

Assessing the Impacts of Economic Recovery Measures on Rwanda's Economy During and After the COVID-19 Pandemic

A general equilibrium analysis

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Introduction

For many countries throughout the world, the COVID-19 pandemic remains a critical humanitarian and economic crisis in 2021. Since the first known case in December 2019, the virus has infected more than 225 million people and caused 4.6 million death as of September 2021 (WHO 2021). To contain the pace of the virus's spread and limit the medium- and longer-term economic impact of the pandemic, countries imposed multiple policy measures both during the early months of the crisis and in later periods. While these restrictive measures have helped slow the spread of the virus and lower the risk of infection and death, they have also been accompanied by adverse economic effects. Globally, GDP growth was reported at -6.2 percent in 2020, a far cry for pre-pandemic projections of positive growth at 2.7 percent (World Bank 2021a; 2019). Global trade, remittance flows, and foreign direct investments were dramatically reduced in 2020 by 9-13 percent, 2 percent, and 30 percent, respectively (EU 2020; Vidya and Pradheesh 2020; World Bank 2021b).

Rwanda is no exception. Since the first case of COVID-19 was confirmed on March 14, 2020, over 91,000 cases and 1,100 deaths had been reported in Rwanda by early September 2021 (RBC 2021; WHO 2021). To lower the health impacts from the spread of the virus, the government of Rwanda started to introduce certain restrictive measures even before the first local case was identified (Beaubien 2020; Busari 2020). Since local community transmission started, much more stringent restrictive measures were imposed. Three rounds of national lockdown policy measures were implemented that limited many economic activities and mobility of people. The most stringent restrictive measures were introduced between March 21 and May 4 of 2020 as the first lockdown, followed by the second lockdown of 15 days in January 2021 and a most recent one in July 2021.

As expected, the restrictive measures responding to the COVID-19 have adverse effects on the economy through various impact channels. The lockdown caused the closure of non-essential businesses, causing operations below their normal capacity for many essential businesses. The restrictions on the movement of people reduced the demand for various goods and services particularly in transport, hotels, restaurants and many other service sectors. With COVID-19 and the effect of COVID related restrictive measures, consumer demand pattern is altered towards necessities, lowering demand for many other goods and services. Evidence from recent surveys shows that a majority of Rwanda's population experiences adverse economic effects from COVID-19 and related response measures (Debenedetti et al. 2020; Hutchinson et al. 2020). Ex-ante economywide modeling studies also suggest a

considerable slump in Rwanda's economic growth in 2020 (e.g., Aragie et al., 2020), which was in line with the 3.4 percent decline in GDP growth reported in the recent national accounts (MENICOFIN 2021), a negative economic growth for the first time in more than two decades since mid-1990. Considering the country's robust economic performance in the past two decades and a similar optimistic projection for 2020 growth pre-pandemic, such negative economic growth could have unexpected economic outcomes across broad economic sectors and among most Rwandan households. An alarming increase in poverty was predicted. Though some income and poverty effects could subside with economic reopening and recovery, among vulnerable households such adverse impact can be persist without the help of the government (World Bank 2021c; Diao et al., 2021; UN-Rwanda, 2020).

To help the hardest hit economic sectors, firms and households and to revitalize the economy, the government of Rwanda, together with various development partners, has already started a series of economic relief and recovery measures. These measures target at (i) strengthening the country's health system by improving the capacity of health workers, (ii) increasing social protection spending for the vulnerable households, (iii) increasing major commodity availability and access through trade facilitation, (iv) influencing price stabilization of strategic food and intermediate inputs through strategic food reserves, and (v) supporting the private sector through Economic Recovery Fund to relax business financial constraints for both large firms and small and medium scale enterprises (SMEs). The implementation of these policies and programs will be expected to mitigate the negative impacts of COVID-19, speeding up the economic recovery and revitalization.

The economic relief and recovery measures are detailed in the Economic Recovery Plan (ERP) introduced in mid-2020. There are two major funding mechanisms under the ERP: (i) Social Protection and Agriculture Support and (ii) the Economy Recovery Fund (ERF). A budget of 235 RWF billion in total (equivalent to 3.0 percent of Rwanda's 2019 GDP) is planned for the year 2021 through these two major funding sources, of which about 133 RWF billion is to be allocated to Social Protection and Agriculture Support, and the remaining is for the ERF as loans to businesses. The government equally puts in place a set of measures to increase the capacity of the health and education sectors. A budget of 170 RWF billion (2.0 percent of Rwanda GDP) was allocated to these two strategic sectors in 2021 dedicated to capacity building and infrastructure development. It is expected that similar support will continue in 2022. All these measures pose a huge financial burden to the government, given low resource mobilization capacity from a contracting economy. Thus, their financial sources are planned through foreign loans and grants.

