

Monitoring COVID-19 impacts on firms in Ethiopia



Firm closure amid the COVID-19 pandemic:

A brief look at the evidence from HFPS-F

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INTRODUCTION



The COVID-19 pandemic and its negative economic effects create a need for timely data and evidence to help monitor and mitigate the social and economic impacts of the crisis. To monitor the impacts of the COVID-19 pandemic and related containment measures on formal firms in Ethiopia and inform the policy response, the World Bank, in collaboration with the government, is implementing a high-frequency phone survey of firms (HFPS-F). The HFPS-F interviews a sample of firms in Addis Ababa every three weeks for a total of eight survey rounds, and an additional sample of firms in four other cities in Ethiopia (Adama, Bahir Dar, Hawassa, and Mekelle) for a total of seven rounds. This high-frequency follow-up allows for a better understanding of the effects of and responses to the COVID-19 pandemic on firm operations, hiring and firing, and expectations of future operations and labor demand in order to better tailor and implement interventions and policy responses and monitor their effects.

For the current study, six rounds of the HFPS-F survey are used, mainly focusing on the business closure module from round six.¹ The six rounds are roughly three weeks apart and were implemented between April 15 and September 8, 2020 in Addis Ababa.² The sampling strategy is explained in detail in a companion technical note. Six survey [briefs](#) highlighting the impact of the pandemic on firms' operations and labor dynamics are already produced along with two special topic briefs focusing on the gendered-difference of the pandemic and how firms were affected by the State of Emergency. The current brief examines firm closure in relation to firms direct or indirect exposure to the social and economic impacts of the pandemic. The good news is that most of the firms that are closed have stopped production or services temporarily with less than 2 percent of firm closures reported to be permanent in R6 (roughly August). The following analysis thus focuses on temporary closures and mostly rely on data from 436 firms, of which 108 were temporarily closed and 328 were open at the time of the R6 survey.³

KEY HIGHLIGHTS



Firm closure has substantially reduced from 42 percent in April (R1) to 25 percent in September (R6). The share of firms that operate full time has also increased from 41 percent in May (R2) to nearly 60 percent in R5 and R6.



A drastic decline in demand and forced closure due to the COVID-19 pandemic related restrictions account for 82 percent of reported closures. The COVID-19 pandemic related restrictions particularly affected the operations of service sector firms.

¹ We are not able to combine the Addis Ababa and the regional cities sample as the sampling procedure is very different. The sample fluctuates across the survey wave and the 414 respondents answered the fifth survey round. Out of this, 386 respondents completed the survey in all the rounds.

² At the beginning of R6 on August 17th, the total confirmed COVID-19 cases were 31,336. By the end of R6, on September 8th, the confirmed cases jumped to 60,784.

³ We exclude the permanently closed firms from the analysis and focus on those that are temporarily closed. We only define firm closure when it is clearly reported; i.e., we also exclude several firms that did not respond to our surveys as we are not sure about their status, and we cannot attribute their absence in the data to closure. Among the open firms, five reported zero days of operation in the three weeks period even if the firm was open for business.

! Firms were closed for 16 weeks on average; firms in services are closed two weeks longer than those in industry. Older and established firms are closed for 10 weeks on average.

