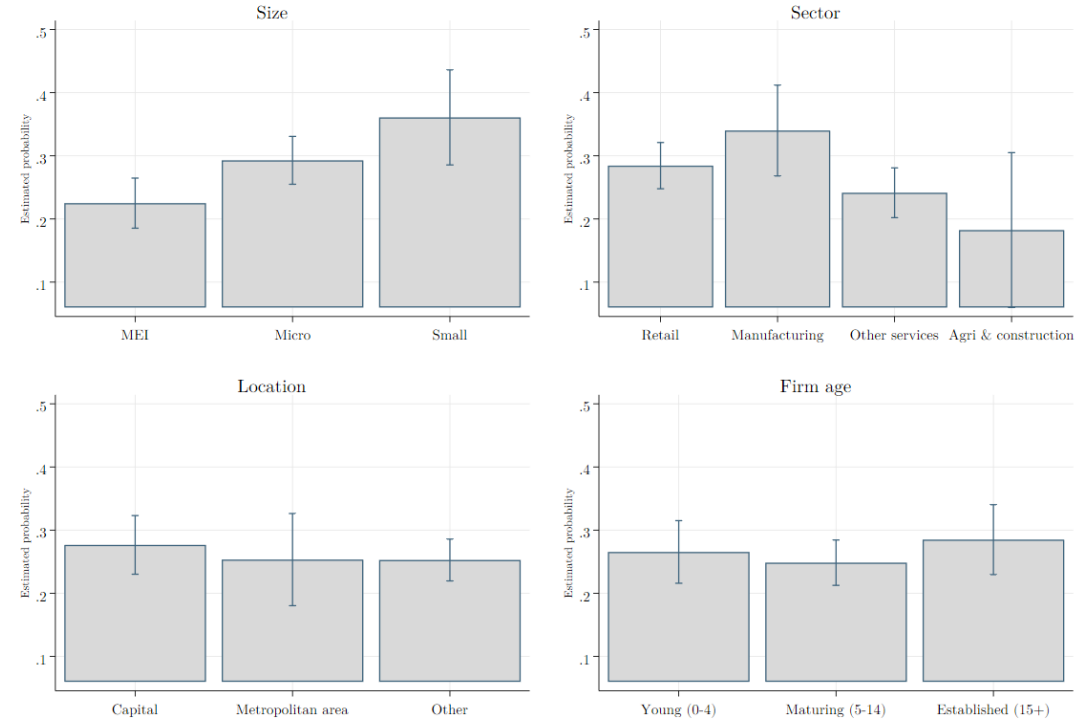
Overall, intensive adjustment measures throughout the pandemic have been the most common resource of firms to offset the shock. However, once the labor flexibility measures are no longer available, most subsequent adjustment are happening through employment reductions and wages.

4 Financial risk and access to credit

One critical element for the medium and long-term impact of the pandemic is the level of indebtedness of firms. If firms emerge from the pandemic with large debts, this could jeopardize the recovery and long-tern growth; potentially dragging banks to financial liquidity problems. Liquidity problems impact investments that can slow down productivity growth.

In the case of our sample, around 74% of the firms did not access credit since the beginning of the pandemic, only 26% had access. This is consistent with the fact that smaller firms are less likely to access credit. In fact, less than 25% of MEIs have access to credit, and around one third for small firms (Figure 11).

Figure 11: Estimated probability of access to credit

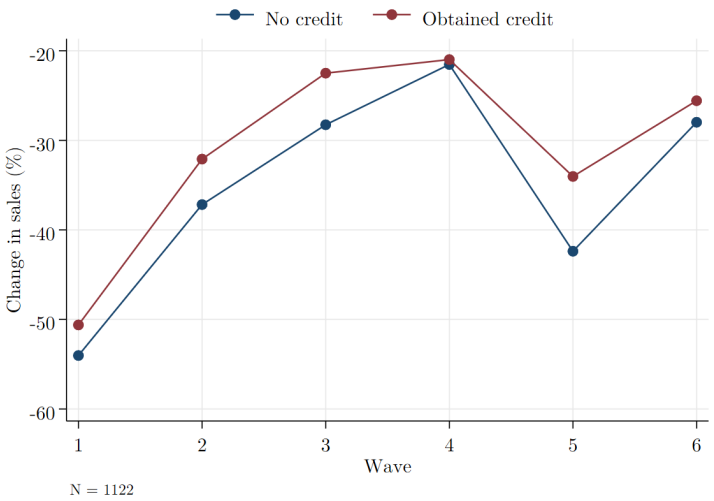


N = 1621

Those firms with access to credit perform much better during the pandemic. This is partly explained by the composition of firms that have greater access to credit. Small firms and firms in manufacturing have greater access to credit and also experience a better performance during the pandemic (Figure 12). Although it is still possible that credit also facilitates smoothing the impact of the pandemic on firms, reverse causality is also possible since better managed firms and those with better performance, have more access to credit.

Regardless of the causal mechanism at play, the gap in performance between the two group of firms is constant throughout the pandemic.

Figure 12: Variation in sales by credit access



Finally, one critical measure of the vulnerabilities associated to the shock is financial risk. Figure 13 shows the evolution of the debts to sales ratio throughout the waves. As discussed above, the fact that we are including only small firms with limited financial access implies low ratios of below 10% across sectors and firm sizes. The last lockdown during March-April 2021, however, has increased significantly the debt to sales ratio for some firms, especially on retail and among MEI and micro. The increase in ratio is mostly due to the additional contraction and, therefore could be reverted if sales recover. Overall, there is no evidence of large financial risks for this subgroup of small firms, consistent with limited access to finance.

