C-19 Note
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# How the COVID-19 Pandemic Affected Rwandan Businesses: Findings from Phone Surveys

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*We conducted phone surveys with 1,468 firm owners in Rwanda to understand how and through which channels their businesses were impacted by the COVID-19 pandemic and government responses. We find that firms were strongly impacted by the lockdown measures. In March and April 2020, 80% percent of firms report being at least temporarily closed. By June 2020, the majority of firms report having returned to normal operations, but in January 2021, 38% still find operations interrupted. Over this period, the average firm laid off 25% of its workforce and expects a 26% decline in annual earnings relative to 2019. These findings indicate that firm owners continue to encounter challenges in maintaining business operations – in both sales and access to inputs – and could benefit from access to credit or relief in the form of tax deferrals.*

Small businesses play a unique role in the economy, comprising, as in many low-income countries, the vast majority of businesses and contributing more than 60% of employment and GDP.[1] The COVID-19 pandemic has jeopardised not only the livelihoods of these firms but the wider economy, through channels ranging from disruptions to supply chains and negative shocks to demand and the health and earnings of employees. In Rwanda, where many citizens live on less than USD$1 per day, the spread of COVID-19 and how the government responds to it carry the potential to impose significant financial burdens.

In March 2020, the Rwandan government initiated strict lockdown and social distancing measures to contain the spread of COVID-19. These measures generated success in limiting infections yet carried economic costs. For the first time since 1994, Rwanda's economy contracted, and long-run growth is likely to slow as a result.[2] To understand how small businesses were impacted by the pandemic and lockdown measures, we conducted phone surveys with 1,468 businesses between December 11, 2020, and January 12, 2021, collecting retrospective and contemporaneous data on the effects of the pandemic.

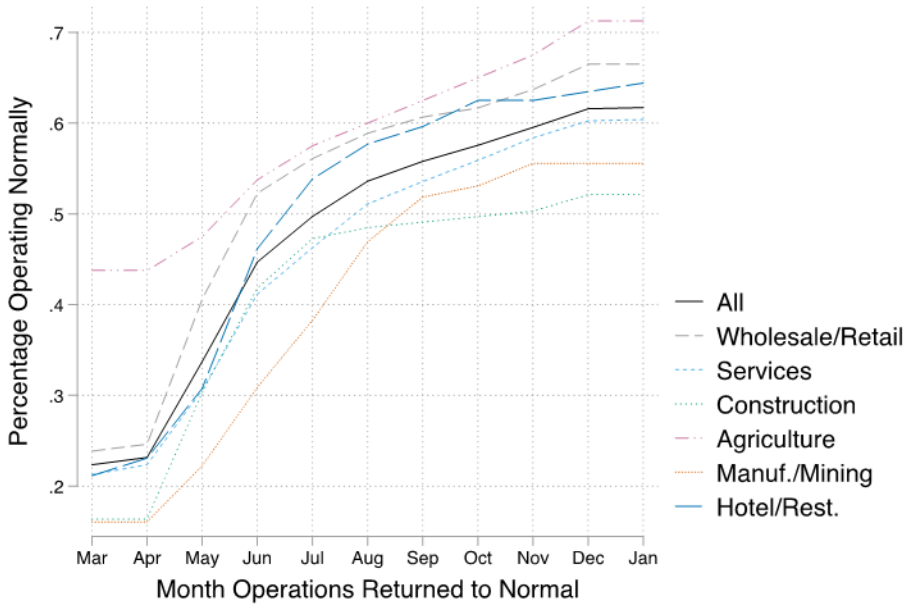
Firms were randomly sampled from taxpayer registration records, which provide phone numbers for business owners. The sample thus excludes firms in the informal sector, which are on average smaller and more likely to comprise the livelihood of more vulnerable individuals. The majority of firms in the sample are located in the capital region of Kigali and 82% operate in the services (44%), wholesale/retail (27%), or construction

[1] World Bank (2011). "Risk-Based Tax Audits: Approaches and Country Experiences".
[2] Gross domestic product is estimated to have declined by 0.2% in 2020, compared to a pre-pandemic projected increase of 8%, and over half a million people are expected to be pushed into poverty (World Bank Group, Rwanda Economic Update 2021).

sectors (11%). We intentionally oversampled firms in the agriculture and hotel and restaurant sectors, relative to the full population, to provide sufficient sample to draw inference among these subgroups. In February 2020, before lockdown, the median firm had three employees, used no suppliers to provide inputs to production, had 25 customers in an average month, and earned 8 million RWF (USD$8,050) in annual revenues in 2019.