This study tries to assess the economic relief and recovery measures on Rwanda's economy and citizen's welfare. The analysis applies an economywide dynamic CGE model as a tool. Several impact channels are considered in the design of the model and the analysis, including sector productivity, capital capability, export demand, international remittance inflows, and more importantly, inter-sector linkages. To assess the impacts of COVID-19 and measures of economic recovery plans, the study starts with a situation in the absence of both COVID-19 and the relief and recovery measures when the economy could have continued its historical economic growth trajectory. It then evaluates the adverse impact of the COVID-19 pandemic in comparison with the no-COVID situation following the pre-pandemic trend. Finally, the paper introduces the recovery measures and analyzes their effectiveness in reducing the negative impacts of COVID-19 on economic growth, employment and household incomes. In doing so, it helps to understand the short- to medium-term impacts of the pandemic and the government's relief and recovery measures.

The paper specifically assesses the short- and medium-term effects of the economic relief and recovery measures over a four-year period from 2020 to 2023. These measures were first introduced in mid-2020, with the intention of providing both demand-side relief and supply-side production support to households and enterprises. These measures were specifically targeted at (1) strengthening the country's health system by improving the capacity of health workers, (2) increasing social protection spending for vulnerable households, (3) increasing the availability of, and access to major commodities through trade facilitation, (4) stabilizing prices and enhancing social protection through the distribution of food staples from the National Strategic Grain Reserve, and (5) supporting the private sector through a recovery fund in order to relax business financial constraints for both large firms and small and medium-size enterprises (SMEs). The implementation of these policies and programs is expected to mitigate the negative impacts of COVID-19, speeding up economic recovery and revitalization.

These interventions were—and continue to be—implemented through two major funding mechanisms under the Economic Recovery Plan (ERP): the social protection and agriculture support (SPAS) fund, and the Economic Recovery Fund (ERF) which focuses on production support. It is expected that in 2021 there will be a total disbursement of RWF 235 billion (US\$ 236 million), equivalent to 3.0 percent of Rwanda's 2019 GDP; of this, about RWF 133 billion (US\$ 134 million) will be allocated to SPAS and the remaining RWF 102 billion (US\$ 103 million) will go to the ERF for loans to businesses (Table 1).¹

The government also introduced measures to increase the capacity of the health and education sectors. A budget of RWA 170 billion (US\$ 171 million, or 2.0 percent of Rwanda's GDP) was allocated to these two sectors in 2021 for capacity building and infrastructure development. It is expected that similar support will continue in 2022. While these interventions are critically important to Rwanda's recovery from the COVID-19 pandemic, they are also a significant financial burden on the government, especially given its reduced resource mobilization capacity in a contracting economy. It will thus be necessary for Rwanda's recovery measures to be largely financed through foreign lending and grants.

Table 1: Government's recovery spending allocation in the model under the relief scenario

Spending allocation	2020	2021	2022	2023	2020/2023 Total
Percentage of 2019 GDP	0.3%	1.3%	1.1%	1.0%	3.7%
Total spending (RWF billion)	29.4	127.6	108.0	98.1	363.1
Cash transfers to poor and low-income households	25.0	51.0	51.1	51.0	178.1
Production support to affected sectors	4.4	76.6	56.9	47.1	185.0

Source: Authors' calculation based on the information provided by MINECOFIN. **Note:** RWF = Rwandan franc.

¹ The exchange rate in August 2020, at the time of this analysis, was approximately RWF 994.16/US\$.

Main findings

Government recovery measures substantially mitigated declines in economic growth, employment, and household incomes in 2020.

- a. Although Rwanda's GDP contracted by 3.4 percent in 2020, according to figures released by the National Institute of Statistics of Rwanda (NISR) in March 2021, our estimates show that GDP would have contracted by as much as 4.2 percent in the absence of the economic relief and recovery measures introduced by the Rwandan government in mid-2020. In other words, in 2020 the recovery measures limited the recessionary effects of the COVID-19 shock by about 0.8 percentage points.
- b. The recovery measures also mitigated the severe impact of COVID-19 on unemployment. Although many jobs were lost during 2020, government measures helped recover about 115,000.
- c. Through transfers targeted at vulnerable household groups—primarily in the form of cash transfers via the Vision 2020 Umurenge Programme (VUP) and other social protection programs—the recovery measures limited the income losses experienced by poor and low-income households. In 2020, incomes for the poorest household-expenditure quintile were approximately 4.1 percent higher in rural areas and 2.0 percent higher in urban areas when compared to a scenario that did not include relief and recovery measures.