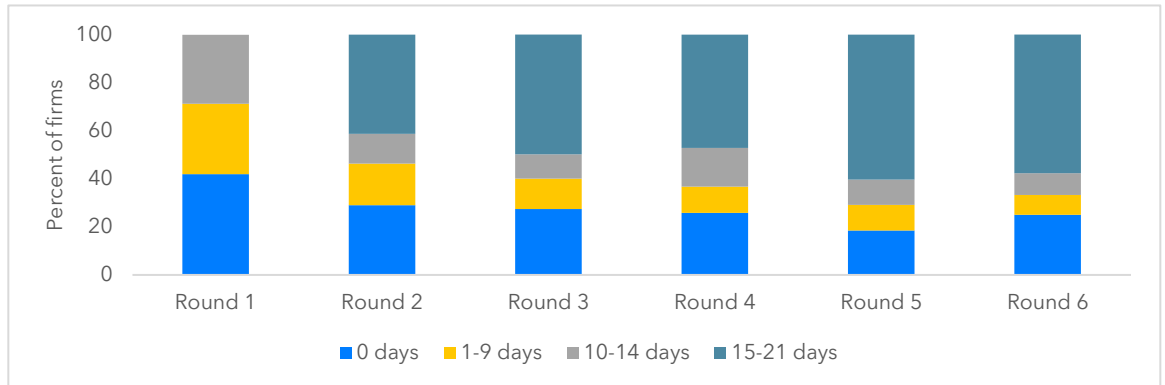
! Nearly 40 percent of firm owners who closed the businesses have not been engaged in any other paid work. About 30 percent of owners of closed businesses are preparing for reopening businesses. Among firms that have temporarily stopped operation, a much larger share of women business owners are engaged in non-paid activities, mainly in household duties.

DAYS OF OPERATION



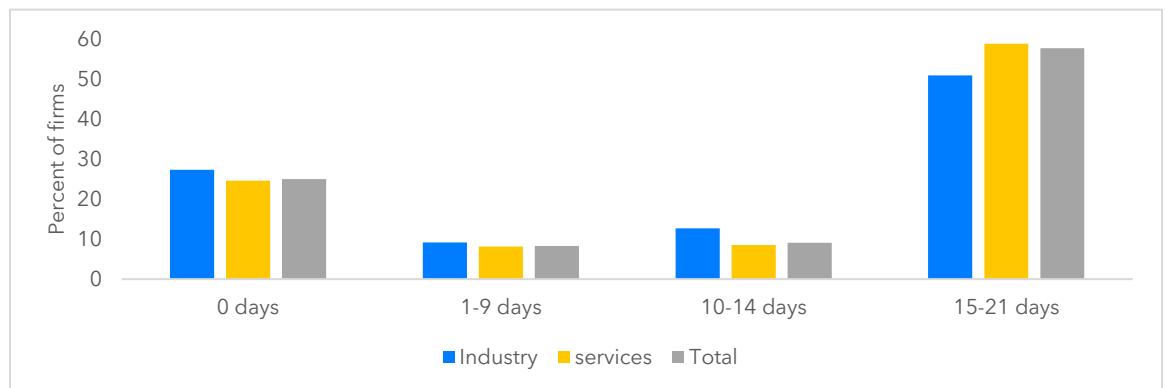
In the first round, about 42 percent of the sampled firms were either temporarily or permanently closed. In subsequent periods, as restrictions relaxed and activities resumed, a gradual reopening of businesses was observed. By the last round (R6) in August, only one quarter of all firms were closed; i.e., they had zero days of operation in the three weeks preceding the interview (Figure 1).

Figure 1. Days of operation across survey rounds



As indicated in Figure 1, the share of firms that operate 15 to 21 days has increased from 41 percent in R1 to 58 percent in R6. Further, only 8 percent of firms kept the business open in the 1-9 days range. While the extent of firm opening is broadly similar between the service sector and industry firms, the former appears to have a large share of firms that are fully operational; i.e., 51 percent of industry firms and 59 percent of service sector firms were operational full time, for 15-21 days (Figure 2). There is a small difference in the share of firms that operate 10-14 days and an even smaller difference among those with zero days of operations in the two sectors.

Figure 2. Days of operation across survey rounds by sector



Own-account firms are more likely to remain closed compared to micro as well as small and large enterprises. A third of own-account firms were closed in R6, but only 18 percent of micro and 16 percent of small and large enterprises (Figure 3). There is a monotonic positive relationship between firm size and days of operation—as the firm size increases, the likelihood of being operational more days also increases. The vulnerability of own-account and micro firms to the COVID-19 pandemic is higher than for large firms, consistent with a near stylized observation about the negative correlation between firm survival and size. We also find that younger firms, those that are less than 5 years in operation, are more likely to report closure than well-established firms. There is, however, no difference between male and female-owned firms in their closure status. On average, closed firms have also been shut for 16 weeks with limited difference by sector, size, age, and sex of the business owner (Table 1).

