

Are Ethiopian firms on the road to recovery from the pandemic?

Evidence from ten rounds of high-frequency phone surveys in
Addis Ababa

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EVIDENCE FROM TEN ROUNDS OF HIGH-FREQUENCY PHONE SURVEYS IN ADDIS ABABA

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Disclaimer

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The COVID-19 pandemic has reshaped the world economy, has had severe health impacts, and upended people's livelihoods in developed and developing countries alike. The rapidly evolving nature of the pandemic and subsequent preventive measures to curb the spread of the virus, including lockdown measures and movement restrictions, affected business operations and suspended global supply chains. Evidence is now emerging that the pandemic and containment measures have adversely affected poor households' welfare with signs of worsening poverty and heightened vulnerability (Harris et al., 2020; Agarwal 2021; Krauss et al., 2022).

In Ethiopia, a sizeable share of the population is clustered around the poverty line (Bundervoet et al. 2020) and the adverse impacts of the pandemic likely pushed many Ethiopians into poverty. The poverty rates in urban and rural areas, for example, increased in October/November 2020 compared to the pre-pandemic period of 2018/19 with a stronger increase in urban areas (Wieser et al. 2021b). The World Bank estimated in 2020 that growth in Ethiopia was 4 percentage points lower than the pre-COVID-19 forecast (Dione, 2020). The pandemic also reduced households' employment and incomes with female-headed households being hit harder. Women have consistently had lower employment levels during the pandemic compared to men and face additional barriers such as health issues and caretaking responsibilities that prevent them from transitioning back to work (Ebrahim et al. 2020).

Further to the direct impact of the COVID-19 pandemic on individuals and households, lockdown measures, disruptions to supply chains, and a perceptible fall in consumer demand likely shapes how firms are operated, during, and after the pandemic. If such impacts disproportionately fall on the more productive firms, it triggers far-reaching consequences that affect not only current productive capacity but could also weaken growth prospects in the long run. In addition to financial fragility precipitated by revenue losses and increased costs, firms could face value chain disruptions, funding withdrawals, and severe trade contraction because of the COVID-19 pandemic. There is emerging evidence that firms in high-contact service industries such as travel, and tourism have been hit especially hard. Studies also indicate that micro, small, and medium enterprises and women-led small and medium enterprises have been disproportionately affected (Wieser et al. 2021).

Further, as in any crises, external shocks will affect firms differently, and firms have different ability to absorb such shocks. Adverse effects tend to vary over time as the reach and magnitude of the initial shock subsides. For example, firms' ability to manage the crises induced by the pandemic and the strategies they decide to pursue influence closures and job losses, which are critical to economic recovery. For example, De La Paz et al. (2021) show that recovery is heterogeneous across firms and sensitive to firm-level attributes such as size, sector, and initial productivity. In particular, larger and more productive firms are recovering faster, with implications for competition policy and allocative efficiency.

How does the pandemic impact firms in a large low-income country? What strategies do firms adopt to attenuate the impact of the pandemic on their operations and how does the impact of the pandemic and firms' strategies evolve over time? Using primary data, this paper explores these questions. Specifically, we study how firms changed their operations in response to the pandemic and government containment and support measures as well as uncover the possible patterns of recovery. We rely on representative data collected from ten waves of high-frequency phone surveys of firms, conducted between April 2020 and February 2022, in Addis Ababa, Ethiopia. This high frequency follow-up allows for a real-time tracking and the better understanding of the effects of and responses to the COVID-19 pandemic on firm operations, hiring and firing, expectations of future operations, labor demand, and opportunities for recovery. Early results from the survey have been used to tailor and implement interventions and policy responses and monitor their accessibility and effects.

We find that more than 95 percent of firms in Addis Ababa were affected by the COVID-19 pandemic. When the pandemic first struck in early 2020, about 42 percent of firms were closed and not a single firm reported to be fully operational. Lower demand for products/services, lower supply of raw materials and intermediate goods, COVID-19 regulations, and closure of marketplaces/shops were key factors that contributed to firm closure and scaling down of operations. The good news is that many firms have resumed operation and there is a gradual improvement in the share of firms that become fully operational (72% in February 2022). A similar pattern is also reflected in the evolution of sales turnover where a perceptible decline in sales revenue in the early months of the pandemic is largely reversed one and a half years after the onset of the pandemic. Signs of strong recovery are also observed in reported profit, which in June/July 2020 stood at 17 percent of the corresponding values in the preceding year and largely converged back to their pre-COVID 19 levels in February 2022.

Trends in workers' wages, where the earlier day of the pandemic is associated with significant negative shock, are also largely reversed with wages bouncing back to their pre-COVID 19 levels irrespective of workers' skill levels. Throughout the survey periods, firm downsizing through worker layoffs and expansion through hirings have been modest. In recent rounds where businesses appear to be in full recovery swing, however, an increasing share of firms expects to lay off workers and hiring expectations remain subdued. Considering that the current global and local economic and political conditions may not be favorable for business expansion, it is not surprising that businesses might choose to maintain the status quo. Taken together with the initial dip in employment, however, this might portend a jobless recovery pattern or even tougher times ahead that may introduces added fragility to the early recovery progress.

The rest of the paper is organized in the following way. The next section describes the high-frequency data in further detail. Impacts on operations including on days of operation, sales turnover, profitability and employment are presented in Section 3. Firms' outlook and expectations are discussed in Section 4. The final section concludes the paper.