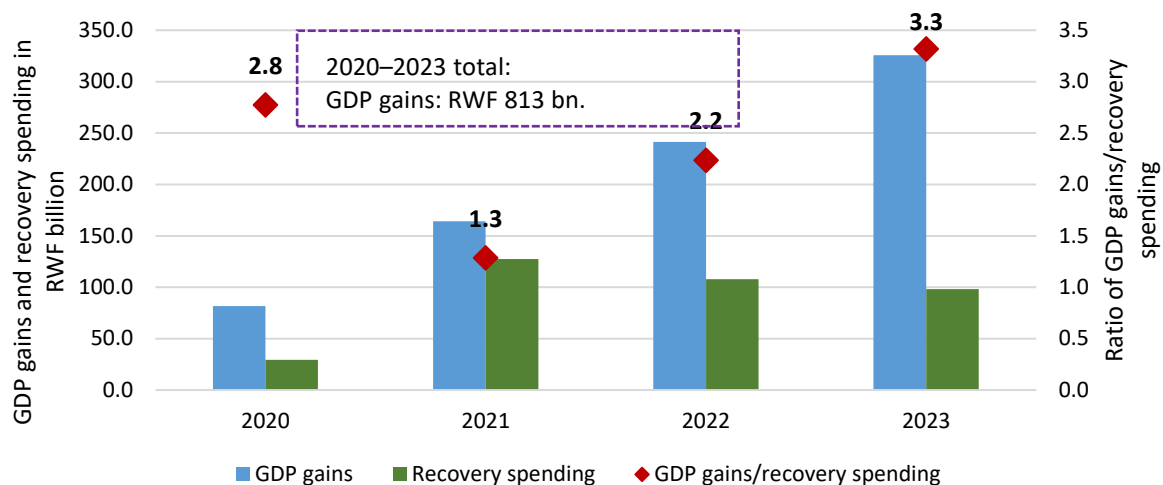
The recovery measures are expected to help economic growth, job creation, and increases in household incomes in 2021 (Figure 1).

- a. Against a GDP growth rate in 2021 of 5.1 percent, as projected by the Ministry of Finance and Economic Planning (MINECOFIN) and the International Monetary Fund (IMF) in mid-2021, our estimates show that the discontinuation of recovery measures would limit GDP growth rate to as low as 4.3 percent. In other words, the recovery measures could boost the GDP growth rate by about 0.8 percentage points in 2021.²
- b. With Rwanda's economy reopening and gradually recovering, many unemployed workers are expected to return to their previous jobs; however, the 2021 employment growth rate is expected to be lower than the pre-pandemic rate given that COVID-19 continues to affect the Rwandan economy. The recovery measures in 2021 may boost the country's employment growth to a rate that is slightly higher than a no-COVID situation, albeit from a much lower 2020 baseline. About 140,000 jobs are expected to be added to the labor market in 2021, though the level of employment is still likely to be more than half a million less than the no-COVID situation. In the rural nonfarm sector, it is expected that more unskilled than skilled jobs will be created, while in urban areas it is likely that there will be more new skilled jobs.

² Note that in November 2021, following completion of the analysis set forth in this paper, the projections for GDP growth were revised upwards from the initial 5.1 percent to 10.2 percent to reflect Rwanda's strong economic performance in the first half of 2021.