Figure 13: Outstanding liabilities as a share of sales

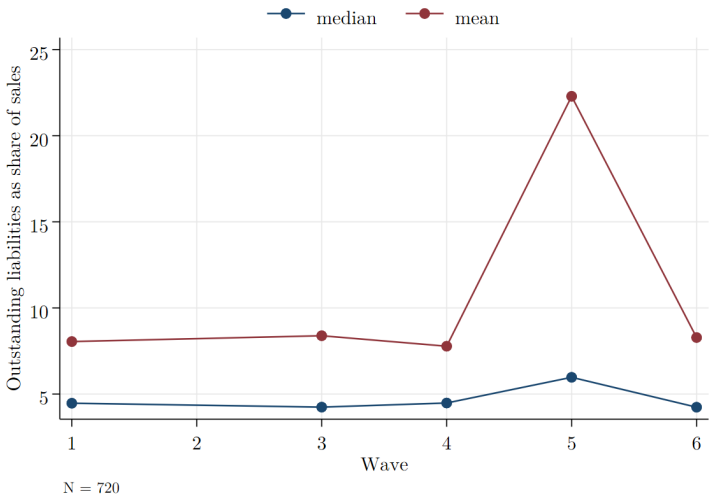
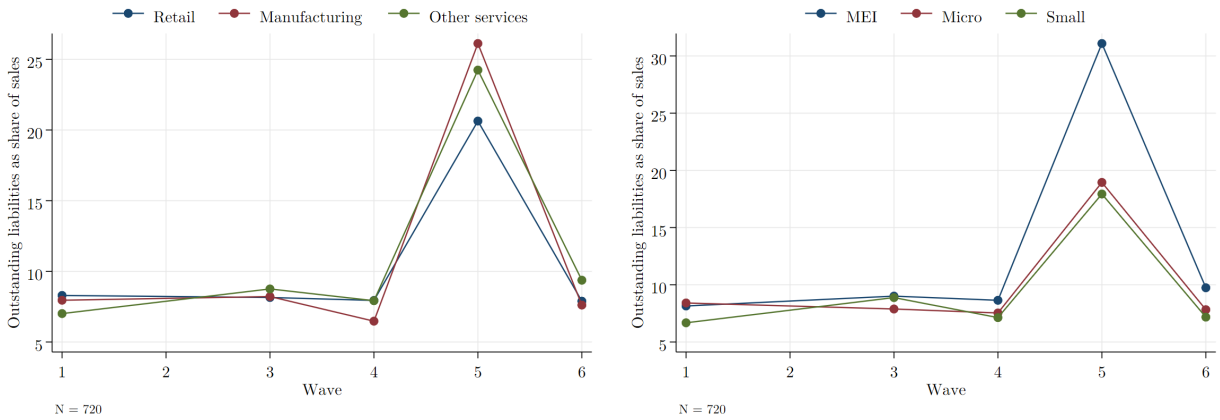


Figure 14: Outstanding liabilities by firm size and sector

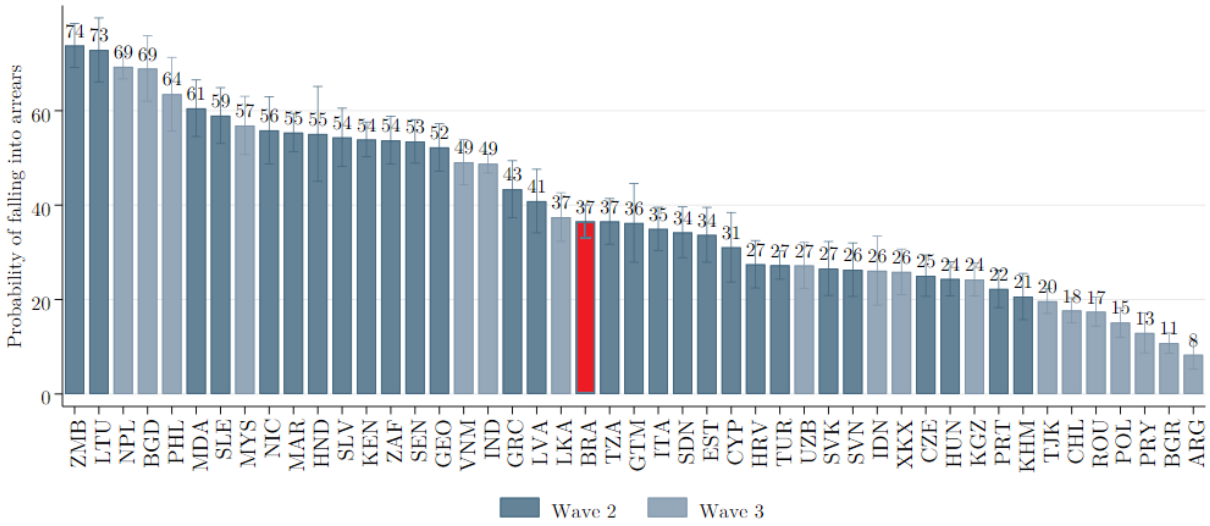


(a) Liabilities by sector

(b) Liabilities by size

From an international perspective, Figure 15 shows the probability of falling into arrears. Results show that firm in Sao Paulo have a moderate financial risk if compared to other countries.

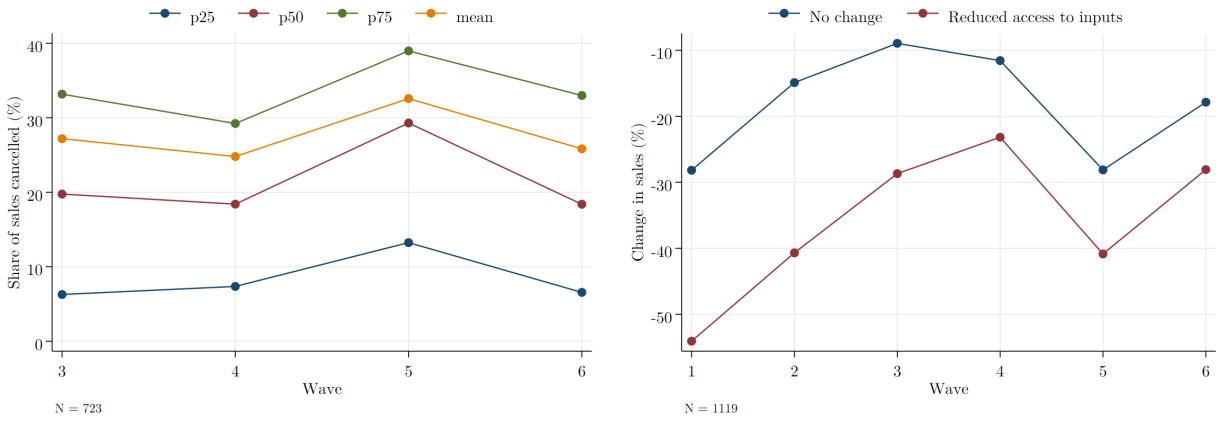
Figure 15: Probability of falling into arrears across countries



5 Value chain bottlenecks

Another important channel of transmission of the shock is through value chain disruptions. Firms have been hit by lack of availability of inputs and supply disruptions. This supply shock, in addition to mandatory closures, have had a significant impact on firms. Figure 16a illustrates this point and shows that indeed supply chain disruptions have had a negative effect on sales, especially in the fifth wave due to the latest lockdowns. The median firm had to cancel 30% of sales in the fifth wave due to these disruptions. This has had an important impact on the sales dynamics, with an average difference in the negative intensity of the impact between those firms that experienced inputs disruptions and those that did not of between 20% and 15% Figure 16a.

