The Impact of Coronavirus on African Firms: Evidence from COVID-19 focused Enterprise Surveys

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Abstract

Drawing on a representative survey of more than 2500 establishments in seven Sub-Saharan African countries, this paper explores the economic impact of COVID-19 on the private sector. The paper documents a set of facts. We show that majority of firms (as high as 95% in some countries) have temporarily closed operations since the outbreak of the pandemic, while only small fraction of firms permanently closed. Almost all firms experienced decline in sales compared to the same month in 2019, with firms in some countries experiencing about 60% fall in their sales compared to the level in 2019. Firms have employed various adjustments to mitigate the impact of the shock on their financial health and survival, including repurposing their productions and leveraging technology to deliver goods and services, but also through employee retrenchment. An average firm reduced the number of its full-time permanent employees by as high as 40 percent (in Guinea) and 10% in Zimbabwe compared to the pre-COVID level. Despite these major impacts, firms have positive outlooks about the future, with almost all firms noting that they will get back to their normal sales and employment level in the future.

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[1] The authors are from the Enterprise Analysis Unit of the World Bank. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors. They do not necessarily represent the views of the World Bank and its affiliated organizations, or those of the Executive Directors of the World Bank or the governments they represent.

I. Introduction

The spread of the COVID-19 has far-reaching impacts on lives and the economy. The virus and the containment measures necessitated to cub its spread has substantial effects on the private sector. In Sub-Saharan Africa, this is feared to jeopardize its flagging private sector. Sound policy interventions to mitigate the effects requires clear and timely understanding of the magnitude of the impacts and the type of businesses affected the most and the main difficulty they face.

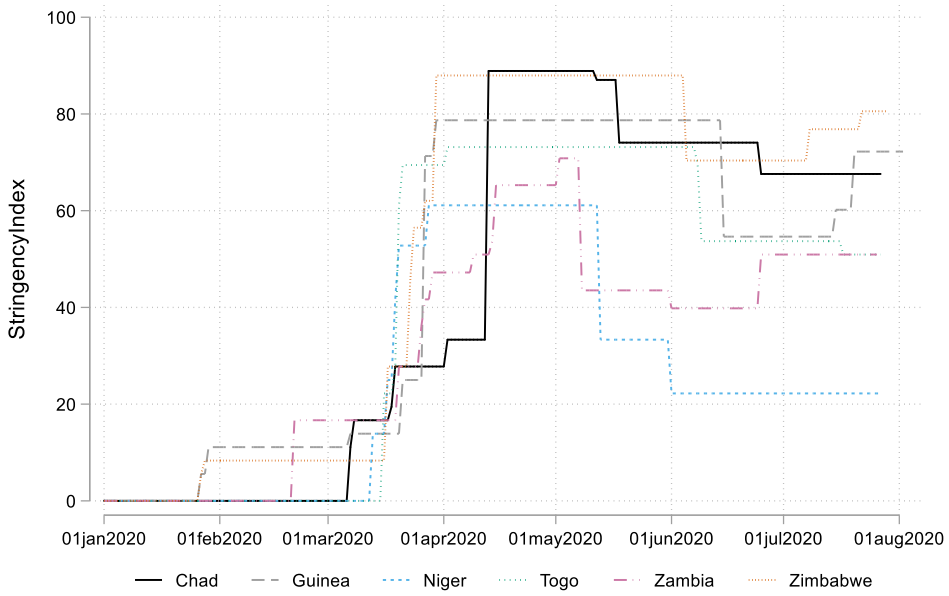
The Enterprise Analysis Unit of the World Bank Group fielded a rapid business survey in 8 countries in SSA; survey is completed for seven of them (Chad, Guinea, Niger, Somalia, Togo, Zambia and Zimbabwe) and in the field for Mozambique. Such data is of fundamental importance to better understand how the pandemic is affecting the productive structure of an economy and to inform policy design to reduce its lasting impacts on the private sector. The surveys build on the most recently completed cycle of World Bank's Enterprise Survey (ES) for each country, which will allow linking the rapid survey to rich set of information collected in the ES. The World Bank Group is undertaking similar data collection efforts in over 50 countries in other regions of the world, which will in turn enable cross-country and -regional comparison as needed.

The paper uses these recently collected data to document the multi-faceted impact of the pandemic on the private sector in the region with a view to document: i) its impacts on the business (on operations, demand and supply chain); ii) how firms have been adjusting to counter the impact of the disruptions; iii) effects on key measures of their financial health; and firms view of their future and desired support to help them navigate the crisis. The paper will also shed some light on the extent to which the impact of the disruption varies across countries and firm type (i.e., which counties and firms are affected the most), and which type of establishments adjust to cope with the disruptions and the nature of the adjustments.

The countries covered in this paper provide good variations in terms of the level of the pandemic and restriction measures employed (see Figure 1a&b). For instance, Chad, Guinea and Zimbabwe followed a relatively stringent public health containment measures, while Niger and Zambia followed less stringent measures. Since containment measures are one of the key channels through which the pandemic effects businesses, such variation would provide contexts to understand the level of impacts.

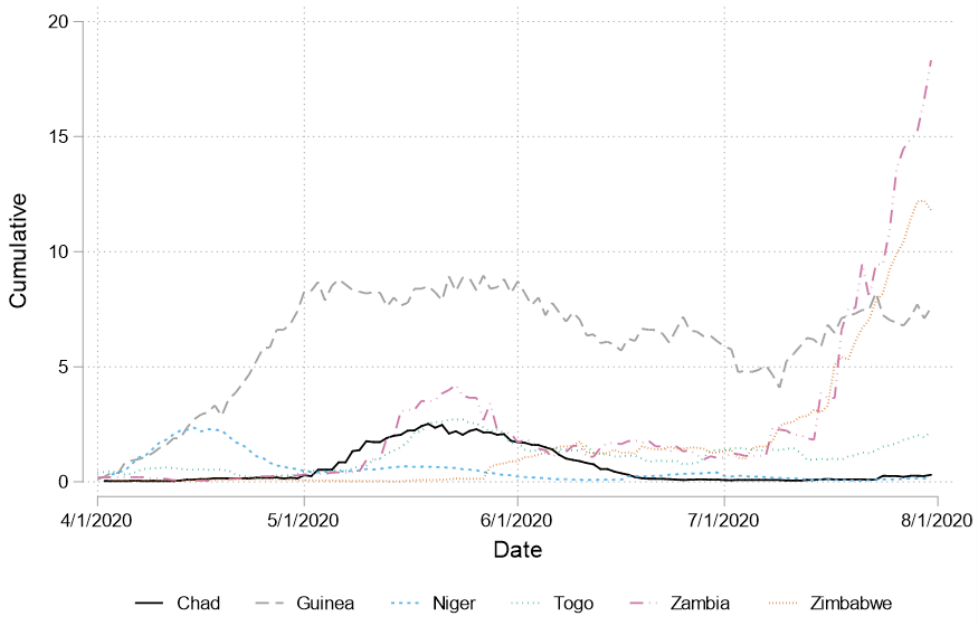
Containment and closure policies

Figure 1a: Timeline of containment measures and level of stringency



Source: Oxford Coronavirus Government Response Tracker.

Figure 1b: Cumulative confirmed COVID cases per 100,000 inhabitants



Source: Oxford Coronavirus Government Response Tracker.

II. Survey and Data

The Enterprise Analysis unit of the World Bank Group (WBG) has been conducting a rapid survey of business as part of the Bank's effort to understand the impact of COVID-19 on the private sector. These surveys are conducted as follow-up surveys on recently completed standard WBG Enterprise Surveys (ES) in several countries. These short surveys follow the baseline ES and are designed to provide quick information on the impact and adjustments that COVID-19 has brought about in the private sector.

The follow-up surveys re-contact all establishments sampled in the standard ES using stratified random sampling. The universe of inference is all registered establishments with five or more employees that are in one of the following activities defined using ISIC Rev. 3.1: manufacturing (group D), construction sector (group F), services sector (groups G and H), transport, storage, and communications sector (group I) and information technology (division 72 of group K). These surveys have been conducted in about 40 countries across the world [2], eight of which are in Sub-Saharan Africa. The paper uses data for seven of the countries in SSA with completed survey. Table 1 provides the countries covered, sample size, and timeline of the ES and the follow-up surveys.