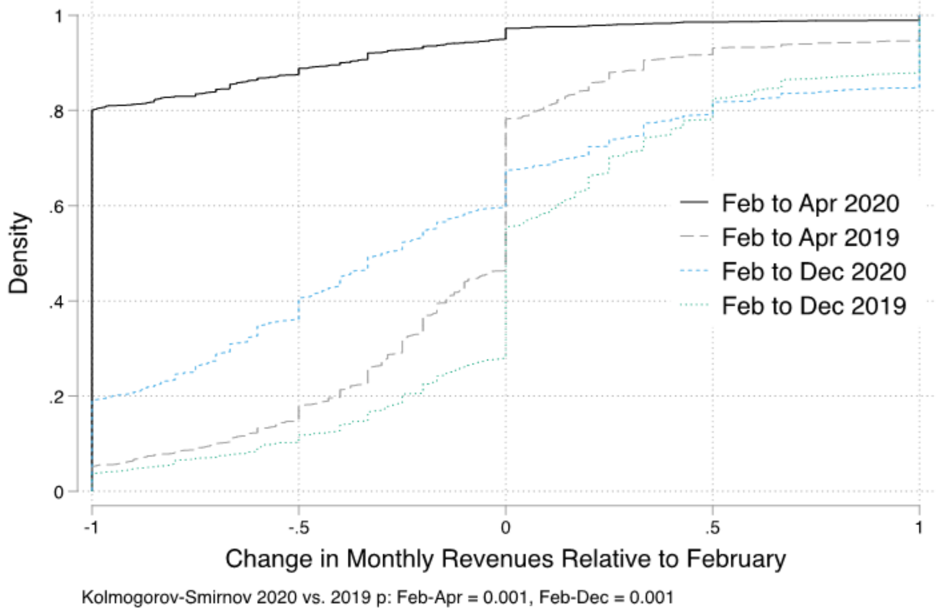
We find that firms were strongly impacted by the lockdown measures implemented to contain the spread of COVID-19 in Rwanda. At the beginning of this period, in March and April 2020, 80% percent of firms report being at least temporarily closed (see Figure 1). Though by June the majority of firms report having returned to normal operations, by January 2021, 38% still report interruptions in operations. Firms in the agricultural sector were least likely to have operations affected, while manufacturing, mining, and construction firms were most affected at the beginning of the pandemic and remain so into the first month of 2021. By December, 85% of firms report that their business remains open, with only 10% reporting that the business remains closed due to challenges with COVID-19, and 2.5% reporting the business as being permanently closed due to challenges with COVID-19.

Figure 1: When Business Operations Returned to Normal




Main body Despite most remaining in operation, firms on average reported large declines in monthly revenues over 2020. From February to April 2020, approximately 95% reported negative changes with 80% reporting no earnings at all in April. By December 2020, 60% of firms are reporting negative changes in monthly revenues (relative to February), with almost 20% reporting no earnings. We benchmark these changes to the same measures in 2019 and find a large, downward shift in monthly revenues over the course of 2020 relative to the previous year (Figure 2 shows the cumulative distribution functions of revenue change measures for each period).

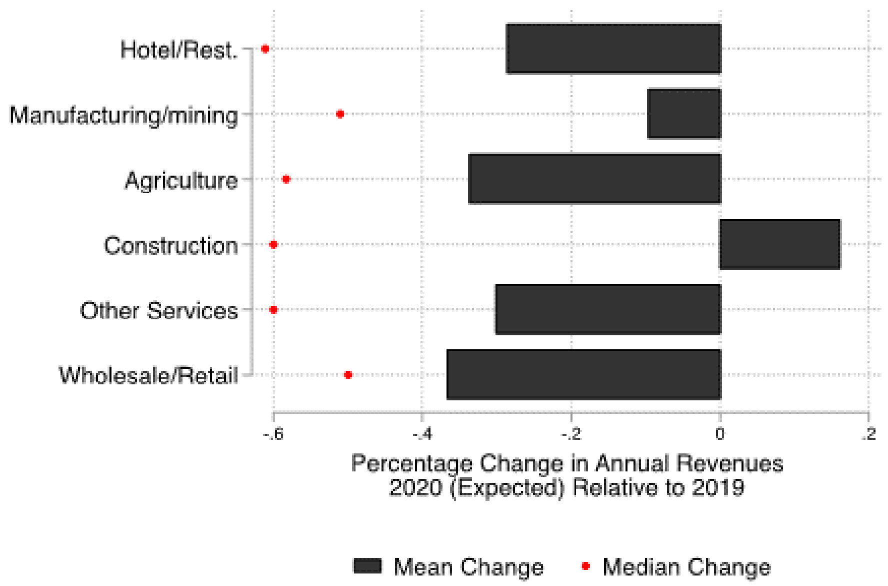
Figure 2: Change in Monthly Revenues Relative to February