Figure 16: Impact of supply chain disruptions

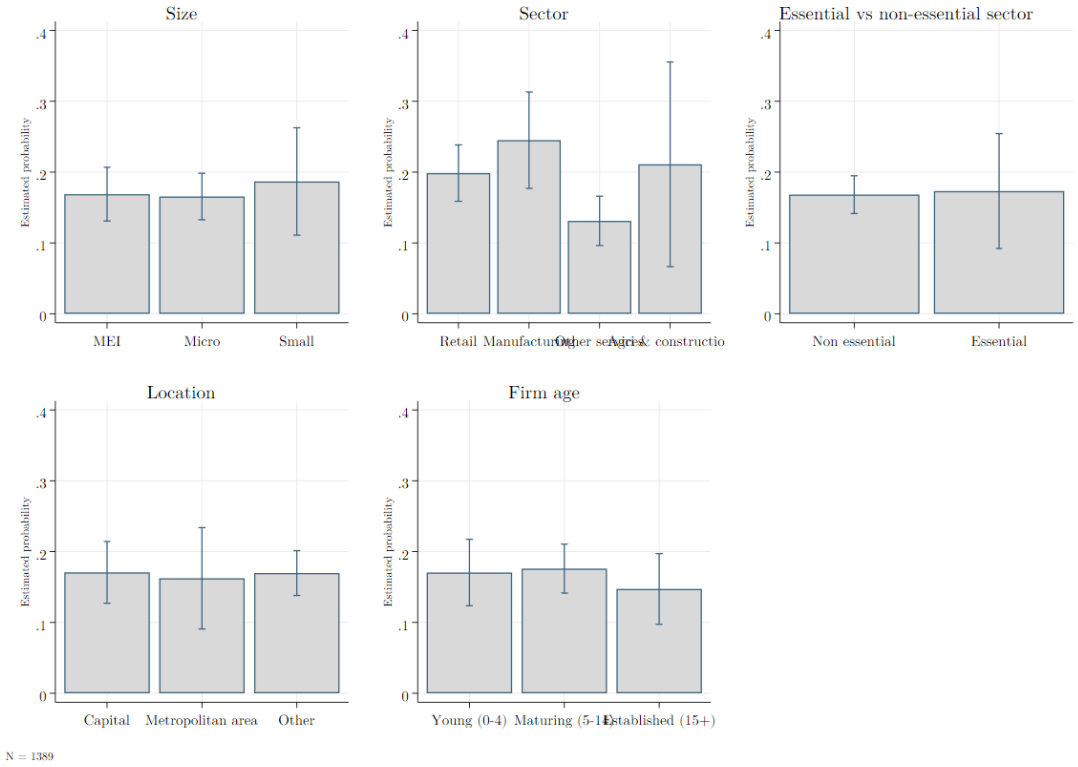


(a) Share of sales canceled

(b) Sales changes and supply chain disruption

Furthermore, these disruptions were very horizontal in the sense of affecting most firms. Figure 17 shows that firms in manufacturing were more likely to be hit by inputs disruptions, but when looking across size groups or age there are no significant differences. Supply chain disruptions are a critical transmission mechanism of the supply shock, and as markets for inputs continue to be disrupted it could extend the persistence of the negative pandemic shock.

Figure 17: Estimated probability of canceled orders

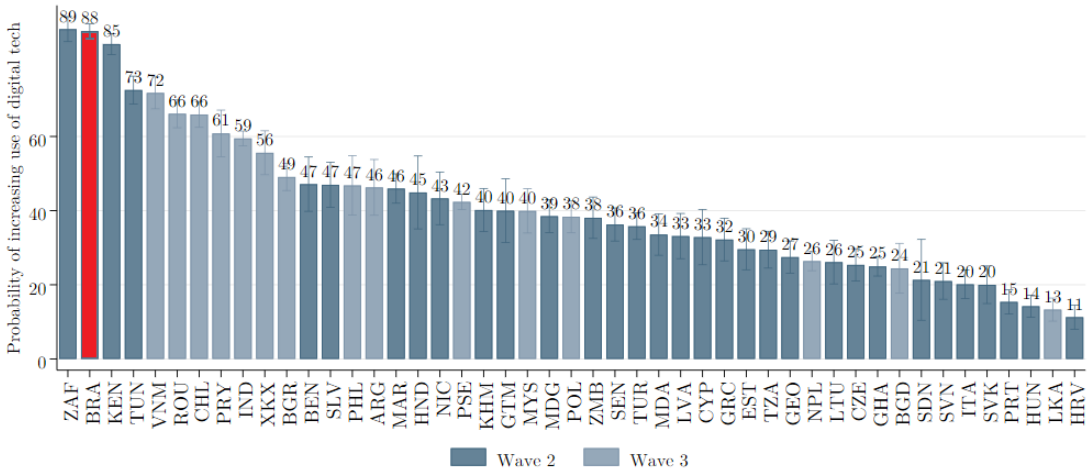


6 Digitalization as a response to the COVID-19 shock

A key adjustment mechanism in response to the restrictions imposed by the pandemic is related to the increase in the use of digital technologies. These technologies provide more flexibility to firms to manage the restrictions associated to the pandemic by facilitating home-based work and more importantly, access to consumers through online sales. An advantage of this type of adjustment is that it has the potential to increase productivity growth and make firms more efficient.