2. DATA

The World Bank, in collaboration with the Job Creation Commission (JCC), implemented a high-frequency phone survey of firms (HFPS-F), which interviewed firms in Addis Ababa between April 2020 and February 2022 for a total of 10 survey rounds. The HFPS-F initially ran for eight survey rounds, roughly three weeks apart. Rounds 9 and 10 were added later to measure the medium-term recovery of firms and were fielded roughly one and a half years after the onset of the pandemic.

The data collected are based on a sample of 645 firms in the industry and services sector using a list of registered firms provided by the Ministry of Trade and Industry. The High-Frequency Phone Survey of Firms (HFPS-F) was collected via phone interviews. The HFPS-F monitored the economic activities of firms in Addis Ababa and their responses to the COVID-19 crisis, particularly its effects on firm operations, revenues, and jobs. The final dataset consists of a panel of approximately 500 firms in Addis Ababa. Table 1 shows the survey dates and collected sample sizes for each round.

Table 1: Survey dates for each round

Rounds	Data collection period	Sample size
1	April 15 and May 5, 2020	645
2	May 6 and May 27, 2020	552
3	May 29 and June 18, 2020	515
4	June 22 and July 14, 2020	509
5	July 23 and August 15, 2020	445
6	August 17 and September 8, 2020	442
7	September 13 and October 4, 2020	415
8	October 6 and October 26, 2020	417
9	May 9 and June 8, 2021	593
10	January 25 and February 9, 2022	557

The sampling procedure was undertaken in three steps. First, the list of registered establishments in Ethiopia were obtained from the Ministry of Trade and Industry (MoTI), and then the list was cleaned by removing establishments with missing or invalid phone numbers. Second, all phone numbers of the cleaned list of establishments were shared with Ethio Telecom (the only telecom provider in Ethiopia). Ethio Telecom checked on the status of all numbers and only numbers deemed as “active” by Ethio Telecom were retained and constitute the sampling frame. The verification with Ethio Telecom was undertaken to avoid a scenario in which establishments were in the sample but could not be reached due to an invalid phone number. Third, with this sampling frame, a random sample of establishments were drawn. The sampling frame consisted of 288,660 establishments registered with MoTI with a valid phone number.

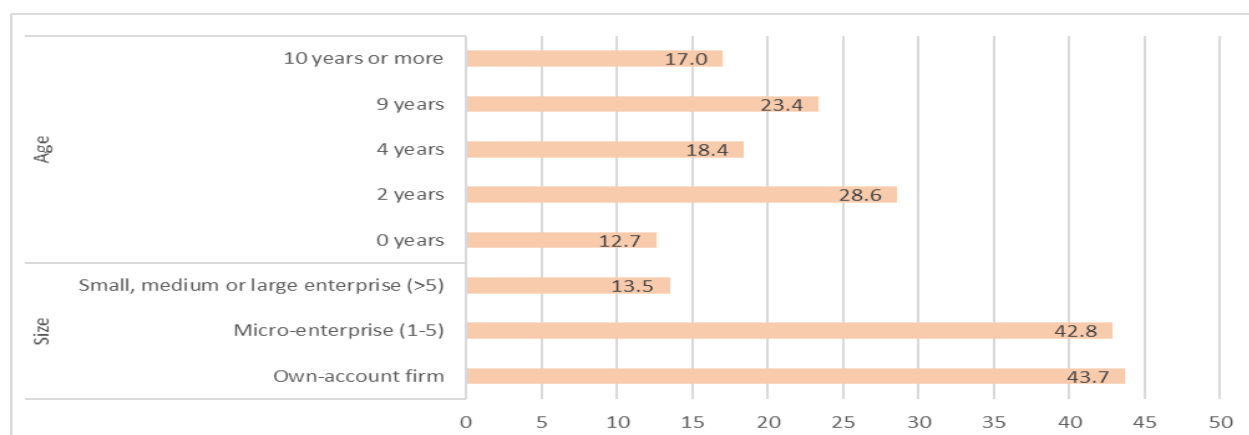
The sample was stratified by establishment size (proxied by its capital) and industry classification. Both variables were available in the sampling frame. Two industry classifications (industry and services) were considered and three firm size groupings: micro (below the 25th percentile in terms of capital), small and medium (25th to 75th percentile of capital), and large establishments (above the 75th percentile of capital) were used in the stratification process. The use of capital to proxy firm size is arguably imperfect, as capital might be weakly related to employment size in Ethiopia. The sample consists of six strata: micro establishments in industry and services, small and medium establishments in industry and services, and large establishments in industry and services. The sample was drawn using a simple random sample without replacement. Expecting a high non-response rate, a sample of 1,450 establishments were drawn. To obtain unbiased estimates from the sample, the information reported by the establishment is adjusted by a sampling weight (or raising factor).¹

¹ For detailed notes on the methodology of the calculation of the weight, please consult the following link: <http://documents1.worldbank.org/curated/en/990561589566319063/pdf/Sampling-Design.pdf>

Approximately, a third of the sample firms are owned by women entrepreneurs. Male and female entrepreneurs appear to be largely comparable along with key personal characteristics. Women (men) entrepreneurs are on average 37 (39) years old, had spent 11 (12) years in schooling and 70 (70) percent are married. There are, however, notable differences in sectoral distribution between male- and female-owned firms. About 96 percent of women-owned firms operating in the service sector, mostly in high-contact sectors, such as hospitality, food retailing, and bars, are highly vulnerable to mandated lockdowns and social distancing requirements. By contrast, less than 82 percent of male-owned businesses operate in the service sector with about a third engaged in wholesale trade and nearly a quarter in transport and storage.