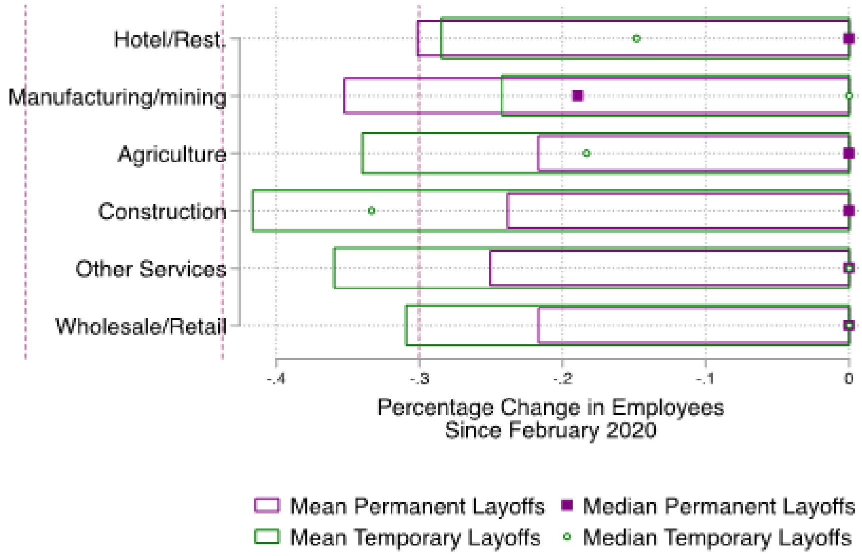

By December 2020, the median reported change in monthly revenues relative to February 2020 is a 30% decline, and the median firm expects a 57% decline (26% decline using the mean) in annual earnings relative to 2019. In each industry sector, the median firm expects declines in year-on-year revenues, yet smaller average expected changes in the manufacturing/mining sector (-8%) and average positive expected changes in construction (+15%) suggest greater heterogeneity across firms within these sectors (see Figure 3A).

**Figure 3: Changes in Annual Revenues and Employment**

*A. Annual Revenue Changes (2020 vs 2019) by Sector*



*B. Employment Changes (since Feb. 2020) by Sector*



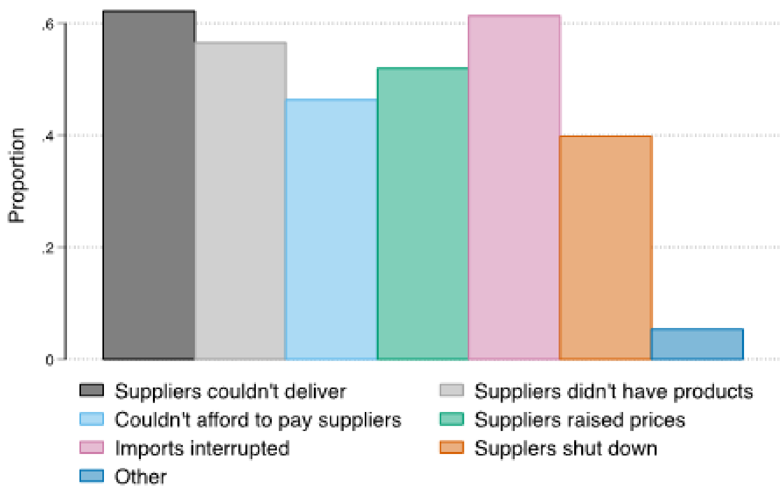

Regarding employment, we find that the average firm made approximately 3 permanent layoffs, close to 5 temporary layoffs, reduced hours or wages for 2.5 employees, and had 2.5 employees unable to work because of lockdown, health, or family-related reasons. The averages hide substantial variation, as the median firm experienced no changes in employment, yet the maximum for permanent and temporary layoffs reaches 200 employees. Average permanent and temporary layoffs amount to 25% and 34% of workforces respectively. The median firms in the hotel and restaurant, construction, agriculture, other services, and wholesale/retail sectors experienced no permanent layoffs, but average reductions ranged between 20 and 36% (see Figure 3B). Temporary layoffs, on average, ranged between 23% (manufacturing/mining) to 42% (construction), surpassing permanent layoffs in the manufacturing/mining and hotel and restaurant sectors.

As to the causes of these impacts, 90% of business owners name interruptions in operations, with 80% experiencing lower sales. Over half report difficulty in getting inputs from suppliers, while 40% and 60% respectively report being unable to pay employee wages and employees having difficulties coming to work (for reasons arising from lockdown measures, health challenges, or family constraints). Less than 5% report encountering no challenges at all in 2020. By sector, the rates of encountering particular challenges are almost surprisingly similar, with the exception that agriculture firms experienced fewer interruptions in operations.