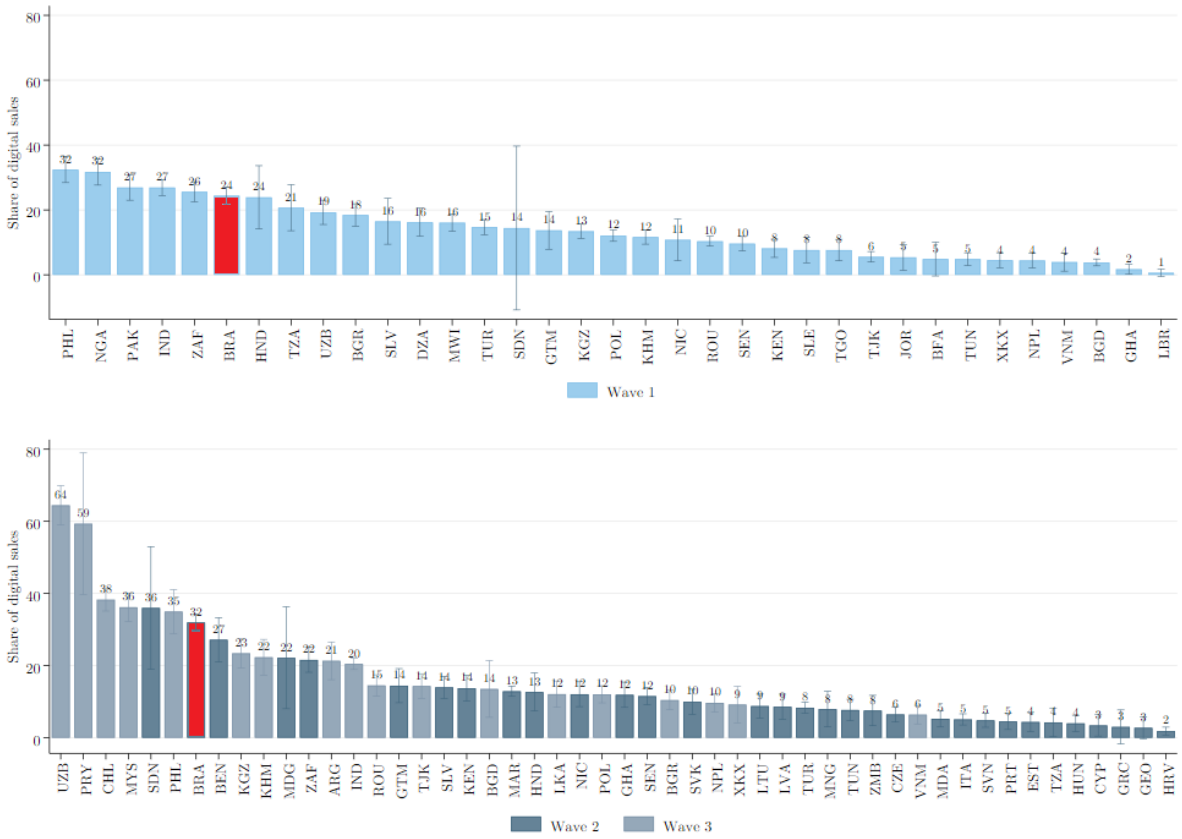
Indeed, the pandemic increased significantly the use of digital tools. Around 82% of small firms in Sao Paulo started or increased the use of internet related technologies. Also about 26% of small firms changed their product mix to accommodate to the pandemic, including innovations to improve the quality of products and services. This increase in digitalization of these small firms is large in international comparison; the second largest in our sample (Figure 18).

Figure 18: Increase in digitalization across countries



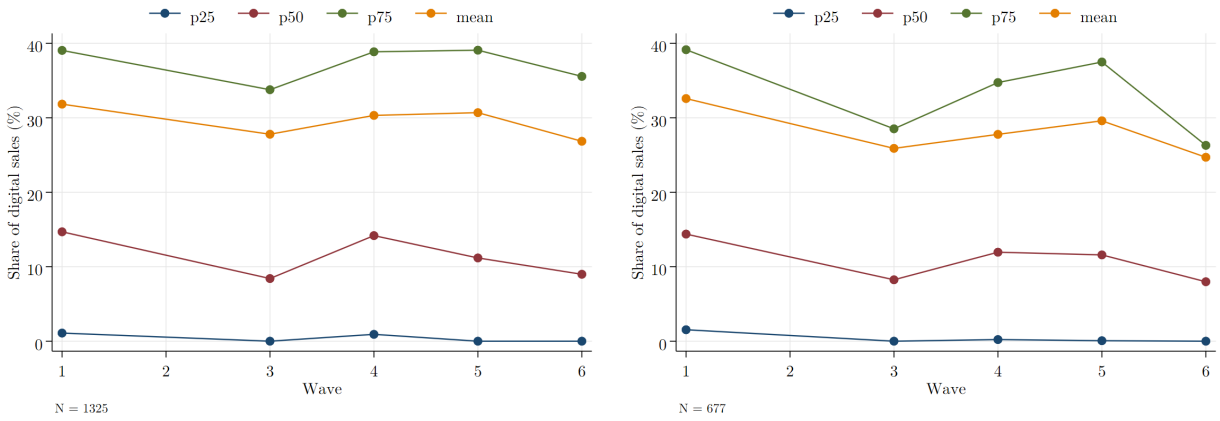
In terms of intensity, the level of digitalization in Sao Paulo, measured as the share of digital sales, is also very high, even when considering other regions of the world. Sao Paulo (BRA) shows a level of digitalization that is above other developing economies (Figure 19). This is a positive adjustment that can play a positive role in productivity growth, and that has also been facilitated by having agile payment systems and a large presence of digital platforms.

Figure 19: Share of sales through digital platforms across countries



Looking across waves, after the initial increase in the use of online tools, the intensity of use has remained stable throughout the pandemic, with some reduction in the share of online sales that mirrors the inverse of changes in mobility, especially for the retail sector (Figure 20b).

Figure 20: Share of sales through digital platforms

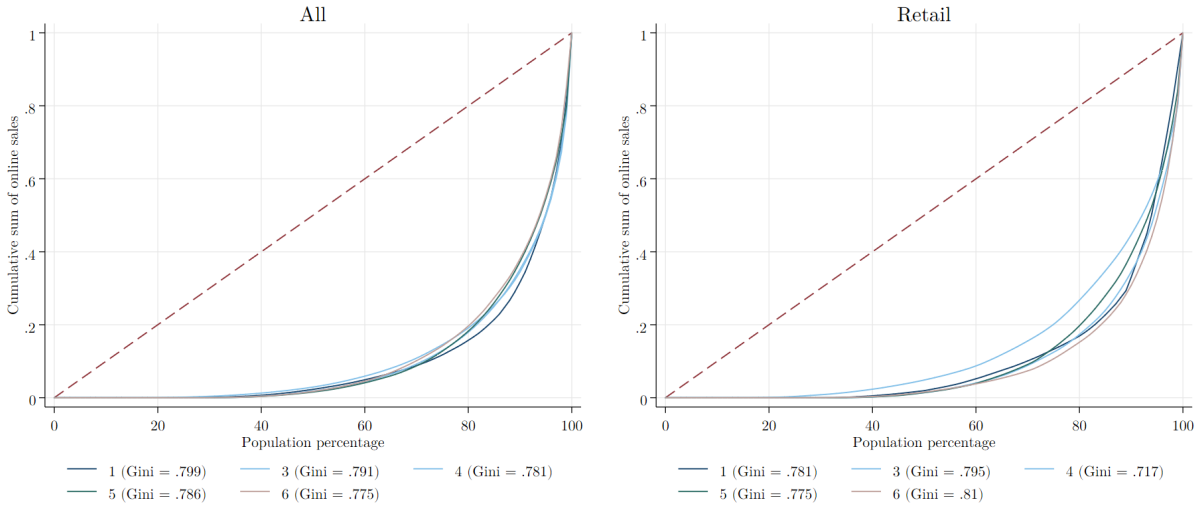


(a) Full sample

(b) Only retail

Despite the large use of digital tools in Sao Paulo, one concern is the potential increase in the digital divide among firms and sectors. Figure 21 shows the Lorenz curves for the market of digital sales, for all firms and for retail. Despite this is a very restricted part of the market given the sample of small firms, it is interesting the large concentration that exists even among small firms.