Table 1: Sample Countries

Country	Baseline Survey	COVID Survey	Sample Size
Chad	2018	June and July 2020	150
Guinea	2016	June and July 2020	150
Niger	2017	June 2020	150
Somalia	2019	June and July 2020	450
Togo	2016	June 2020	150
Zambia	2019	June and July 2020	600
Zimbabwe	2016	June and July 2020	600

[2] The list of countries with this survey can be found here: https://www.enterprisesurveys.org/en/covid-19

III. Results

Firms are hit by multiple shocks induced by COVID, affecting demand and supply sides. This section documents some salient empirical patters based on the surveys. We start discussion of the results presenting descriptive results and provide (in section III.5) results based on regression analysis.

III.1. Impact on operations

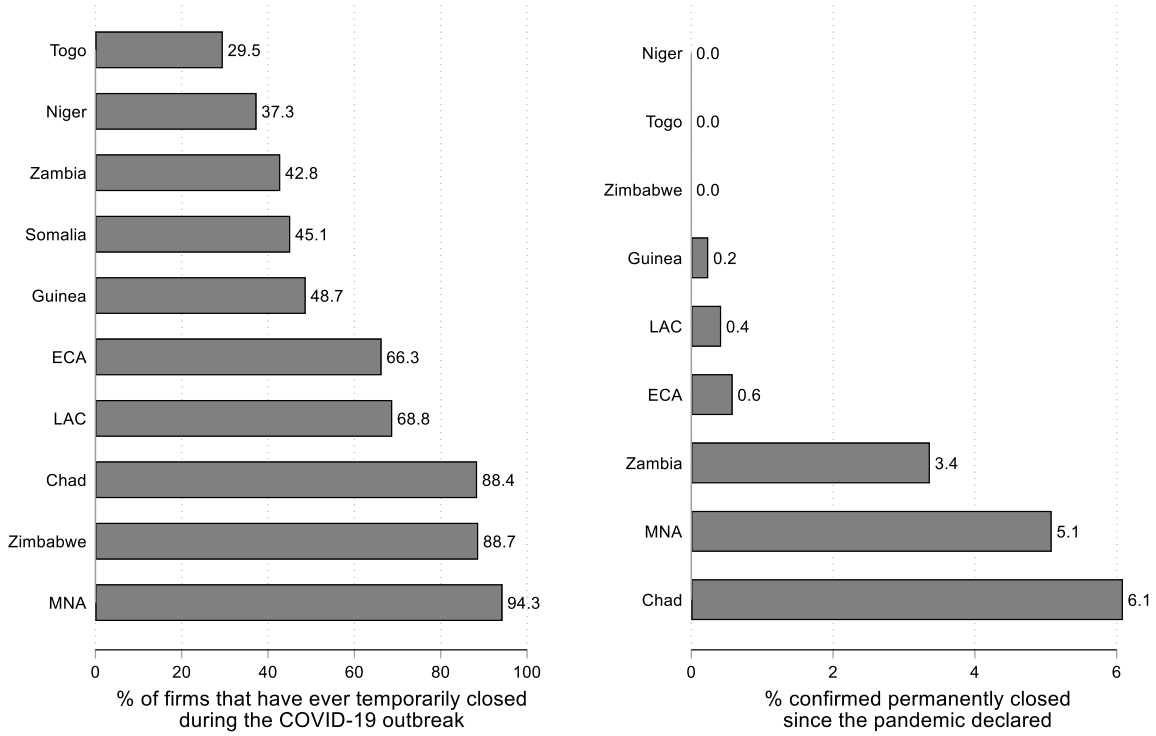
One of the immediate impacts of the virus is closure of businesses, as countries put restrictions on activities and movement of people to contain the spread of the virus. Among others, the survey asked if firms had to suspend business operations at some point since the first case of the virus was reported in their country. Indeed, there are also businesses that permanently close because of the virus.

Figure 2 reports the results for seven of the countries for which data is available as of now, and the average for East and Central European (ECA), Latin America and the Caribbean (LAC), and Middle East and North African (MENA) countries. The left panel of the figure shows the share of firms that have ever temporarily closed since the COVID-19 outbreak, while the right side shows those permanently closed.

The figure reveals that the percent of establishments that temporarily closed differ considerably across countries. For example, in Zimbabwe, close to 90 percent of establishments reported that they were temporarily closed due to COVID-19, whereas in Togo only close to a third of the establishments were temporarily closed due to the pandemic. Except for Chad and Zambia, only few or no firms were permanently closed since the pandemic. In Niger, Togo and Zimbabwe, not a single establishment was permanently closed since March[3].

[3] The COVID-19 focused survey for Somalia is a blend of sample consisting of follow-up to the most recent ES (which covered only two cities) and firms with no ES baseline. Information about permanent closure is available only for interviews that were follow-ups to the standard ES. Somalia is excluded from the right panel of figure 2 since most of the firms interviewed for the COVID-19 survey are those without baseline ES, which makes meaningful estimation of exit rate difficult.

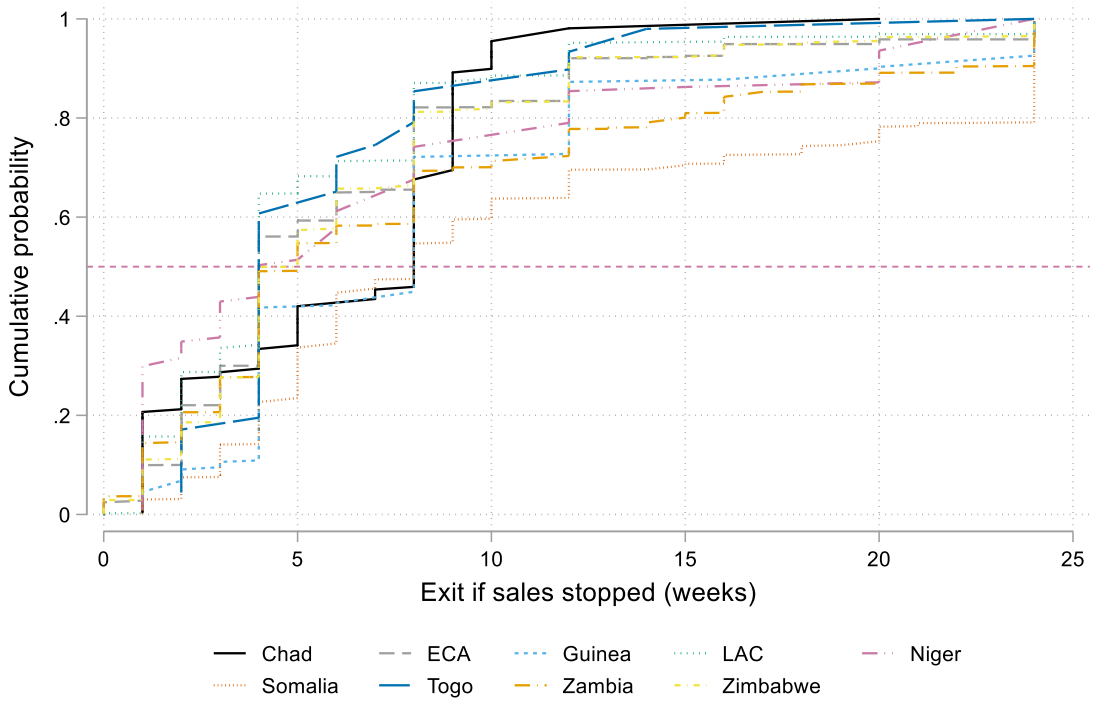
Figure 2: Share of firms temporally and permanently closed



Source: World Bank's Enterprise Surveys COVID-19 Follow-up Surveys.

While only few firms have so far permanently closed, a significant number of firms appear to be vulnerable to getting out of business if the pandemic and the associated policy restrictions persists for a long period of time. Firms were asked for how long the business can survive (i.e., meets its financial obligations) if sales stopped now. The results reveal a stark level of vulnerability of these firms (see Figure 3). For instance, a median firm in Niger, Togo, Zambia and Zimbabwe can survive for just a month from the day their sales stops. For all countries, about 70% of the firms can stay afloat for a maximum of two months if their sales stop as of the survey time.

Figure 3: Vulnerability to exit



Source: World Bank's Enterprise Surveys COVID-19 Follow-up Surveys.