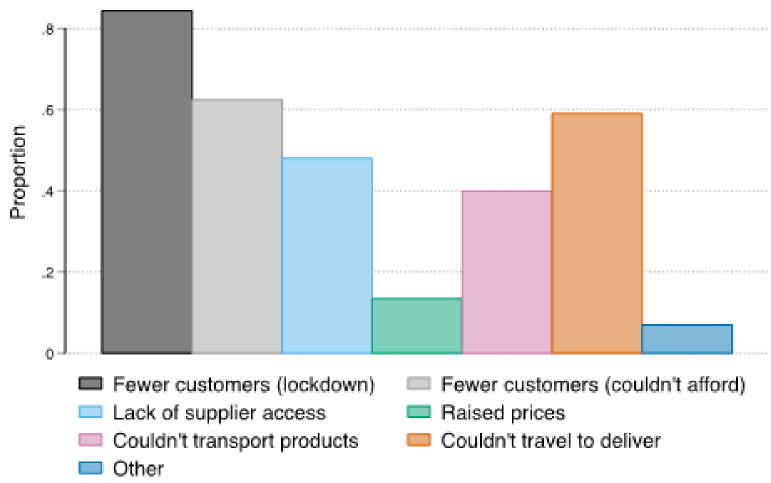
Since February 2020, over 60% of firms who reported difficulties with obtaining supplies listed the inability of suppliers to deliver products and the interruption of imports as a source of this challenge (see Figure 4A). 54% said suppliers did not have products available, while 44% could not afford to pay suppliers. 51% said suppliers raised prices, and 40% said suppliers shut down. By industry sector, rates of encountering specific challenges are again relatively similar, though hotel/restaurant, manufacturing/mining, and agriculture firms report lower rates of having imports interrupted as an impediment to production, and hotel/restaurant firms reported less often that suppliers not having products was an issue.

**Figure 4: Challenges in Operating Business**

*A. Challenges to Obtaining Inputs*




*B. Challenges to Generating Revenues*




Of firms reporting lower sales as a challenge encountered since February 2020, close to 85% said fewer customers, due to pandemic lockdown measures, was the source of this issue (see Figure 4B). 60% said customers being unable to afford products/services was a problem. Slightly under 50% said lack of access to suppliers generated lower sales, while only 12% reported having to raise prices. 40% could not transport products, and around 60% could not travel to deliver products or services. By industry sector, we observe higher rates of being unable to transport products for manufacturing/mining and agriculture firms, while hotel/restaurant firms reported the lowest rates of encountering this problem. However, hotel/restaurant firms did report the highest rate (95%) of having fewer customers due to pandemic lockdown measures, consistent with official social-distancing regulations. Construction, agriculture, and manufacturing/mining were slightly more likely to have raised prices (around 20% of such firms reported doing so).

More than half of firms at the end of 2020 report still encountering challenges in obtaining inputs from suppliers and 30% report difficulty in paying wages to employees. Almost half of firms report taking on loans or credit during 2020 to support business operations, and 76% report using personal savings to finance business or living expenses. However, only 8% report accessing the government's relief programme. These persistent challenges on the demand side, as reflected in sales, and on the input side, as evidenced by reports of challenges accessing inputs, suggest that while business operations have returned to normal (in that most businesses are open full-time), firm owners continue to encounter challenges in producing and selling products and services.

In examining policies implemented by the government in response to the pandemic, we find among surveyed firms a high reported need for assistance in the form of credit. The majority of firms report taking on loans or credit during 2020 to support business operations, however, only 8% accessed the government's relief programme (INKOMOKO) set up to provide assistance to firms impacted by the pandemic. Low take-up of relief appears to derive from the restrictions on access – which required demonstrating proof of affectedness – coupled with firm owners' beliefs they would not qualify. In listing policies that would be most helpful to sustaining business operations, 80% of firms list credit as being the most useful, while the largest share of firms (22%) think a tax cut or deferral would be the most helpful to aid them in recovery.

These findings highlight potential opportunities to meet the ongoing needs of firms to sustain operations, through access to credit or temporary policies like tax deferrals. While new research suggests that more aggressive use of non-pharmaceutical interventions to limit disease spread, like lockdowns, can mitigate the long-run economic costs of pandemics,[3] more expansive policies that compensate for the lack of existing social safety nets in low-income countries may be needed to support small firms. In such settings, there exists a pressing need to understand the long-run economic implications of the pandemic and governments' responses to it. Without robust measures, economic impacts in poor countries may be lasting and severe (Barro et al. 2020).[4]

*This note is based on research conducted as a part of PEDL ERG 7791.*

[3] Correia, Sergio, Stephan Luck, and Emil Verner (2020). "Pandemics Depress the Economy, Public Health Interventions Do Not: Evidence from the 1918 Flu", Working Paper.

[4] Barro, Robert, José F. Ursúa, and Joanna Weng (2020). "The Coronavirus and the Great Influenza Pandemic: Lessons from the 'Spanish Flu' for the Coronavirus's Potential Effects on Mortality and Economic Activity", NBER Working Paper 26866.