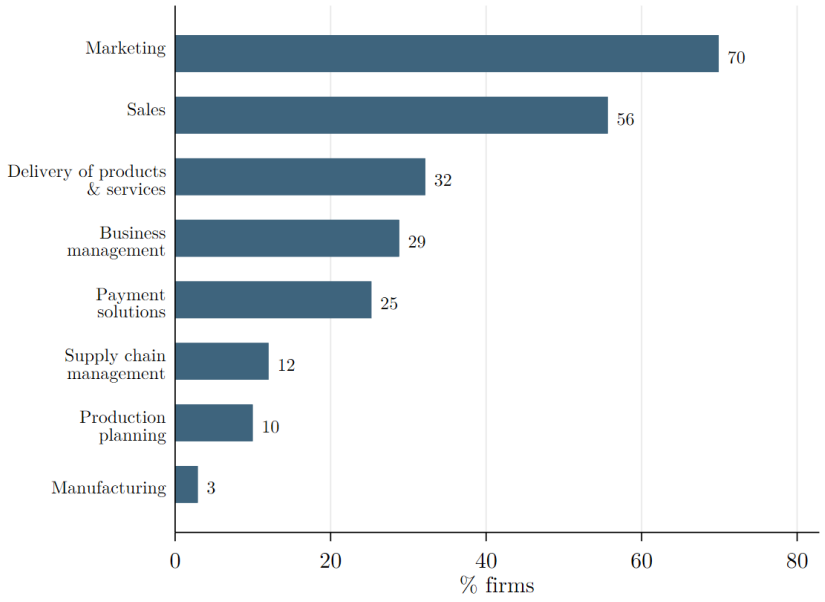
Figure 21: Estimated distribution - share of sales through digital platforms



One additional element to assess whether there is an uneven or incomplete digitalization is to understand what are the business functions where firms invest to use digital technologies. Figure 22 shows a large concentration of digital investments in functions related to

relations with customers - sales, marketing and delivery. Specifically, 70% of firms increased digitalization in marketing, 56% in sales and 32% in delivery. This responds to some of the most pressing challenges imposed by the restrictions associated to the pandemic, but also suggests that the digital transformation may not be as complete as expected, and a large number of firms are still not applying digital technologies to management and production technologies.

Figure 22: Business functions for which firms started or increased digitalization



7 Management quality and the impact of the pandemic

While the impact of the shock depends largely on external factors to the firm such as the severity of the pandemic in the location or the compliance with social distancing measures, internal factors to the firm are expected to play an important role in affecting how the firm will respond to the shock and how quickly it will recover from it. One of these internal factors that might explain the heterogeneity of the pandemic impacts on firms and their ability to respond to the shock is the firms' quality of managerial skills.[4]

To analyze what role had had pre-pandemic mangerial quality on the shape and speed of the pandemic, we merge data for the BPS with SEBRAE data. Specifically, a sub-sample of 1,144 firms (68% of all sample) in the Business Pulse Survey were participants in the 2019

[4] A vast literature points to the importance of management practices in explaining differences in productivity and firm performance, both in developed and developing countries (Bloom et al., 2013; Mckenzie and Woodruff, 2016; Bruhn et al., 2018).

edition of *SEBRAE Com Você* (SCV), a management extension program in which SEBRAE's agents visited firms and implemented a management diagnosis with the business owner. This diagnosis consists of 20 yes/no questions that encompass different management practices: business planning, financial management, marketing, inventory control, specific legislation adherence, and human resources management. For this sub-sample we have information on management practices adopted by firms prior to the COVID-19 outbreak.

Preliminary analysis shows that out of the 20 management practices measured, the sub-sample of companies adopt an average of 14 practices. Also, among BPS firms, those that participated in SCV are different from those that did not participate under six observable characteristics such as firm age, sector, size, location, essential sector[5] and geographical density.[6] The results show that firms participating in SCV program are more mature and more focused on retail than non-participants. In addition, among participants, firms size include mostly micro and small, and mostly out of the capital city. Despite this, these firms are also located in geographical areas with a higher density of firms, which is expected due to the program's own design.[7] Finally, the proportion of firms that belong to essential sectors is lower among participants than non-participants.

7.1 Management quality and firm status

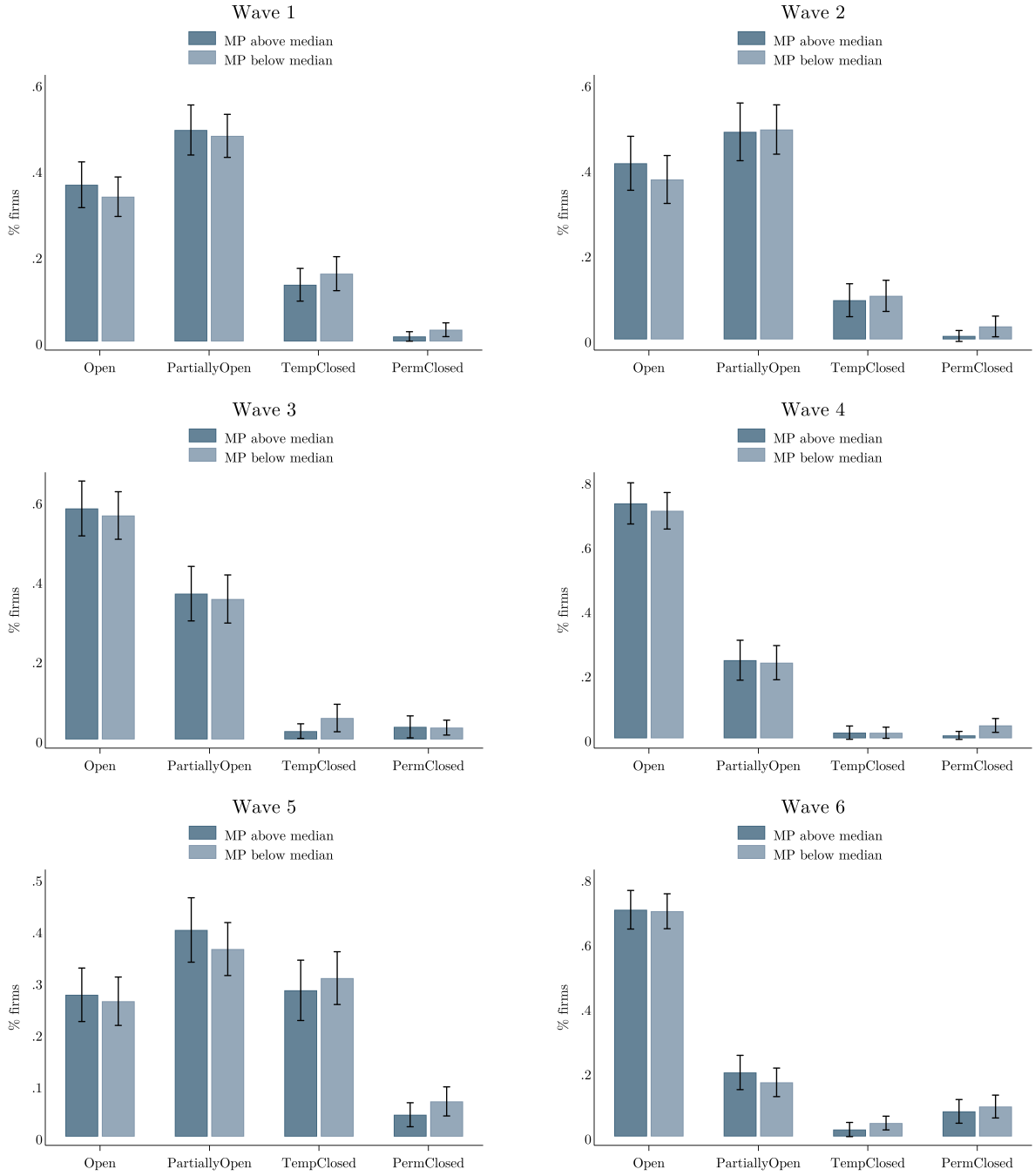
We divide firms between those with pre-pandemic management quality above and below the median, and then analyze the different firms dynamics during the pandemic for both groups. Overall, the results show that the quality of management was not sufficient to mitigate the short-term shocks of the pandemic. Figure 23 shows that there is no clear distinction between the operating status of companies for firms with better or worse initial level of management quality, which is consistent with the fact that operational restrictions are mainly exogenous to the firm.