Figure 3. Days of operation across survey rounds by firm size

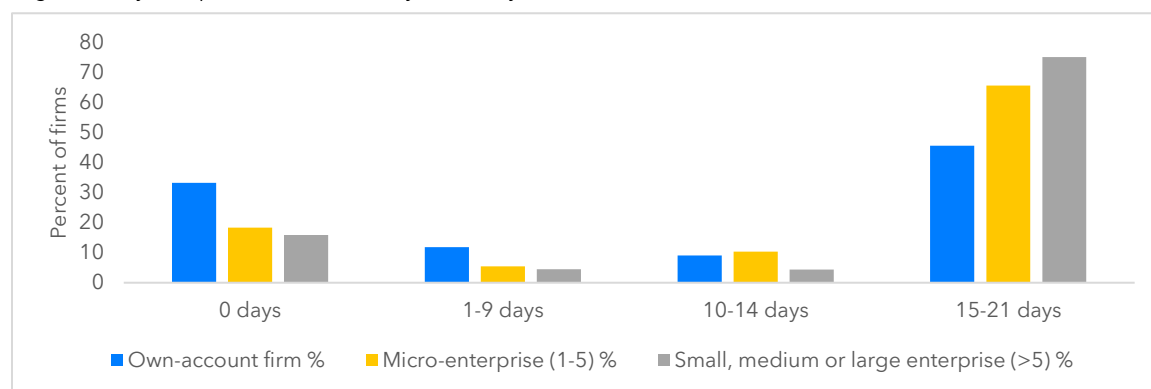


Table 1. Number of weeks business was closed

	Average	Median	Standard deviation
All closed firms	16	16	10
By sector			
Industry	16	16	11
services	17	16	10
By size			
Own-account firm	17	16	10
Micro-enterprise (1-5)	14	15	10
Small, medium or large enterprise (>5)	17	22	8
By firm age			
0 years	17	20	8
1-2 years	18	19	10
3-4 years	19	20	11
5-9 years	15	16	11
10 years or more	10	8	7
By sex of business owner			
Male	17	19	10
Female	15	14	10

KEY FACTORS FOR CLOSURE



The two most frequently cited reasons for firm closure are a drastic decline in demand and forced closure of firms due to the COVID-19 pandemic related restrictions, accounting for 82 percent of reported

closures.⁴ There are important sectoral differences. About 63 percent of firms in the industry sector attribute closure to lower demand and 12 percent to lower supply of raw materials and intermediate goods. COVID-19 related restrictions are only the third important factor next to lower demand and lower supply of raw materials (Table 2). By contrast, a large share of firms in the service sector (43 percent) mentioned COVID-19 related restrictions as the main reason to have closed the businesses. As such restrictions loosen, resulting from the removal of the State of Emergency on September 8, 2020, more service sector firms are expected to resume operation.

Table 2 indicates that as the firm size increases, the importance of lower demand in explaining firm closures intensifies. About 53 percent of small, medium, and large (SML) enterprises, for example, identify lower demand as a key factor for closure, while 47 percent of micro and 42 percent of own-account enterprises also associate lack of demand as the reason of business' closure to. A slightly different pattern emerges when looking at the relationship between firm age and the share of firms attributing closure to demand. A much smaller share of older and well-established firms attribute closure to a decline in demand. For example, 53 percent of the newest firms (0 years category) report to have stopped operation due to lack of demand, but only 29 percent of the oldest firms, those that are operated for 10 years and more, attribute closure to demand. The latter group of firms seem to have been affected more by COVID-19 related restrictions with 49 percent associating their business' closure due to such restrictions. Presumably due to their preponderance in the service sector, female-owned businesses are more likely to be affected by COVID-19 related restrictions than male-owned businesses.⁵

We also directly asked respondents how strongly they associate their business' closure to the COVID-19 pandemic. Respondents were asked to use a scale 1 to 10, 1 implying the pandemic did not have any impact on the businesses closure while 10 implies the business is closed entirely due to the pandemic, and 5 signifying a score somewhere between the two extremes. The average score for the sample is 8.2 and the median score is 10 suggesting that firm closure is mostly attributed to the COVID-19 pandemic.