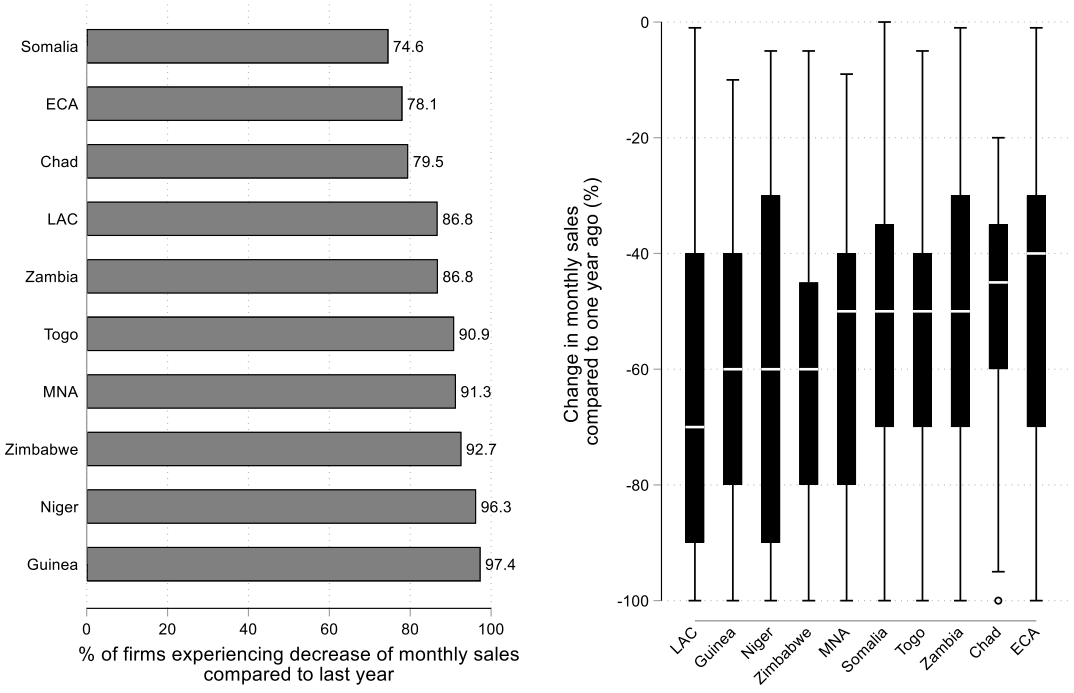
III.2. Impact on Sales

Demand shock has been one of the major channels through which the virus and the policy measures taken to curb its spread affects the business. The survey asks several questions to elicit information on the nature and magnitude of the impact on the demand. Firms were asked how their current sales compare to the same month in 2019, and to indicate the estimated percentage change in sales. Figure-4 presents the results. Depending on the country, between 80% to 98% of the firms indicated that monthly sales this year has been lower compared with similar month in the previous year (left panel), and the average change in monthly sales compared to one year ago (right panel). The figure clearly reveals that almost all firms experienced a decrease in monthly sales compared to the same month in 2019. However, there is significant heterogeneity across firms.

Starkly, an average firm in Guinea, Niger and Zimbabwe experienced the sharpest decline in their monthly sales (about 60%) compared to the level in 2019, with the corresponding figure in Togo,

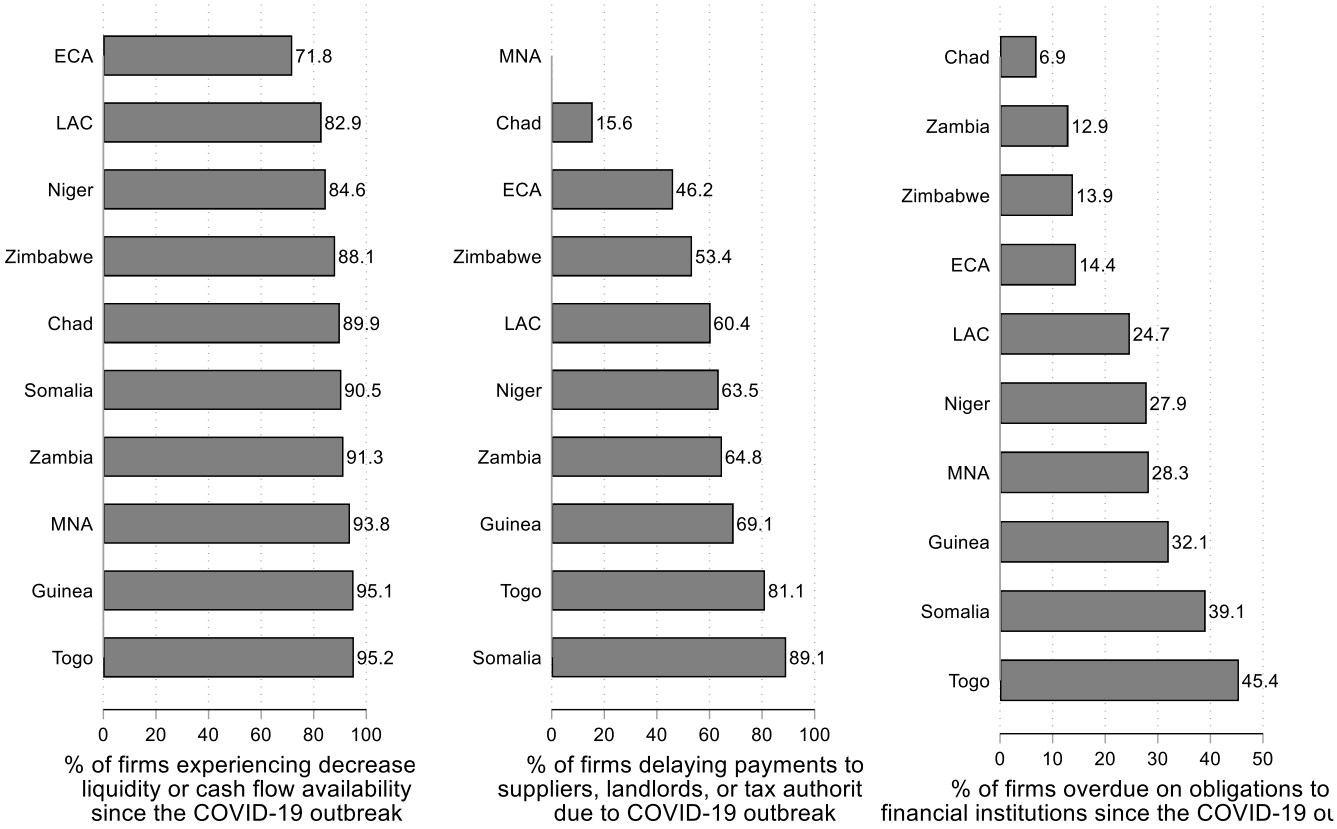
Zambia and Chand being around 50% (right panel of Figure-3). The results also show that there is substantial variation between firms within the same country. Overall, firms in Africa fares worse compared to those in in Europe and Central Asia, both in terms of share of firms experiencing sales decline and the magnitude of the decline.

Figure 4:Firms whose monthly sales dropped



Source: World Bank's Enterprise Surveys COVID-19 Follow-up Surveys.

Figure 5: Percentage of firms experiencing decline in liquidity and cashflow



Source: World Bank's Enterprise Surveys COVID-19 Follow-up Surveys.

III.3. How do firms adjust to counter the impact of the shock?