[5]Probability of the sector to have been considered essential or not during business operating restrictions by public authorities. This estimate was calculated using the National Classification of Economic Activities (CNAE) of each company and a list of CNAE sectors that most closely match those defined as essential published by the Brazilian Institute of Applied Economic Research (IPEA).

[6]Proxy measure for competition. It identifies firms that belong to the same section of CNAE industry classification by postal code.

[7]A particular aspect of SCV relies on agents to *sweep through the streets* looking for businesses to survey. For logistical purposes, SEBRAE usually targets micro-entrepreneurs, micro and small firms clustered in a catchment area. Although this reduces search costs for SEBRAE's agents, it has implications on what type of firms end up participating in the program.

Figure 23: Firm status by management level

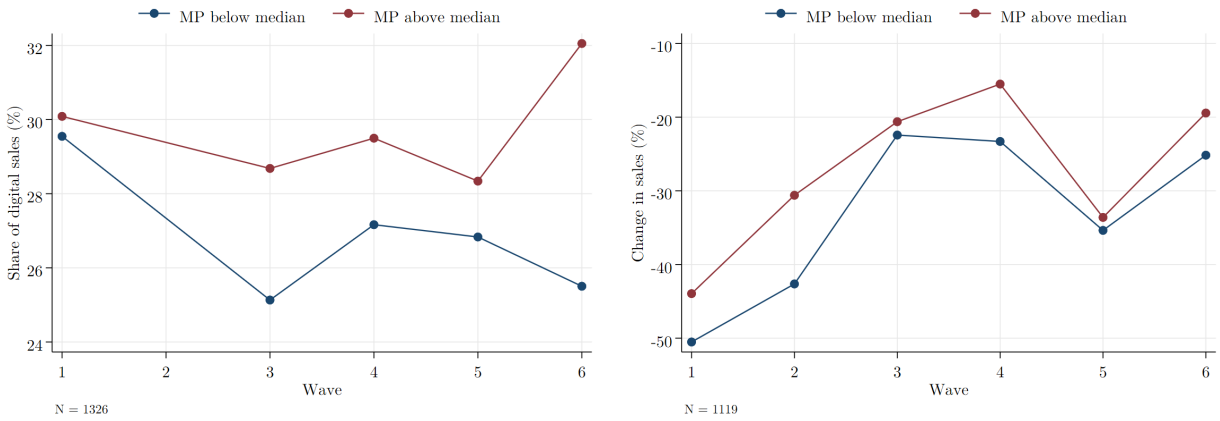


Note: All results are controlled by observable characteristics: firm age, size, sector, location, essentially, and density.

7.2 Management quality and impact of sales

Regarding the impact of the shock on revenues and online sales, Figure 24b and Figure 24a show the dynamics throughout the pandemic for those firms that implement new management practices and those that did not during the pandemic. Figure 24b shows that firms that implemented new management practices had from the onset more online sales, but the gap narrowed considerable by the fourth and fifth wave. The evolution for sales, however, is interesting, since firms that implemented management practice moved to have a better performance during the shock that those who did not.