⁴ While Ethiopia did not introduce a complete lock-down, it declared a 5-month State of Emergency (SOE) in April 2020 to limit the spread and mitigate the impact of COVID-19. The SOE included important restrictions that affected business operation including but not limited to banning the congregation of more than four people, banning the selling of alcoholic drink 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.

⁵ About 94 percent of female-owned and 72 percent of male-owned businesses are operated in the service sector.

Table 2. Main reason for business closure

	Lower demand for products/services	Lower supply of raw materials and intermediate goods	Restricted movement of workers	Forced closure of business due to Coronavirus regulations	Closure of marketplace/shops	Price of raw materials and intermediate goods	Maintenance / Repairs	Owner/shareholders Not Willing to Invest	Weather Conditions	Other (specify)
All closed firms	44	5.7	1.8	38.4	1.5	1	2	1	0.8	3.9
By sector										
Industry	63.4	11.9	0	10.9	3	0	0	0	5.1	5.7
services	40.6	4.5	2.1	43.3	1.2	1.2	2.3	1.2	0	3.5
By size										
Own-account firm	41.6	7.2	3	35.4	1.7	0	1.7	1.7	1.3	6.4
Micro-enterprise (1-5)	46.5	2.7	0	43.4	1.4	3	3	0	0	0
Small, medium or large enterprise (>5)	52.9	6.6	0	40.5	0	0	0	0	0	0
By firm age										
0 years	53.2	0	0	44.2	0	0	0	0	0	2.5
1-2 years	44.2	7.1	5.2	30.2	4.2	0	0	2.9	2.2	4.1
3-4 years	49.2	1.9	0	39.8	0	4.5	0	0	0	4.5
5-9 years	33.9	7	0	43.2	0	0	15.9	0	0	0
10 years or more	29.1	14.2	0	49.2	0	0	0	0	0	7.5
By sex of business owner										
Male	46.2	5.7	2.4	36.2	2	0	2.7	1.3	1	2.5
Female	34.2	8.5	0	46.9	0	3.5	0	0	0	6.9

CURRENT ENGAGEMENT



The firm closure module also inquired about what firm owners are doing whilst the firm is closed. The very first row in Table 3 shows that about 30 percent of firms are preparing for reopening of businesses, about 5 percent are preparing to launch a new business, 9 percent are engaged in wage work, and 16 percent in other self-employment activities. Overall, nearly 40 percent of firms that closed the business are no longer working, with more than a third engaged in household activities. Relatively more firms in the industry (36 percent) are preparing for reopening businesses than firms in the services sector (28 percent). Similarly, 46 percent of firms in the industry and 37 percent of firms in the services sector report to be no longer working. The vast majority of the firm owners who do not work report to be engaged in household duties.

Among closed firms, own-account (34 percent) and micro firms (42 percent) are more likely to report being busy with household duties than preparing to re-open the businesses. By contrast, more than two third of the small and large enterprises are planning to re-open the businesses, while about 20 percent report to be busy with household duties. In short, while larger firms are less likely to be closed amid the pandemic, even among closed firms, there is evidence for early sign of quick business resumptons among larger firms.

Table 3 also shows that a large share of younger firms is keen to re-open the businesses and are less likely to report being busy with other household activities amid business closure. While 54 percent of new firms report to be preparing to re-open the businesses, only 20 percent of firms that are 10 years and above report the same. Surprisingly and perhaps reflecting lack of agility, about 50 percent of the owners of these old firms are in the 'No longer works – busy with household duties' category. The corresponding figure for the new firms is 15 percent. One particular group of firm owners that operate firms between 3 to 4 years old are also more likely to be applying for a wage job.