On average, firms are young and small. Figure 1 shows that approximately 13 percent of firms are new firms (did not exist one year ago) and about 60 percent have less than five years of operational experience. A closer look at firm age shows that 29 percent are between 1 and 2 years, 18 percent between 3 and 4 years, and about 23 percent of firms are 9 years. Only 17 percent of firms are 10 years or more. Most firms are own-account firms (only the owner works in the firm and there are no payroll employees), followed by micro-firms (1 to 5 payroll employees). Given the low prevalence of small (6 to 30 employees), medium (31 to 100 employees), and large (100 or more employees) firms, these three categories are lumped together for analytical reasons. This category labeled as ‘Small, Medium or Large (SML)’ comprises only about 14 percent.

Figure 1: Share of firms by age and size



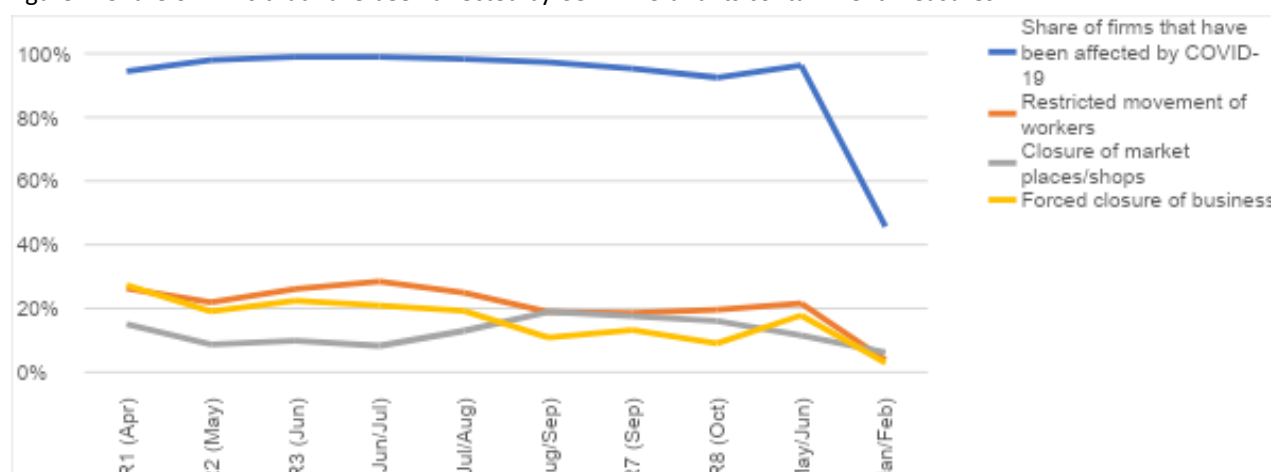
3. FIRMS' RECOVERY OF OPERATIONS

The COVID-19 pandemic affected more than 90 percent of firms in Addis Ababa in the early stages of the pandemic, but the impact subsided over time (Figure 2).² The share of firms affected by the pandemic decreased in the medium-term, from 96 percent (in round nine) to 46 percent (in round ten). This reduced effect of COVID-19 is most likely associated with the relaxation of the containment measures,

² This is based on a dichotomies question on whether the firm experienced any impact due to the pandemic. Firms answer Yes or No.

such as the lifting of the State of Emergency³, which was declared to curb the spread of the coronavirus by the Ethiopian government in April 2020, and other directives introduced by the Ministry of Health that introduced restrictions of assembly and movement following the relaxing of the State of Emergency. The lifting of COVID-related containment measures increased the mobility of people and contributed to the opening of businesses that were previously closed due to the pandemic. The survey findings show that a lower share of firms reported that the COVID-19-induced restricted movement of workers, closure of marketplaces, and business closures affected their operations in the most recent rounds (Figure 2).

Figure 2: Share of firms that have been affected by COVID-19 and its containment measures



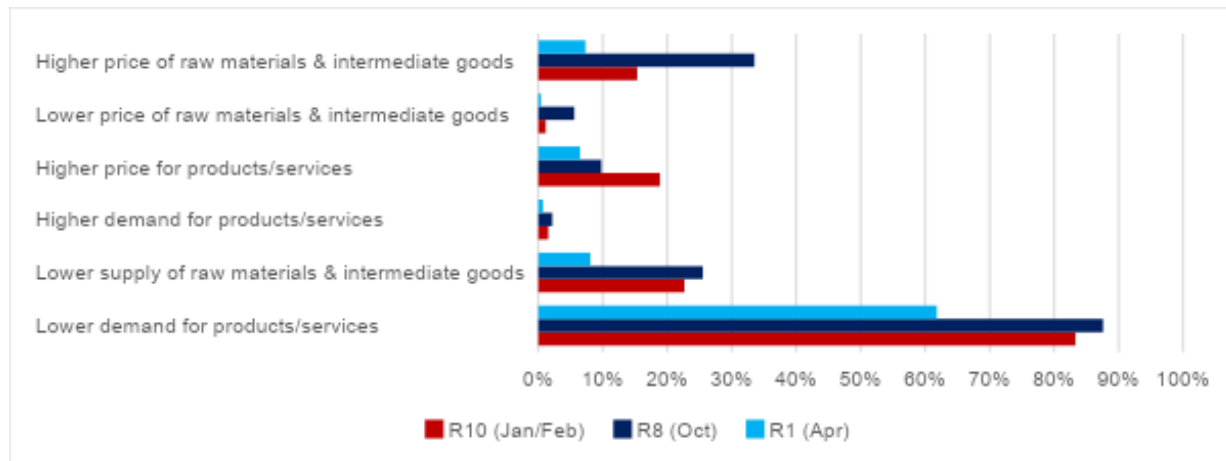
COVID-19 has also caused unprecedented supply chain disruptions, both in developed and developing countries, by lowering access to and increasing prices of raw materials and intermediate goods, which severely hampered firms' operational and financial performances (see, for example, Sudan, 2021). Yet, further challenges beyond the impacts of COVID-19 persisted in Ethiopia. The conflict in the Northern part of the country has produced further consequences on overall economic activity and firm operations. While damage to human and physical capital including key infrastructure facilities is expected to lead to direct and widespread impacts on firms in the conflict zones, it can potentially dampen productivity and limit access to raw materials, inputs and market demand on firms who might not be directly affected by the conflict.