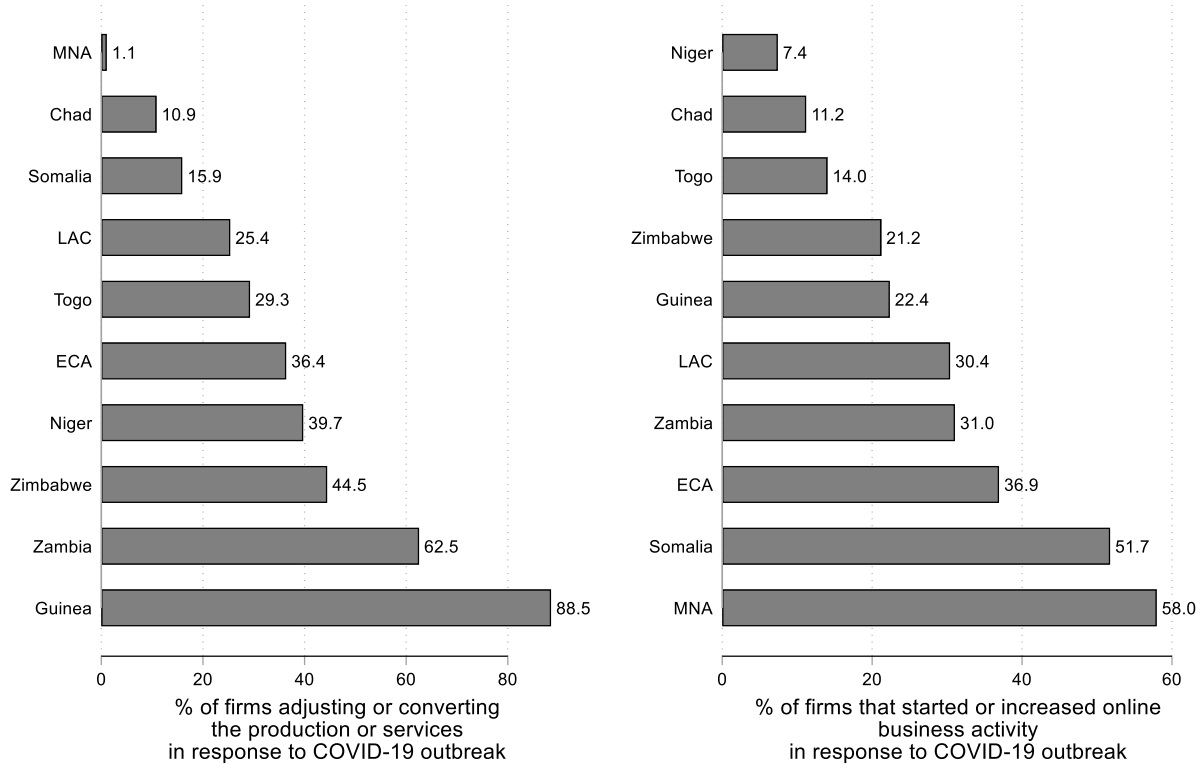
We now turn to explore how firms respond to the pandemic. Firms take several measures to counter the impact of the crises. The often-discussed adjustment in the context of COVID-19 disruption is repurposing, where firms adjust their product or services to meet evolving demand. There are several anecdotal evidences of alcohol manufacturing companies producing hand sanitizers and textile and garments companies producing face masks. Many businesses also adjust mode of operations, for instance, moving more to ward remote working and or delivery and carryout instead of onsite service. However, not all businesses are malleable enough to adjust their production or operations. Some may be forced to suspend operation as demand or input and raw material dry out or because they don't have the resource to undertake the required adjustments. Consequently, there are businesses that will be forced to reduce the hours operated or layoff or furlough workers. The

survey collects detailed information that allows analyzing some of the adjustment mechanisms employed by firms to cope with the shocks.

Repurposing and leveraging technology to cope

Survey respondents were asked several questions to gauge these adjustments. They were asked whether the business adjusted or converted, partially or fully, its production or the services it offers in response to the COVID-19 outbreak, whether the establishment started or increased business activity online in response to the COVID-19 outbreak. 45% or more firms in Guinea, Zimbabwe and Zambia report to have repurposed the products while only about 10% of the firms in Chad did (Figure-5). About a third of the businesses in Zambia report to have started or increased online business activities in response to the pandemic, while just about 7% of the firms in Niger did. Overall, an average firm in Europe and Central Asia is more likely to start or increase using online presence than those in Africa.

Figure 4: Adjustment to economic shock caused by COVID

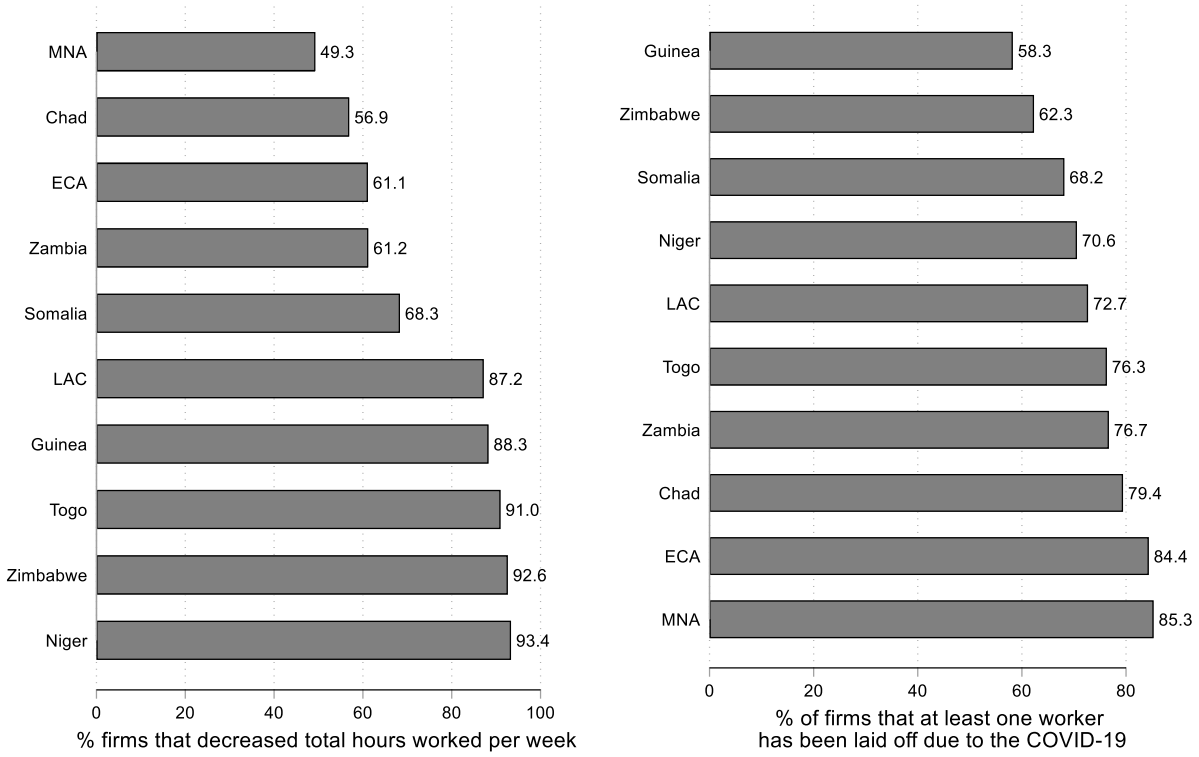


Source: World Bank's Enterprise Surveys COVID-19 Follow-up Surveys.

Adjustment to workforce, including laying off employees

Change to workforce and hours worked is other adjustment mechanisms firms can deploy to cope with the impact of the shock. Somewhere between 57 (for Chad) to 94 (Niger) percent of firms report reducing the hours worked compared to the same time in the previous year. Similarly, in all the four countries, majority of the firms report laying off at least one worker since the COVID-19 outbreak.

Figure 5: Adjustment to hours worked and decline in number of employees



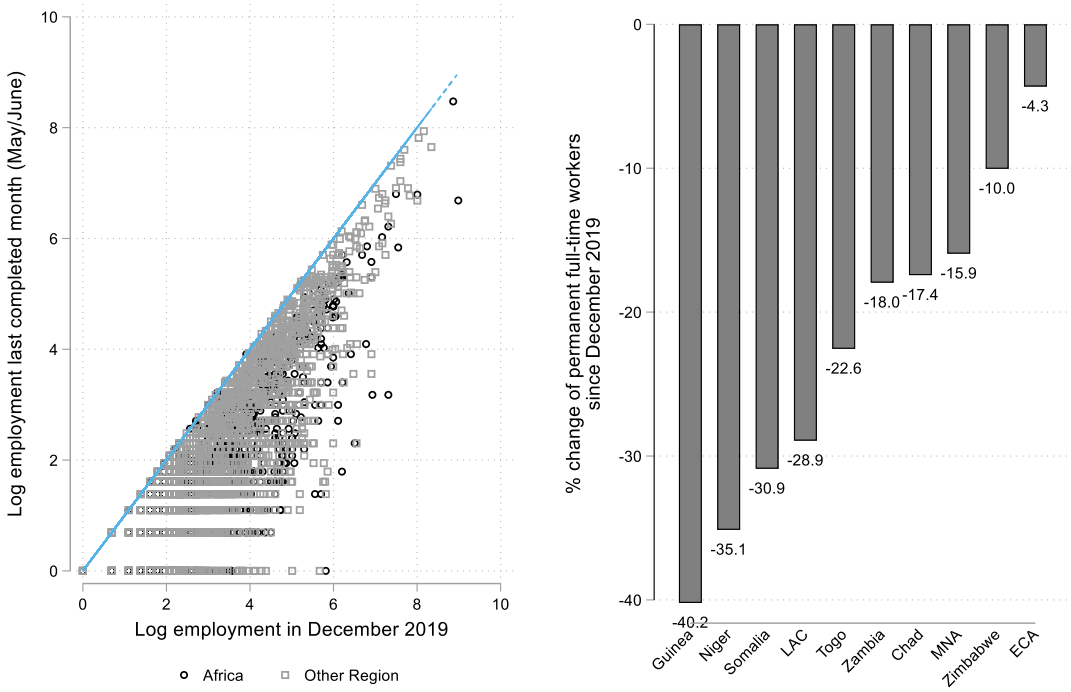
Source: World Bank's Enterprise Surveys COVID-19 Follow-up Surveys.