Among closed firms, there is also a striking gender difference in the current activity of the business owners. While a third of male-owned business planned reopening, only 15 percent for female-owned businesses planned to do the same. More male-business owners (10 percent) also report to be engaged in wage-jobs compared to women (4 percent). The reverse is true for self-employment where 18 percent of female and 14 percent of male business owners are participating in self-employment while the business is temporarily closed. Perhaps the most striking difference in activity uptake is observed among the share of firm owners who report to be no longer working due to household activities or illness or maternity. Twice as many women firm owners—close to 60 percent—said that they are not currently engaged in any work for pay compared to their male counterparts (32 percent). Consistent with the earlier [finding](#) that the COVID-19 pandemic has disproportionately affected women-owned firms, once the business is closed, women entrepreneurs' labor outcomes tends to be worse than their male counterparts. This is reflective of the common gender differentials in labor market outcomes where entry to formal paid work is often more difficult for women and instead, they are forced to engage in unpaid family work as caregivers and homemakers.

Table 3. Activities firm owners are engaged whilst the firm is closed (first choice)

	Preparing to open a new business	Preparing for re-opening business	Engaged in salaried work	Engaged in another business/self-employment	No longer works/ busy with household duties	No longer works (illness/ maternity)	Applying for Jobs
All closed firms	5.1	29.1	8.9	15.7	36.4	2.8	2
By sector							
Industry	2.8	36.1	5.9	8.7	41.4	5.1	0
services	6.6	27.5	9.4	16.7	35.1	2.3	2.3
By size							

Own-account firm	3	29	7.4	19.6	34.3	3.3	3.3
Micro-enterprise (1-5)	12.9	19.8	13.5	11.7	42	0	0
Small, medium or large enterprise (>5)	0	67.5	0	0	21.3	11.1	0
By firm age							
0 years	2.5	54.1	17.9	10.8	14.7	0	0
1-2 years	5.2	26.1	8.7	15.3	41.9	2.9	0
3-4 years	0	25.2	6.6	19.3	36.3	3.4	9.1
5-9 years	8	19.5	11.4	25.9	35.3	0	0
10 years or more	13.4	20.9	0	7.5	50.8	7.5	0
By sex of business owner							
Male	6.8	32.9	10.6	13.9	30.4	1.3	4
Female	3.5	15.4	3.5	18.2	53.5	6.1	0

EXPLAINING CLOSURE



Finally, we provide a further test of whether firm closure and current business owners engagement varies by key enterprise characteristics. The probit estimation model indicated in Table 4 presents the results. Column 1 indicates a dummy that assumes the value 1 if the firm explicitly reports that it is temporarily closed and otherwise zero. Column 2 shows a dummy that equals 1 if the firm had zero days of operations and Column 3 captures the same variable but with observations pooled from R1 to R6.⁶ Column 4 presents number of weeks the firm was closed. The subjective rating of the firm on the impact the COVID-19 pandemic on closure is standardized with mean zero and standard deviation one. The final column presents a dummy that takes 1 for closed businesses whose owner is no longer working for pay.

The probit estimates suggest that service sector firms are more likely to have temporarily stopped operation or have zero days of operation and firm closure is negatively related with firm size (Columns 1 to 3). Own-account firms are closed for a significantly greater number of weeks than micro and SML enterprises. Similarly, firm closure is more likely attributed to the COVID-19 pandemic among own-account firms than micro and SML. Column 6 indicate that among firms that have temporarily stopped operation, women business owners are more likely to remain out of paid work compared to their male counterparts, a statistically significant result at 5 percent significance level. Business owners in the service sector and those operating larger firms are less likely to report being out of paid work. Consistent with the earlier finding, business owners who had operated older firms and those who suspended operation are less likely to be productively engaged in other paid work whilst the business is shut.