Conflict-induced supply side shortages can bid up prices. In Ethiopia, prior to COVID-19, import prices were high and rising for years due to supply-side and balance of payments challenges. In recent months, the conflict in the Northern part of Ethiopia and in Ukraine has further put additional pressure on input prices leading to unprecedented levels of price hikes. This account dovetails well with the observation that Inflationary pressures did not significantly increase with the COVID-19 pandemic but accelerated in the summer of 2021, as the armed conflict in Northern Ethiopia spread and intensified. Early evidence suggests that the conflict might bring about large consequences to business operations and households alike (World Bank Group forthcoming). These renewed pressures on the operating environment for firms can also be seen in later rounds of the HFPS-F. Figure 3 shows that higher prices for products and

³ While Ethiopia did not introduce a complete lock-down, it declared a 5-month State of Emergency in April 2020 to limit the spread and mitigate the impact of COVID-19. The State of Emergency included important restrictions that affected business operation including but not limited to banning the congregation of more than four people, banning the sale of alcoholic drinks in bars and restaurants, early closure of restaurants, limiting transportation services (even-odd plate scheme to encourage people to stay at home), reduction of passenger load by 50 percent, banning tenant eviction and rental price hikes, suspending all forms of sporting activities, closing of playgrounds, meeting venues and so forth.

services, lower supply of raw materials and intermediate goods, and lower demand continue to be key challenges identified by firms in 2022.

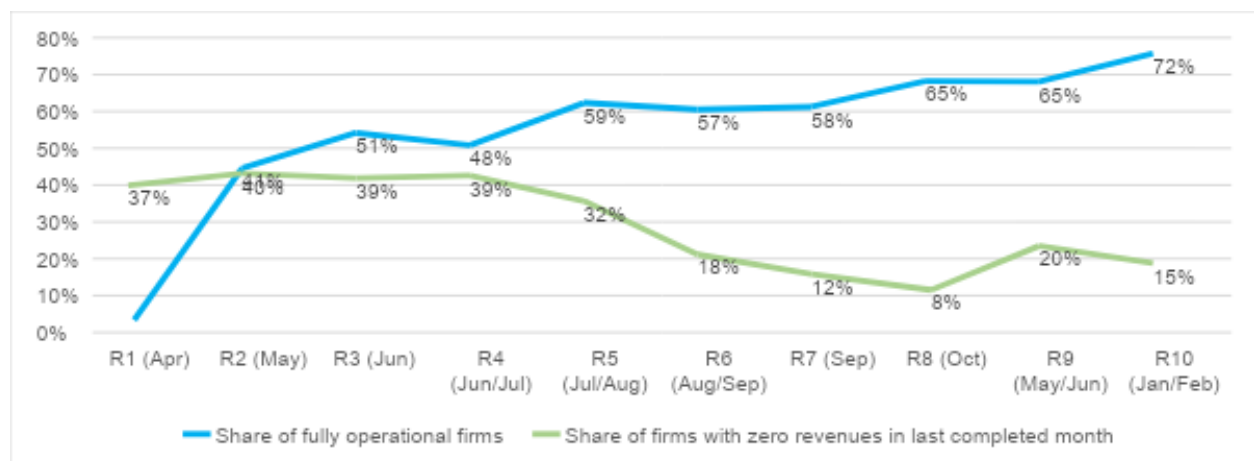
Figure 3: Share of firms that have been affected by changes in input costs and demand chains



The COVID-19 pandemic and associated containment measures to curtail its spread limited firms' production and operation activities. Figure 4 shows that COVID-19 greatly affected firms' operations with more than 42 percent of firms completely closing their business (0 days operational) in April 2020. Moreover, no firm was fully operational (15-21 days operational) in April 2020. This trend is most likely associated with restrictions on movements and business activities introduced by the government through its State of Emergency. Most firms became fully operational in round three (51 percent) though a small decline in round four (48 percent) is observed.