To provide further measure of the impact on workforce, firms were asked to indicate the number of full-time employees at the end of December 2019 (prior to the pandemic) and the last completed month before the time of the survey (after the pandemic). The left panel of

Figure 6 compares the number of fulltime employees in December 2019 and last competed fiscal year. The figure clearly shows that almost all firms experienced a decline in the number of fulltime workers after the pandemic although the magnitude varies across firms.

The right panel provides the average percentage change in the number of full-time permanent workers relative to the same month in the previous year, thus quantifying the magnitude by which firms adjust their workforce to cope with the shock. An average firm in Guinea saw a decline in the number of full-time permanent employee by about 40 percent compared to the same month in 2019. Zimbabwe reports the smallest decline with about 10%, which is almost three times the average for Europe and Central Asia.

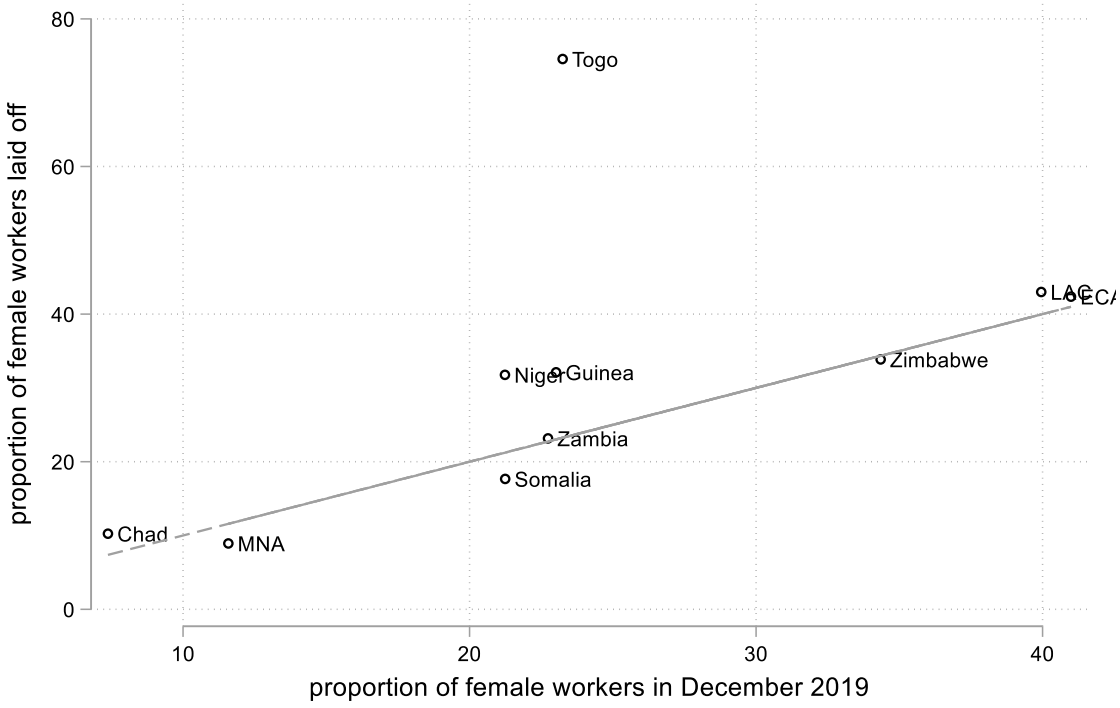
Figure 6: Firms employment response to the pandemic



Source: World Bank's Enterprise Surveys COVID-19 Follow-up Surveys.

Different types of employees feel the brunt of the adjustments differently. Depending on each country's labor regulation, it may be easier and less costly for a firm to lay off temporary employees than those with full-time permanent contract. There is also a growing literature and anecdotal evidence that female employees are often among the first to be laid off. The survey collects information to capture this dimension. Figure-7 plots the proportion of female full-time permanent employees (of the total employees) in December 2019 against the proportion of female of employees laid off by firms. An average firm in Niger, Guinea and particularly Togo appear to disproportionately lay off female employees compared to male.

Figure 7: Gender dimension of workforce adjustment to shock caused by COVID-19



Source: World Bank's Enterprise Surveys COVID-19 Follow-up Surveys.

III.4. Expectations about the Future

Outlook and perception about the future plays a pivotal role in firm's decisions on investments, hiring, among others. Uncertainty about the future will therefore play an important role in the economic recovery process from the pandemic. Firms were asked several questions to elicit about their perception about future prospects. Except in Zimbabwe (and Zambia), almost all interviewed firms in the other countries expect their sales and workforce would return to their normal levels (see figure 8a & 8b). There are some variations in how long it will take for the business to return to their normal level of sales. Firms in Togo expect it will take about 6 months to return to their normal levels of sales, while it takes 2 to 3 months for most of the countries. Firms are more upbeat on levels of employment where most think they will get back to their normal levels sooner than it takes to return to normal levels of sales.

Figure 8a: Expectation to return to normal level sales

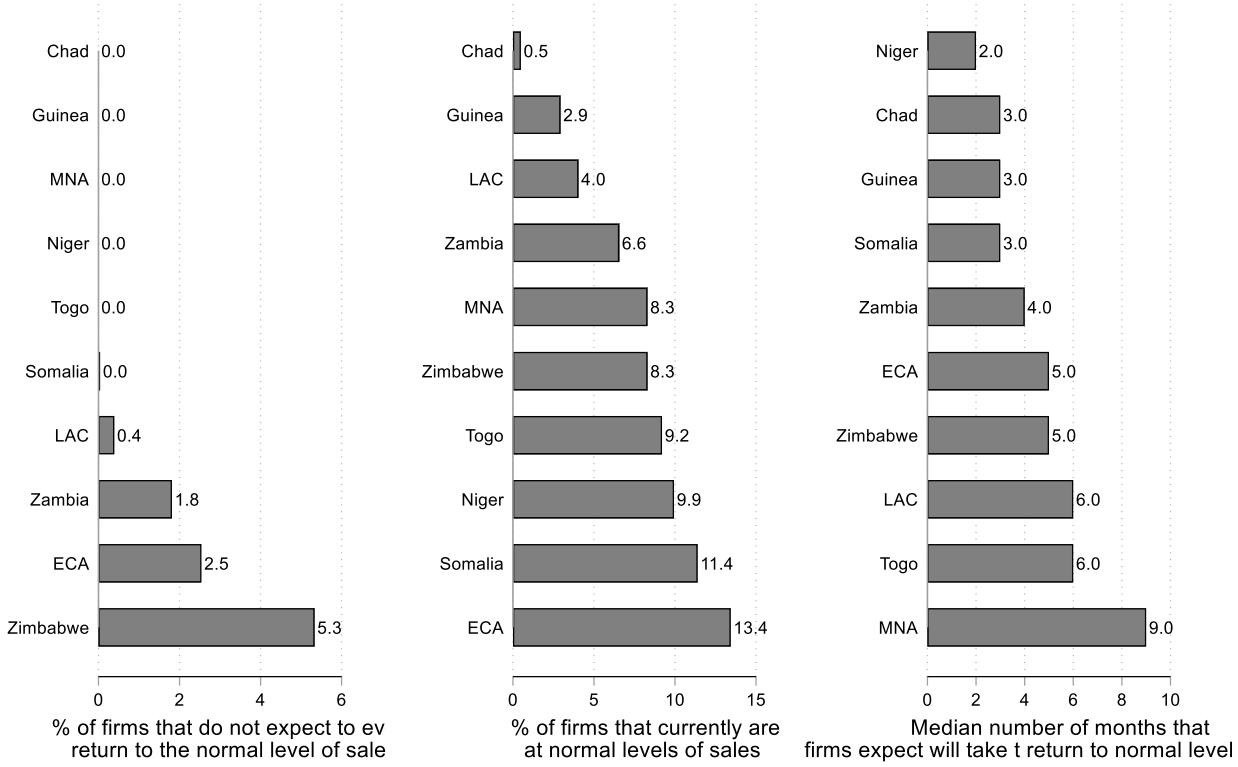
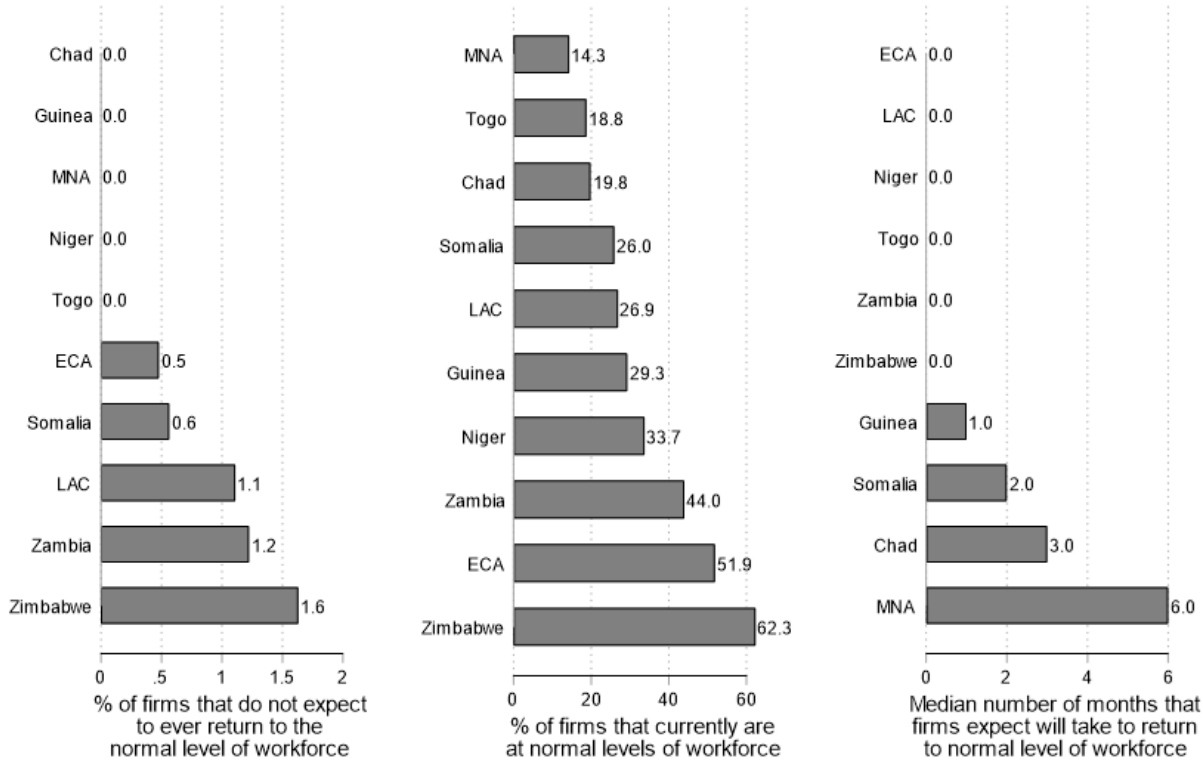