Figure 24: Sales and digital sales by management level



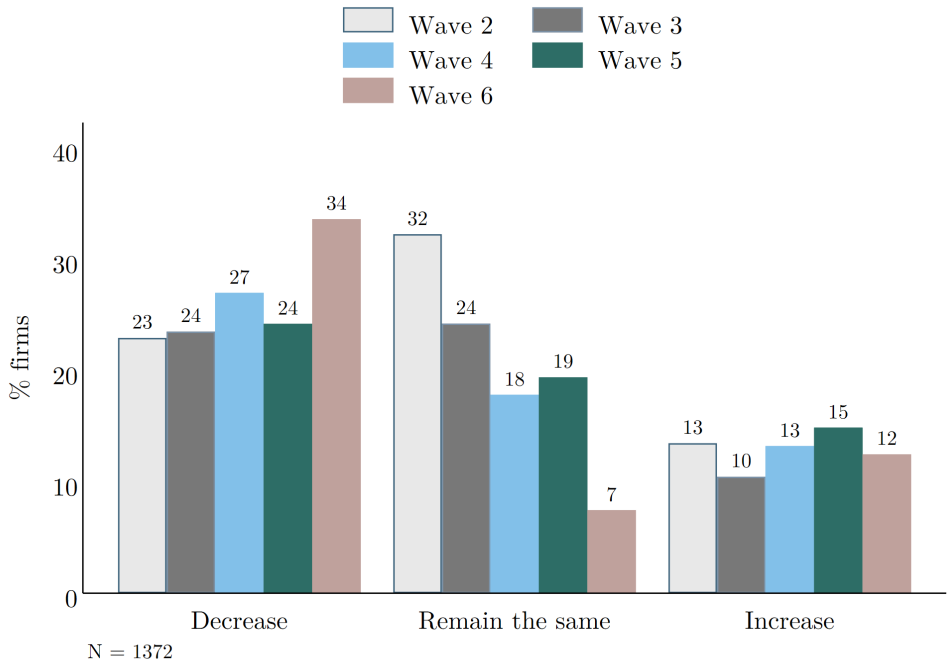
(a) Management level and sales

(b) Management level and digitalization

8 Expectations about the future

The pandemic crisis meant that firms had to deal with a high degree of unpredictability about the future of their operations and sales, which can directly affect firms investment decisions and future growth. In terms of expected variation in sales over the next six months compared to 2019, Figure 25 shows that most firms have positive expectation about an increase in sales in the next 6 months, but interestingly this has been quite constant throughout waves. However, more small firms have expectations of a decrease or remaining the same, which have also increased slightly. This can have negative consequences for investment decisions that can affect in the medium and long-run, and emphasize the need for predictability in terms of potential future restrictions.

Figure 25: Expectations about change in sales



9 Access to public support programs

One final important element of the analysis is to understand the role of policies in smoothing the shock of the pandemic. First, public policy take up by small firms in Sao Paulo seems to be relatively low when considering other regions of the world as observed in Figure 26. Even when trying to control for the smaller size of firms in the sample in Sao Paulo, take up is below countries in the region such as Chile or Argentina

Figure 26: Probability of accessing public policy support across countries

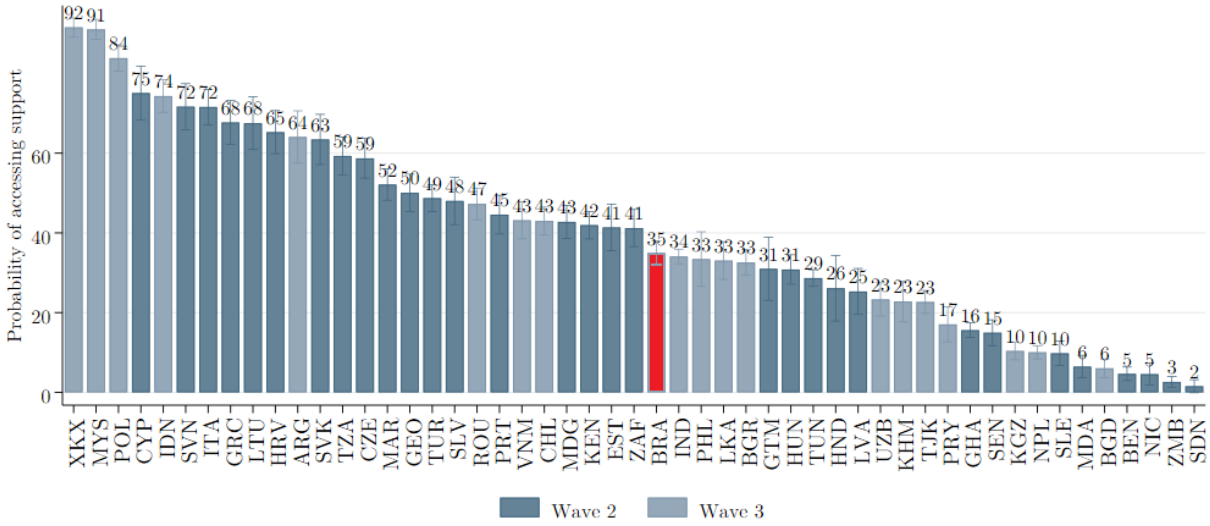
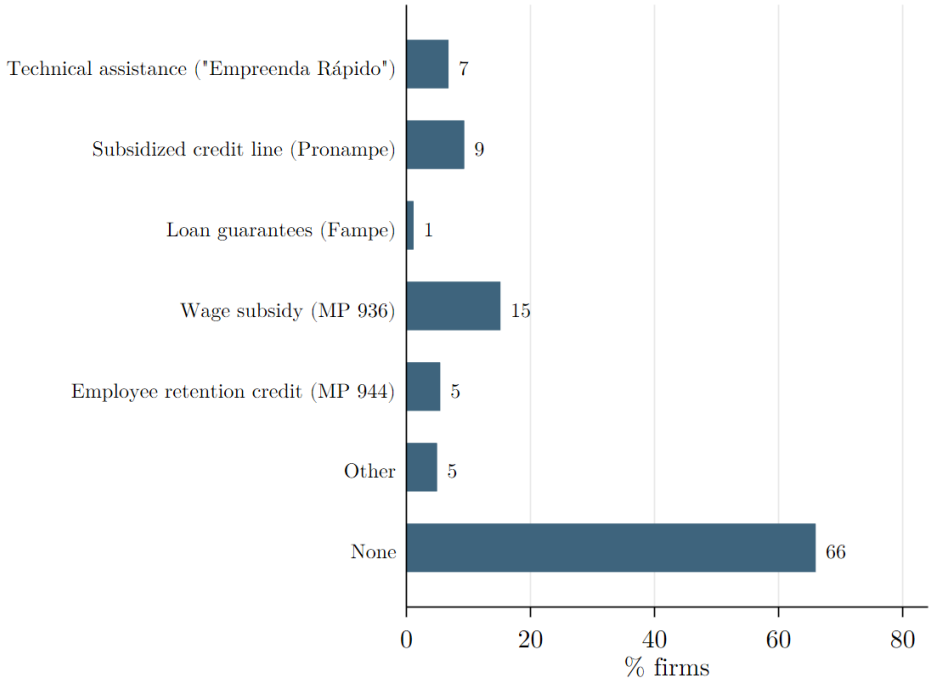


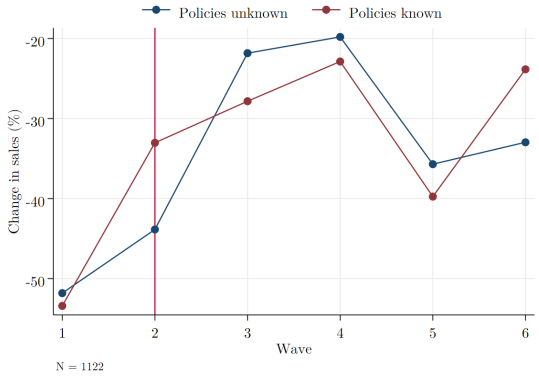
Figure 27 shows take up by type of policy. Most support concentrated in the MP 936, the wage subsidy, with 15% of firms; followed by subsidize credit (Proonampe) 9% and technical assistance (Emprenda rapido) 7%.