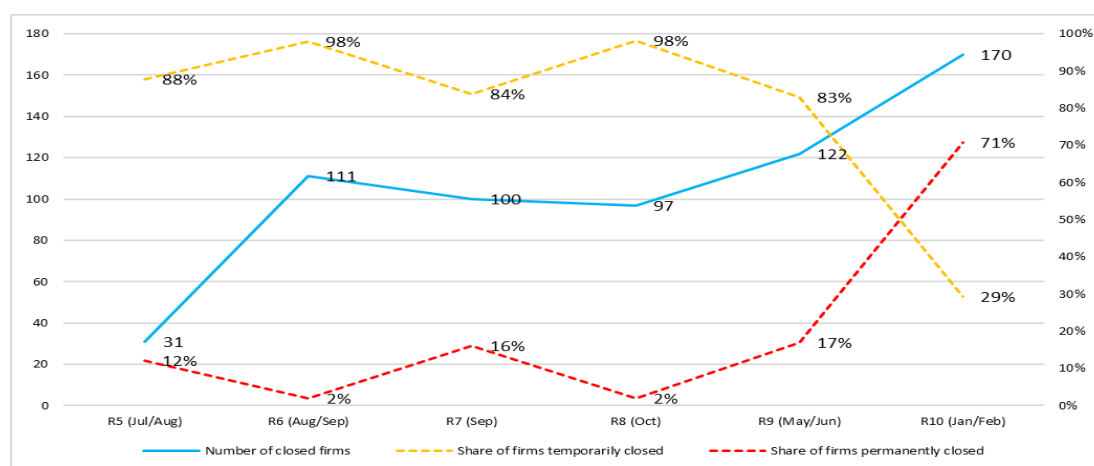
A larger share of firms started full operations, particularly after August/September 2020 (round six of the survey) with a continuous increase in every survey round. In January/February 2022, 72 percent of firms were fully operational. While the significant improvement in firms' level of operations is a piece of encouraging news, the presence of a significant number of firms that remain either closed or operate below their capacity is worrying. In a context where the number and quality of formal firms are limited, the closure or the under-capacity operation of each firm is associated with limited job creation and imply that opportunity for poverty reduction or livelihood subsistence is lost.

Figure 4: Share of fully operational firms and share of firms with zero revenues



The COVID-19 pandemic has also increased firms' closure. Figure 5 shows that the number of closed firms, with slight reductions in rounds seven and eight, increased between rounds six and ten. The closures were largely temporary with only a few entrepreneurs deciding to close the business permanently. Figure 6 shows that, of firms that were closed, more than 80 percent were temporarily closed. The main reasons for business closures were lower demand for products/services, lower supply of raw materials and intermediate goods, COVID-19 regulations, and closure of marketplaces/shops. For example, on average, about 59 percent of firms were closed due to lower demand for products/services between rounds five and ten.

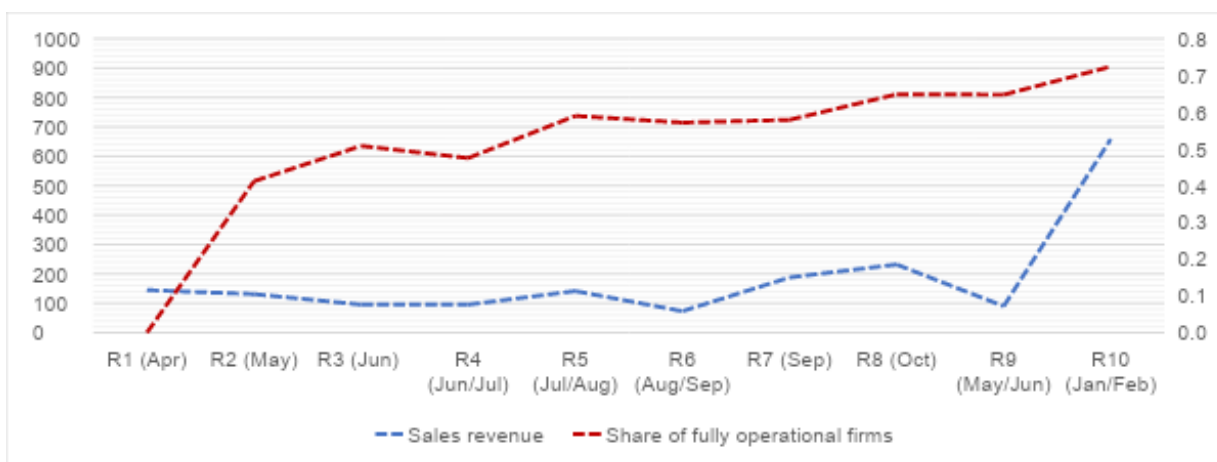
Figure 5: Number of closed firms and share of firms temporarily or permanently closed of those firms closed