Figure 8b: Expectation to return to normal level employment



III.5. Regression Results

Empirical Specification and Results

The impact of the pandemic could vary by several firm-level characteristics. To assess the differential impact of the pandemic across firms within the same industry in a country, we estimate the following equation:

$$y_{icst} = \beta_0 + \beta\, X_{icst} + \eta_{ct} + \delta_s + \epsilon_{icst}$$

Where y denotes different outcome variables including firm exit, change in sales, employment, liquidity/cashflow shortages, etc; c indexes country, s indexes industry; η_{cst} denotes country-year interaction fixed effects; and X_{icst} is the vector of explanatory variables (defined below). ϵ_{icst} is the error term that captures unexplained variation in y_{icst}. The coefficient of interest, β, measures the differential impact of the pandemic across firms within a given country, industry and year.

Table 2 provides results where dependent variables are measure of a firm's permanent closure, vulnerability to exit, decrease in sales and decrease in liquidity or cash flow. The results show that smaller firms are more negatively affected by the crisis. The estimates in Colum 1 reveals that smaller firms (those with 5 to 19 employees) are more likely to go out of business permanently compared with medium and large firms.[4] Column 2 shows that younger firms are more vulnerable to exit if the pandemic and restrictions continue. Exporters are less likely to hit by a decrease in sales compared to non-exporters (column 3) and a decrease in liquidity and cash flows (column 4).

Table 2: Likelihood of firm closure and reopening

	(1) Permanently closed	(2) Vulnerability	(3) Reduction in sales	(4) Reduction in liquidity or cash flow
Small	0.020***	0.017	0.012	0.019
	(0.006)	(0.020)	(0.020)	(0.019)
Log Age	-0.002	-0.040***	-0.003	-0.011
	(0.003)	(0.011)	(0.011)	(0.010)
Exporter	0.017	0.016	-0.071*	-0.041
	(0.013)	(0.041)	(0.041)	(0.039)
Foreign	-0.002	-0.045*	0.028	0.015
	(0.008)	(0.025)	(0.025)	(0.024)
Female ownership	-0.005	0.013	-0.010	0.027
	(0.008)	(0.024)	(0.024)	(0.023)
Manufacturing	-0.005	0.028	0.008	-0.012
	(0.007)	(0.022)	(0.022)	(0.021)
Constant	0.005	0.372***	0.898***	0.922***
	(0.011)	(0.033)	(0.033)	(0.032)
Observations	1642	1062	1256	1264

Each regression controls for country-year interaction fixed effects. *, ** and *** indicate statistical significance at the 10%, 5% and 1% level.

[4] It is important to note that only small percentage of firms are confirmed to have been permanently closed due to the pandemic.

Table 3 presents the regression results on the responses of firms to mitigate the impact of pandemic on their financial health. Overall, the results how variation across firms in their ability to adjust and the mechanism of adjustment employed. Smaller firms are less likely employ any of the adjustment mechanism compared with their larger counterparts. This is in line with expectation given that adjustment requires resource and experience that smaller firms generally lack compared to large ones.

Table 3: Responses to the crisis

	(1) Adjusted production	(2) Online activity	(3) Decrease total hours worked	(4) Laidoff at least one woker	(5) Decline in employment (%)
Small	-0.072**	-0.105***	-0.065**	0.074***	-3.065
	(0.032)	(0.029)	(0.026)	(0.027)	(2.621)
Log Age	0.013	-0.005	0.024*	0.035**	-0.737
	(0.017)	(0.015)	(0.013)	(0.014)	(1.369)
Exporter	-0.068	-0.123**	0.044	0.026	4.670
	(0.065)	(0.058)	(0.052)	(0.053)	(5.300)
Foreign	-0.016	0.085**	-0.101***	0.060*	0.277
	(0.040)	(0.035)	(0.032)	(0.033)	(3.221)
Female ownership	-0.073*	-0.040	-0.008	0.043	8.610***
	(0.038)	(0.034)	(0.031)	(0.033)	(3.152)
Manufacturing	-0.044	0.027	0.019	0.006	-3.826
	(0.035)	(0.031)	(0.028)	(0.030)	(2.849)
Constant	0.564***	0.323***	0.770***	0.530***	19.365***
	(0.053)	(0.047)	(0.043)	(0.045)	(4.342)
Observations	1267	1266	1259	1625	1215

Note: Each regression controls for country-year interaction fixed effects. *, ** and *** indicate statistical significance at the 10%, 5% and 1% level.

Table 4: Expectation

	(1)	(2)	(3)
	Never recover	Currently normal level of sales	Months to return to normal sales
Small	2.995***	-1.723	-2.230*
	(1.020)	(1.493)	(1.224)
Log Age	0.561	-0.829	0.209
	(0.537)	(0.786)	(0.676)
Exporter	-1.328	1.049	-1.224
	(1.999)	(2.927)	(2.503)
Foreign	0.586	-0.024	-3.010*
	(1.263)	(1.848)	(1.535)
Female ownership	-3.046**	2.716	-1.854
	(1.244)	(1.821)	(1.479)
Manufacturing	-3.158***	-0.619	-1.472
	(1.109)	(1.624)	(1.325)
Constant	0.804	9.875***	8.109***
	(1.706)	(2.497)	(2.048)
Observations	1640	1640	843

Note: Each regression controls for country-year interaction fixed effects. *, ** and *** indicate statistical significance at the 10%, 5% and 1% level.

IV. Summary and Conclusion

The COVID-19 pandemic and some of the public health measures to contain its spread have resulted in major disruptions to the economic system. The Enterprise Analysis Unit of the World Bank Group has fielded rapid business survey in several countries to understand the magnitude and nature of the impact on businesses. These surveys are conducted as follow-ups by re-interviewing firms that were covered in each of the country's most recently completed standard World Bank Group Enterprise Surveys (ES). This paper summarizes result for the first of three waves of data collection in seven African countries. We show temporary closure was prevalent with as high as 95% of the firms report they had to suspend operations since the pandemic. While is primarily due to containment restrictions, it could also be because of lack of demand and services, or lack of inputs/raw material or merchandise of resale. On average, firms were closed for about 7 weeks, as of the time of the survey, effectively indicating lost revenue for almost a month.