Table 4: estimated model of firm closure during the pandemic (Closed=1)

VARIABLES	The firms is temporarily closed	The firm has zero days of operation in September	The firm has zero days of operation (R1 to R6)	Number of weeks the firms is closed	Standardized COVID-19 impact rating score on firm closure	The respondent no longer works
	(1)	(2)	(3)	(4)	(5)	(6)
Female	-0.01 (0.155)	0.06 (0.153)	-0.06 (0.057)	-1.34 (3.509)	0.11 (0.391)	0.38** (0.185)
Service	-0.36** (0.170)	-0.42** (0.168)	-0.38*** (0.061)	-6.27 (3.802)	-0.41 (0.432)	-0.36* (0.211)
Micro	-0.42*** (0.145)	-0.43*** (0.143)	-0.34*** (0.052)	-10.48*** (3.316)	-0.69* (0.370)	-0.22 (0.179)
SML	-0.83***	-0.89***	-0.80***	-18.12***	-1.55**	-0.63*

⁶ The difference between the two columns is the five firms that report to be operational even when they had zero days of operation in the three weeks preceding the survey.

	(0.257)	(0.257)	(0.089)	(5.934)	(0.656)	(0.327)
1-2 years	0.09	0.03	-0.03	2.05	-0.13	0.48
	(0.215)	(0.213)	(0.080)	(4.807)	(0.534)	(0.311)
3-4 years	0.14	0.15	0.16*	3.75	0.02	0.55*
	(0.234)	(0.232)	(0.086)	(5.232)	(0.583)	(0.331)
5-9 years	-0.37	-0.34	-0.35***	-8.85	-1.15*	0.03
	(0.241)	(0.237)	(0.086)	(5.485)	(0.613)	(0.352)
10 years or more	-0.10	-0.15	-0.24**	-5.46	-0.50	0.66*
	(0.256)	(0.255)	(0.095)	(5.834)	(0.641)	(0.342)
Left censored				326	338	
Right censored				0	0	
Constant	-0.13	-0.04	0.11	-3.77	-0.91	-1.33***
	(0.239)	(0.237)	(0.088)	(5.378)	(0.608)	(0.334)
Observations	431	431	3,026	431	431	426

Standard errors are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

UPCOMING ACTIVITIES



This summary brief is the third in a series of briefs on special topics and the ninth on those reporting on the findings of the high-frequency phone survey of firms. Data collection continues in the coming month by following the same firms every three weeks. Each round's summary brief, table of indicators, and microdata will be made available via the following website: <https://www.worldbank.org/en/country/ethiopia/brief/phone-survey-data-monitoring-covid-19-impact-on-firms-and-households-in-ethiopia>.

BOX: SURVEY METHODOLOGY

The high-frequency phone monitoring survey monitors the economic impacts of and responses to the COVID-19 pandemic on firms with a focus on the effects on firm operations, revenues, and jobs. We call a sample of firms every three weeks between mid-April and mid-September 2020 for a total of eight survey rounds in Addis Ababa and seven survey rounds in other cities. The final dataset will consist of a panel of approximately 800 firms (500 in Addis Ababa and 300 in four other cities—Adama, Bahir Dar, Hawassa, and Mekelle).

The sampling procedure was undertaken in three steps. First, the team cleaned the list of registered firms in number in Addis Ababa, Adama, Bahir Dar, Hawassa, and Mekelle, received from the Ministry of Trade and Industry (MoTI), by removing firms with missing or invalid phone numbers. Second, all phone numbers of the cleaned list of firms were shared with EthioTelecom and only active phone numbers were kept constituting the sampling frame. Third, two survey domains were selected (Addis Ababa and other cities) and the team drew a random sample of firms without replacement, stratified by firm size (proxied by capital) and sector (industry and services). The sample size was set by a tight budget envelope, with a panel of 500 firms in Addis Ababa and 300 firms in other cities after round 8 (7) of the survey operation. Expecting a high non-response rate, we drew a sample of 1,550 firms for Addis Ababa and 800 (200 in each city) firms in other cities.