MEDIUM TERM IMPACT ON FIRMS' REVENUES AND PROFITS

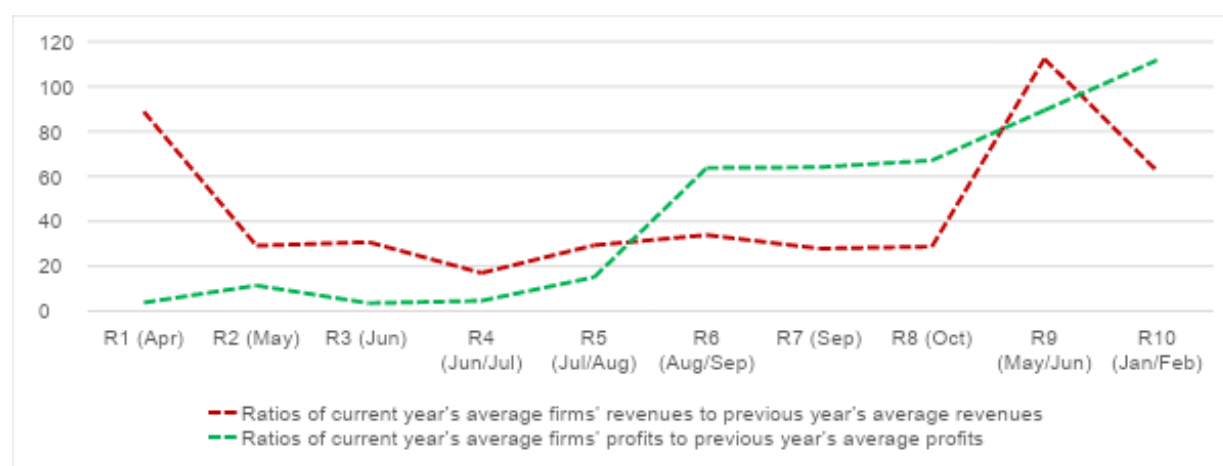
The COVID-19 pandemic significantly reduced firms' sales revenues in the early months of the pandemic (Wieser et al. 2021). Yet, the sales revenues of firms gradually recovered, especially in the medium to longer term. Recovery of sales revenue was particularly strong starting in May/June 2021, just over one year after the onset of the pandemic, and even became stronger one and a half years after the onset of the pandemic (in January/February 2022). More specifically, the average sales revenue increased from ETB 90 thousand in round nine to ETB 659 thousand in round ten. Figure 6 also shows that firms' average sales revenues increased starting in round six, with a slight reduction in round 9, an effect mainly associated with most firms' resumption of full operations.

Figure 6: Average sales revenues in last completed month (ETB), in thousands, and share of fully operational firms



During the first six months of the pandemic, firms' revenues significantly declined compared to the same month of the previous year. Firms' revenues substantially increased, particularly in the medium and longer term. Figure 7 shows that firms' profits significantly increased starting in July/August 2021 (round five). In May/June 2020, profits were above those of the same month of the previous year. The highest percentage drop in average revenues was observed in June/July 2020 (round four) of the survey, where firms' current year's revenue amounted to only 17 percent of revenues in the same month of the previous year. After round four, the ratios of firms' revenues increased steadily, which can be attributed to increased operations by most firms, particularly from round six onwards (Figure 6). The surge in firms' revenues is associated with the increase in demand for products/services and improvements in the supply of raw materials and intermediate goods, as shown in Figure 3.

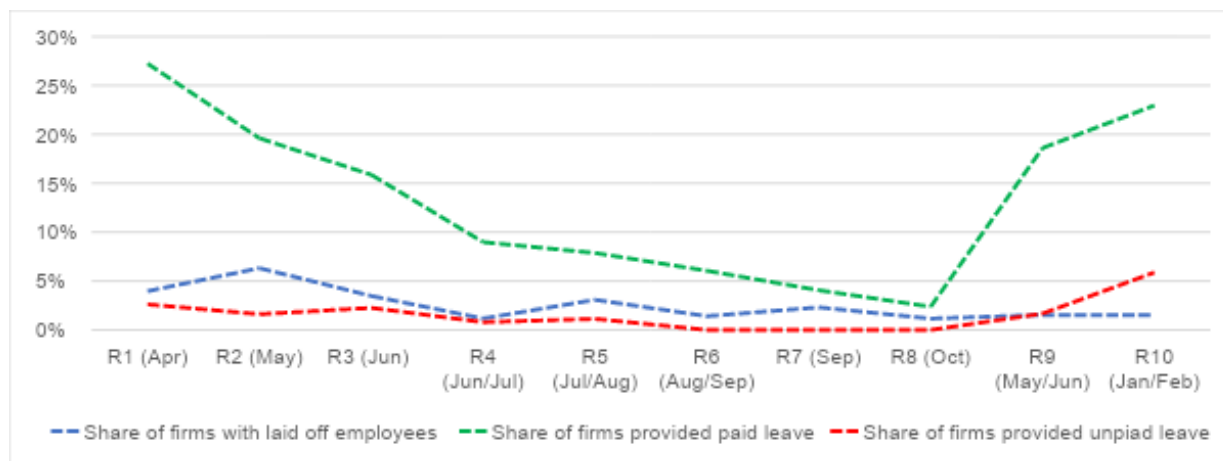
Figure 7: Ratios of current year's average firms' revenues to previous year's average revenues