Firms have taken several adjustment measures to minimize the impacts of the shock on their key measures of financial health. As a good sigh of firms' ability to adjust, depending on the country, somewhere between 10% to 80% of the businesses report adjusting their product or services. Majority of the businesses have also undertaken workforce related adjustment, including significant reduction in the number of full-time permanent employees compared to the pre-CODID-19 level. Despite all these adjustments, however, the pandemic has had substantial impact on key financial indicators of the businesses. For instance, sales contracted on average from 20% to 60% compared to the level in 2019, and over 80% of firms report experiencing liquidity/cashflow shortages. However, firms are overall optimistic about the future, with almost all of them expecting to rebound in terms of sales and workforce.

V. References

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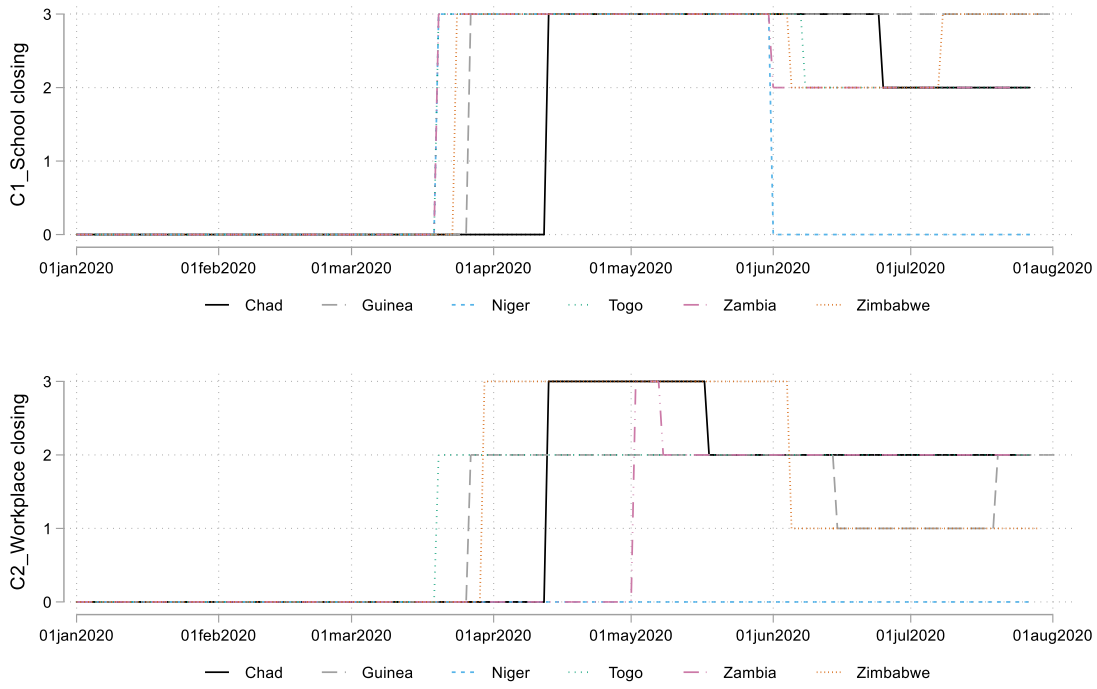
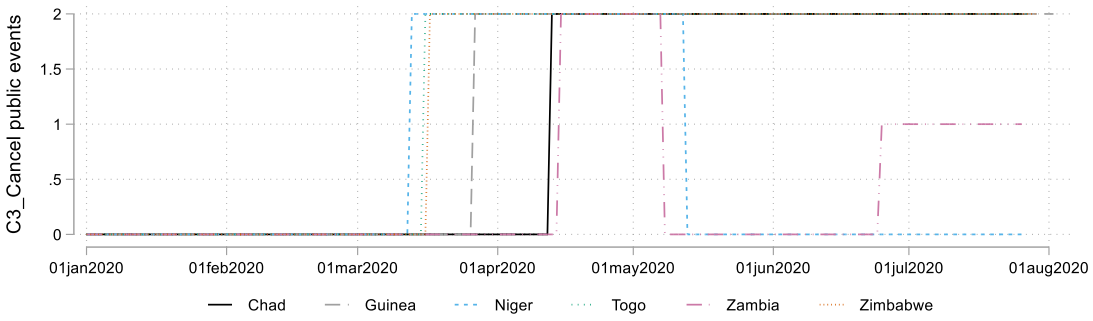
VI. Appendix

Containment and closure policies

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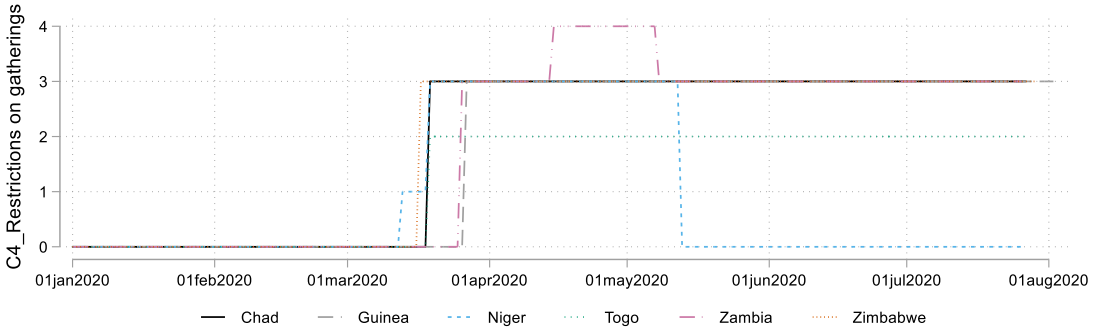
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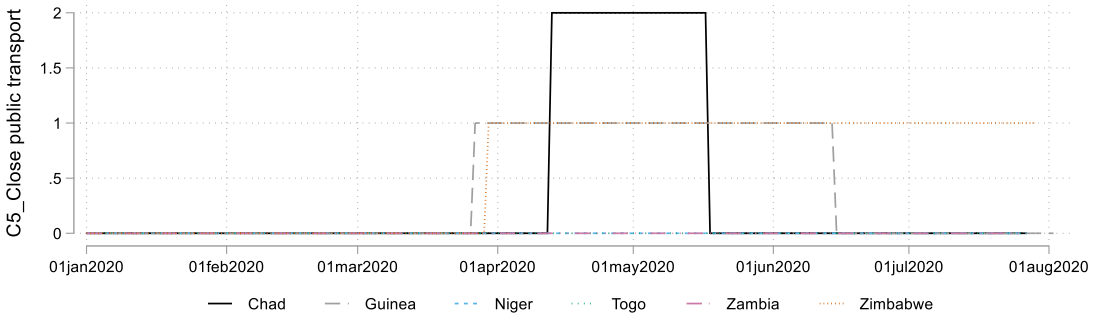
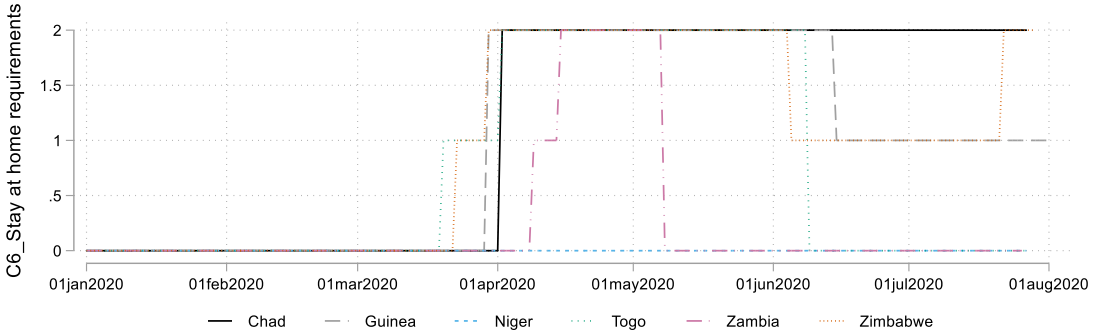
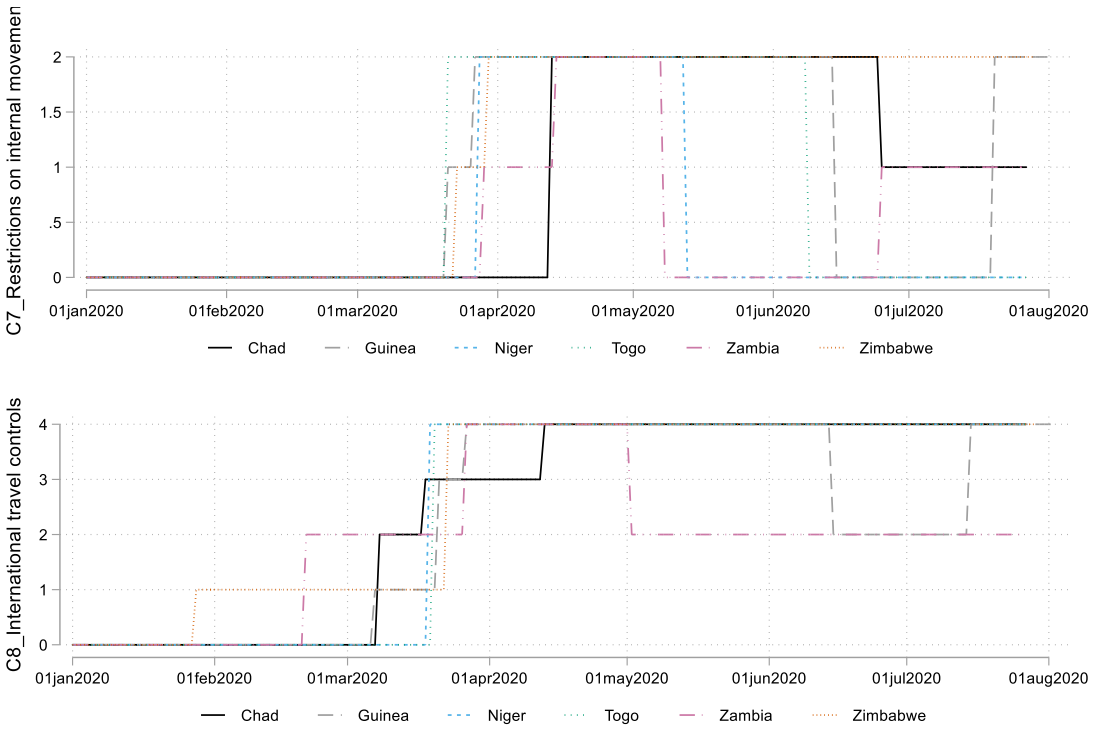
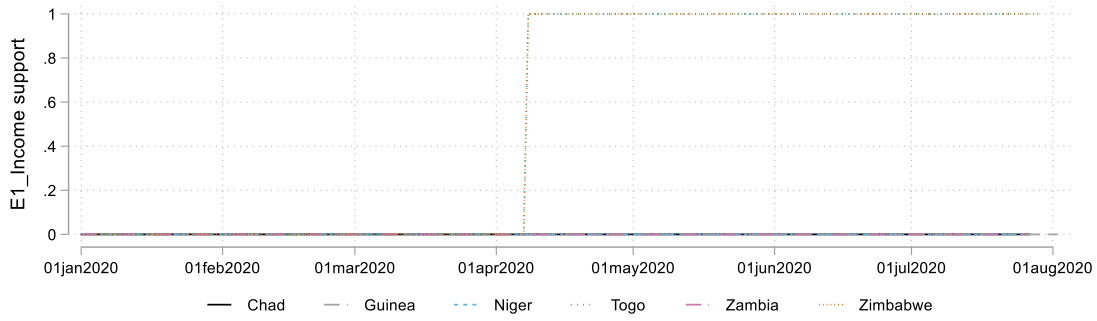
Zambia
Zimbabwe