Figure 27: Public policy take up

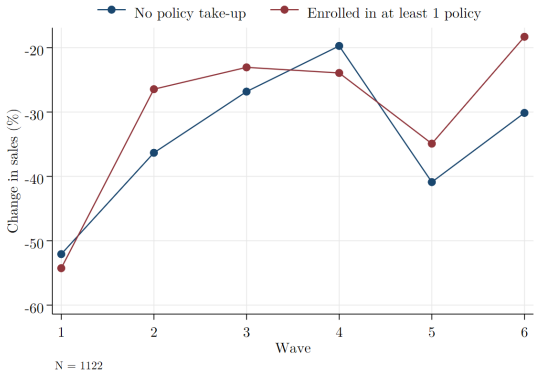


The fact that many firms can be beneficiaries of several government initiatives does not allow to identify causal effects from individual policies. One area, however, where the data can shed some light is related to the different sales dynamics of firms with knowledge and access to public support. Figure 28a shows the evolution of the impact on sales for firms aware and those not aware of existing support policies early on in the pandemic. Interestingly, the evolution on average is almost identical between both groups. Figure 28b shows this evolution for firms that in the second wave adopted at least one support measure. Interestingly, firms that adopted one measure in wave 2 had more negative sales when adopting, likely this was the incentive to be more active in seeking government support. More importantly, after taking the support, they narrow the sales difference with firms with no support. While this is only indicative, and more robust evaluation is needed, public support may have had a positive impact in smoothing the impact of the pandemic, or at least in narrowing the gap with other firms.

Figure 28: Access to public support



(a) Change in sales and policy awareness



(b) Change in sales and policy take up

10 Concluding remarks

This note provides a description of the recovery process for small firms in the state of Sao Paulo. The note focuses on the heterogeneity of the pandemic shock and its recovery. Overall, the shape of the pandemic appears to be W shaped and smaller firms in the state of Sao Paulo have not recovered the levels of sales of 2019 a year and a half after the beginning of the pandemic.

Smaller firms, especially MEI, and firms in other services sectors have been the most severely hit. While the recovery was happening at a good speed, also in international com-

parison, the last lockdown had been an important setback for the recovery of small firms, regressing growth to levels of same period last year. Also, the value chain disruption channel has been an important part of the large negative supply shock. On a more positive note, the level of digitalization of businesses is high and larger than in other comparative countries; although its intensity has remained stable during this period. Finally, *prima facie* evidence suggests that access to policies, although low among small firms and below other countries in the region, may have contributed to softening the negative impact of the pandemic.

Going forward and given that expectations and uncertainty for the next 6 months is still high, it is important to ensure some predictability for any additional measures that would be needed to fight the pandemic. Furthermore, given the large incentive that the pandemic has triggered to digitalize businesses, it is important to increase the supply of policy support aiming at digitalization and technology upgrading. The results presented here show large differences in the intensity of using digital tools and in the areas of digitalization that could increase the digital divide.

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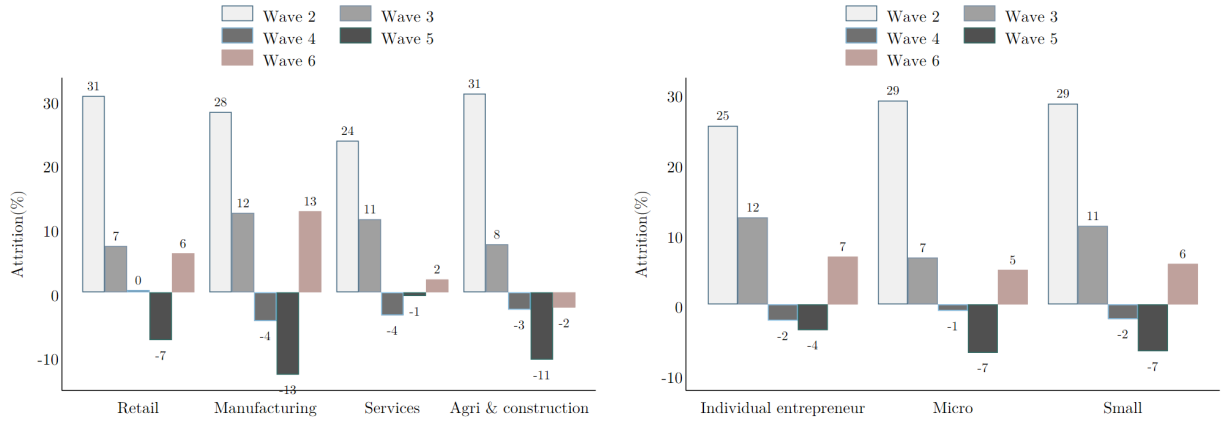
A Characteristics of the sample

Figure 29: Attrition rates

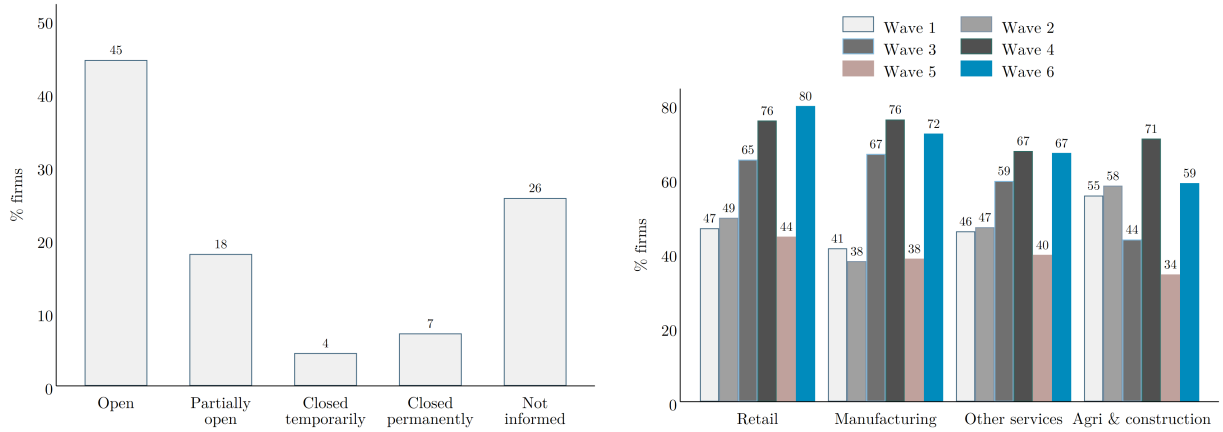


(a) Attrition rate by sector

(b) Attrition rate by size

B Business operations

Figure 30: Business status



(a) Status at the time of interview (wave 6)

(b) Share of fully open businesses by sector