MEDIUM TERM IMPACT ON EMPLOYMENT

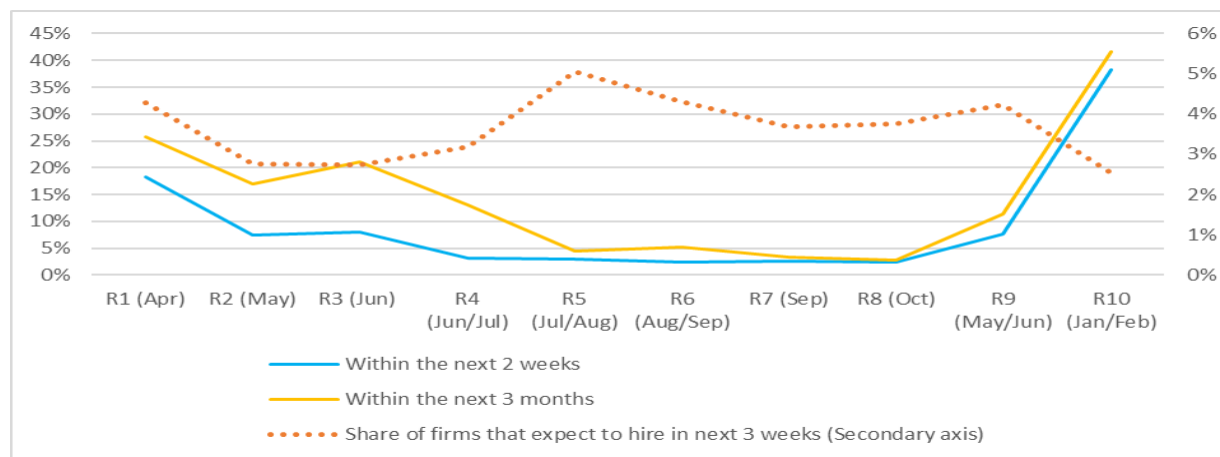
In response to lockdowns, stay-at-home orders, and social distancing requirements triggered by the COVID-19 pandemic, businesses were forced to find ways to cope with the negative financial consequences of the pandemic. To attenuate the adverse effects of the COVID-19 pandemic, firms in Addis Ababa responded in one or more of three ways: (i) sending workers on paid leave, (ii) laying off workers, and/ or (iii) adjusting employees' wages (Wieser et al. 2021). Figure 8 shows that firms opted to send employees on leave in the initial phases of the pandemic rather than laying them off. With an improved operational environment in the latter days of the pandemic particularly between round four and eight, the share of firms which granted leave also decreased. However, after round eight, an increasing share of firms granted paid and unpaid leave to their workers.

Figure 8: Share of firms with laid off employees, and share of firms which provided leave



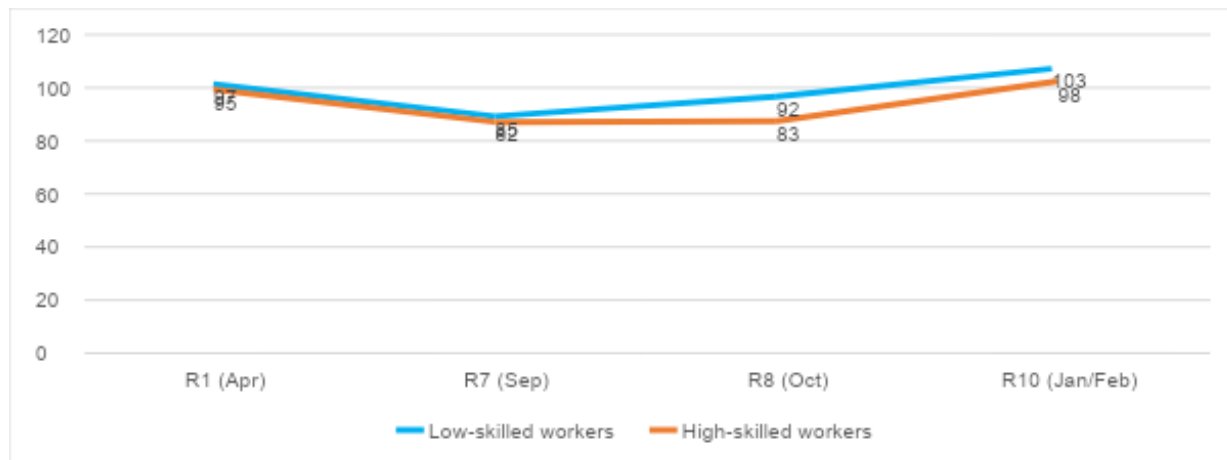
Yet, firms' expectations of their future do not seem bright, likely related to the economic downturn in recent months related to foreign currency shortages, global supply shock, and the conflict in the Northern part of Ethiopia. An increasing share of firms expects to lay off workers, a share that has vastly increased since May/June 2021 (Figure 9). On the other hand, hiring expectations remain subdued among firms in Addis Ababa, even a year and a half after the onset of the pandemic. Around 3 percent of firms expected to hire new employees in January/February 2022 (round ten), lower than the 4 percent observed at the onset of the pandemic in April 2020 (round one) (Figure 11).

Figure 9: Share of firms that expect to lay off and hire workers



The longer the pandemic lasted, firms moved from granting leave and laying-off workers to reducing workers' salaries with pay cuts observed later in the pandemic (Wieser et al. 2021) but workers' salaries recovered in the medium term. Salaries of low- and high-skilled workers reduced in the first six months of the pandemic (Figure 10), with high-skilled workers being more severely affected until round seven of the survey. However, starting in October 2020 (round eight), salaries of low- and high-skilled employees increased. More specifically, the current year's average workers' salary to the previous year's average salary of low-skilled workers increased from 92 in October 2020 (round eight) to 103 in January/February 2022 (round ten). Likewise, the ratio of the current to previous year's salaries of high-skilled workers increased from 83 percent in round eight to 98 percent in round ten.

Figure 10: Ratios of current year's average workers' salary to previous year's average salary



4. OUTLOOK OF FIRMS

To gauge firm recovery, it is important to look not only at whether firms expect to hire workers (Figure 9) but also the number of workers (as a share of the current number of employees). Figure 12 presents this information in three discrete groups based on the extent to which firms intend to expand their workforce: (1) firms that expect to expand their workforce by less than 10 percent, (2) between 10 percent and 50 percent, and (3) by more than 50 percent.