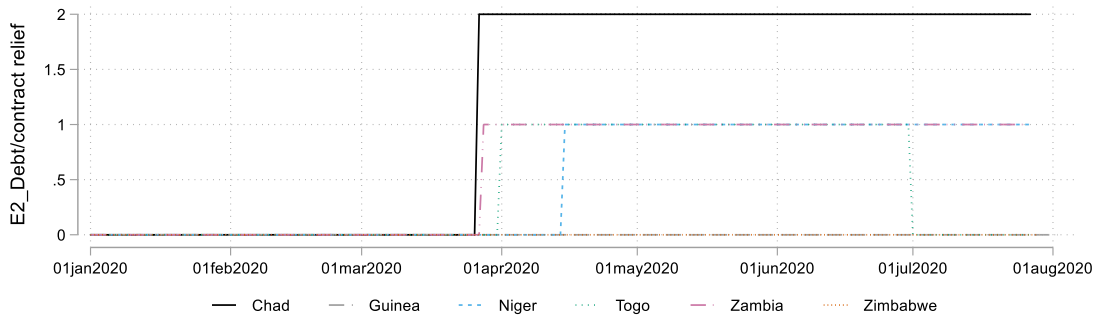

C5_Close public transport
0
.5
1
1.5
2
01jan2020
01feb2020
01mar2020
01apr2020
01may2020
01jun2020
01jul2020
01aug2020
Chad
Guinea
Niger
Togo
Zambia
Zimbabwe

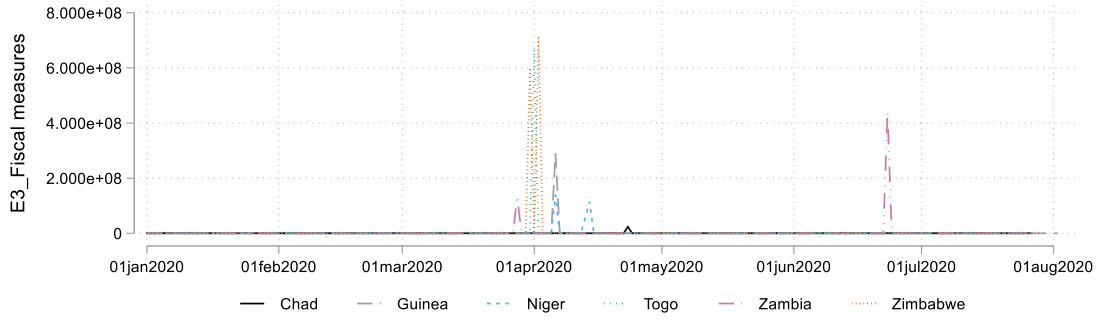

C6_Stay at home requirements
0
.5
1
1.5
2
01jan2020
01feb2020
01mar2020
01apr2020
01may2020
01jun2020
01jul2020
01aug2020
Chad
Guinea
Niger
Togo
Zambia
Zimbabwe

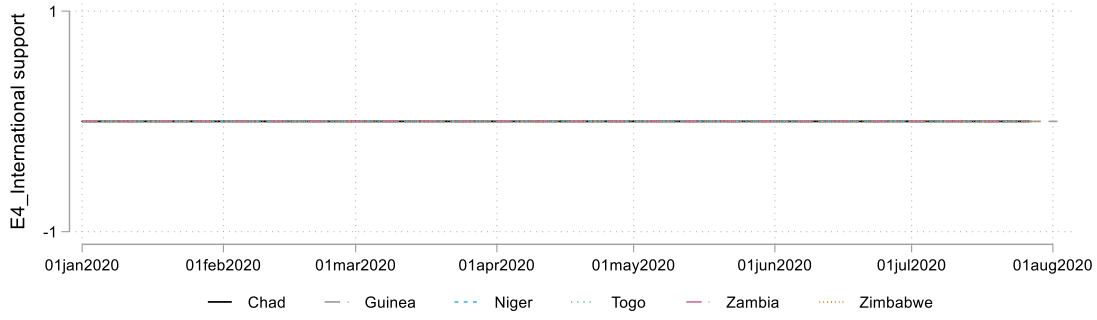


Economic Policies


E1_Income support
1
.8
.6
.4
.2
0
01jan2020
01feb2020
01mar2020
01apr2020
01may2020
01jun2020
01jul2020
01aug2020
Chad
Guinea
Niger
Togo
Zambia
Zimbabwe


E2_Debt/contract relief
2
1.5
1
.5
0
01jan2020
01feb2020
01mar2020
01apr2020
01may2020
01jun2020
01jul2020
01aug2020
Chad
Guinea
Niger
Togo
Zambia
Zimbabwe


E3_Fiscal measures
8.000e+08
6.000e+08
4.000e+08
2.000e+08
0
01jan2020
01feb2020
01mar2020
01apr2020
01may2020
01jun2020
01jul2020
01aug2020
Chad
Guinea
Niger
Togo
Zambia
Zimbabwe


E4_International support
1
-1
01jan2020
01feb2020
01mar2020
01apr2020
01may2020
01jun2020
01jul2020
01aug2020
Chad
Guinea
Niger
Togo
Zambia
Zimbabwe