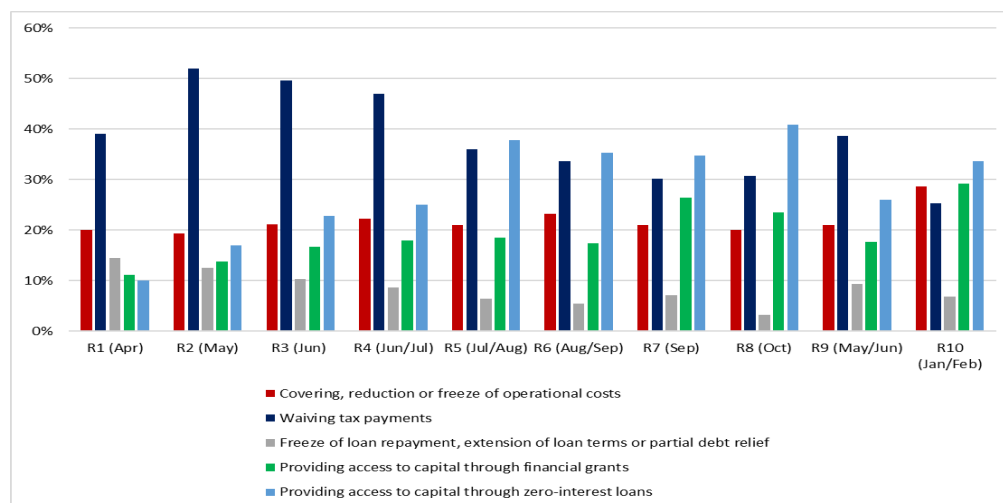
Mirroring Figure 9, Figure 12 shows that though firms expected to hire some workers, they did not expect to hire large numbers of workers. More specifically, a larger share of firms expected to hire less than 10 percent of their current number of employees, but only between round six and seven of the survey. After round seven, about 2 percent of firms expected to increase the number of employees by 10-50 percent of their current employees. Moreover, some firms appear less enthusiastic about increasing the number of their employees by larger proportions. The share of firms that expect to hire new employees, by more than 50 percent of their current employees, for example, declined in the medium term (Figure 12). This is most likely associated with the downturn in economic activity in Ethiopia resulting from conflict-induced foreign currency shortages and a global supply shock (Bagouri, 2021).

Figure 12: Share of firms which expect to hire new employees compared to their current employees



To overcome the financial challenges resulting from the COVID-19 pandemic, firms indicated that waiving tax payments, covering operational costs (such as costs for sheds and working spaces), freezing loan repayments, and extending loan terms or partial debt relief were the most relevant policy measures to support them (Figure 13). The share of firms indicating that waiving tax payments was the most appropriate policy measure increased substantially between round one (39 percent) and round two (52 percent). Moreover, Figure 13 shows that the share of firms indicating the provision of access to capital through zero-interest loans has potentially increased over the survey rounds. More specifically, it increased from 10 percent (in round one) to 34 percent (in round ten).

Figure 13: Share of firms indicating most relevant policy measures



5. CONCLUSION

The COVID-19 pandemic has had severe economic and social impacts and upended people's livelihoods in developed and developing countries alike. Ethiopia was no exception. This study draws on ten rounds of high-frequency phone surveys of firms (HFPS-F), conducted between April 2020 and February 2022, in Addis Ababa, Ethiopia. The HFPS-F was designed to monitor the impacts of the COVID-19 pandemic and related containment measures on formal firms. The first eight rounds of the HFPS-F were undertaken within the first six months of the pandemic and allowed for a high-frequency follow-up to better understand the effects of and responses to the COVID-19 pandemic on firms. The last two rounds were undertaken approximately one year and one year and a half into the pandemic and allow for a better understanding of medium-term impacts on firms. This study focused on COVID-related short-term impacts on firms' operations and their recovery with respect to operations, revenues, employees in the medium-term.

The paper shows that further to the direct impact of the COVID-19 pandemic on individuals and households, lockdown measures, disruptions to supply chains, and a perceptible fall in consumer demand shaped how firms operated, during, and after the COVID-19 pandemic. The COVID-19 pandemic affected more than 90 percent of firms in Addis Ababa in the early stages of the pandemic, but the impact subsided over time and by January/February 2022 only 46 percent reported to be affected by

COVID-19. In the earlier days of the crises, the COVID-19 pandemic and associated containment measures to curtail its spread limited firms' production and operation activities. In April 2020, for example, more than 42 percent of firms completely closed their business (0 days operational) but most firms became fully operational by June 2020.

COVID-19 has also caused unprecedented supply chain disruptions in Ethiopia and firms have faced lower access to and increase in prices of raw materials and intermediate goods, which severely hampered firms' operational and financial performances. Moreover, conflict-induced supply side shortages exacerbated existing supply-side and balance of payments challenges, putting additional pressure on input prices. As a result, firms have faced a significant reduction in sales revenues in the early months of the pandemic, but sales revenues gradually recovered, especially in the medium-term.

Yet, firms' expectations of their future do not seem bright, likely related to the economic downturn in recent months connected to foreign currency shortages, global supply shock, and the conflict in the Northern part of Ethiopia. An increasing share of firms expects to lay off workers, a share that has vastly increased since May/June 2021. On the other hand, hiring expectations remain subdued among firms in Addis Ababa, even a year and a half after the onset of the pandemic.

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