- c. Total household incomes are expected to recover significantly in 2021 in constant prices, even without recovery measures; this is partially because of the severe declines in total household incomes in 2020. The recovery measures are expected to raise total household real incomes by 4.4 percentage points in 2021 when compared to a scenario that does not include relief and recovery measures. Poor and low-income households disproportionately benefit from the transfers provided under the recovery measures, particularly in rural areas. The poorest rural-household income quintile is expected to earn incomes that are 9.3 percent higher than incomes earned in the absence of relief and recovery measures in 2021.
- d. Production support measures have a broader impact across all household groups, particularly urban households and households in the middle and upper expenditure quintiles. While these measures may create more unskilled jobs, particularly in rural areas, they tend to favor skilled jobs that earn higher wages and are concentrated in urban areas and in the nonagricultural sectors. The measures also tend to favor those households that own land and other assets; they thus necessarily benefit urban households in the middle and upper quintiles more than they do rural households in lower quintiles. This result draws attention to the importance of social protection as a component of economic relief and recovery packages; it is critical if relief measures are to help poor and low-income households become less impoverished by the shocks from COVID-19.
- e. The economic recovery measures being implemented in 2021 are expected to continue supporting targeted beneficiary households and enterprises into 2022. As such, our analysis considers the recovery measures that will be continued through 2022 and 2023, albeit at a gradually reduced scale; it assesses their continued impact on economic growth, employment, and household income. In 2022 and 2023, GDP is expected to increase by RWF 240 billion (US\$ 241 million) and RWF 330 billion (US\$ 332 million) respectively, with approximately 160,000 and 190,000 additional jobs being created in these two years as a result of the recovery measures.
- f. Although the growth rates of both GDP and employment are expected to return to close to their pre-pandemic rates, neither are likely to fully reach the levels that would have been expected in a no-COVID scenario. While in 2021 GDP is expected to quickly return to its 2019 level, in the decade prior to COVID-19 Rwanda had been experiencing a robust high-growth trajectory; the accumulated GDP is thus expected to be about RWF 1.7 trillion (US\$ 1.7 billion) lower than it would have been had the country continued along its high-growth trajectory to 2023. While employment numbers are likely to exceed 2019 levels before 2022, job creation is expected to exert continuous pressure on job recovery as more youth enter the labor market each year.

Figure 1: Benefit and cost of economic recovery measures



Source: GDP gains are from computable general equilibrium (CGE) model simulation results for Rwanda, and recovery spending is calculated based on information from MINECOFIN and as shown in Table 2.

Note: GDP gains are measured as the difference in GDP between the relief and COVID scenarios, in constant prices; RWF = Rwandan franc

Foreign exchange rate appreciation is a possible unintended outcome of Rwanda’s economic recovery measures. Because recovery measures are expected to be funded by foreign borrowing and grants, this may result in large-scale foreign currency inflows from 2021 onward. The macroeconomic pressures of foreign borrowing include a rise in the debt-to-GDP ratio and higher interest payment burdens in the future.

The economywide model used in this analysis cannot assess such macroeconomic issues because it is a *real* economy model that does not capture monetary policy, financial market movements, or banking system behavior; however, it is still able to shed light on the effects of an expected exchange rate appreciation; specifically, the model captures the “Dutch-disease” impacts (the unintended negative economic spin-offs) that may follow from recovery measures that are largely funded by inflows of foreign funds.

Appreciation of the Rwandan franc is expected to negatively affect the tradable sectors, including import-competing manufacturing and export-oriented agricultural and nonagricultural activities. Sectors that are highly dependent on exports (such as coffee and tea) are expected to be most severely hurt; model results indicate that growth in the coffee and tea sectors will be negative or modestly positive as a result of exchange rate appreciation. Most service sector outputs are, of course, largely nontradable; these are likely to benefit from exchange rate appreciation as it improves the terms of trade for activities oriented to the domestic market. Because of this, Rwanda’s manufacturing sector—which had just started to grow more rapidly than the service sector in 2018 and 2019, prior to the pandemic—is unlikely to continue on the same high-growth trajectory post COVID-19. In the post-pandemic period—at least in the short to medium term—an economic transformation that is led by the service sector and does not include industrialization seems to be unavoidable.

Ultimately, it is important to recognize that the economic benefits of the recovery measures are much

greater than their cost. An ex ante cost–benefit assessment indicates that the economic benefit from the recovery measures—as measured in GDP gains—is much greater than the public spending on these measures.

With spending on recovery measures gradually declining after 2021, GDP gains will continuously increase, with the benefit-to-cost ratio rising from 1.3 in 2021 to 3.3 in 2023. The overall benefit-to-cost ratio is 2.2 for the four years covered in our model (2020–2023).

This increasing benefit-to-cost ratio of Rwanda’s economic recovery measures may indicate the strong medium-term effects of current spending that result mainly from supply-side interventions which create growth. Benefits from such production support may continue beyond 2023. As such, the government’s decision to plan for sizable economic recovery measures is well justified by our results, keeping in mind that ex ante assessments such as ours must be continually reviewed, updated, and compared against analyses of actual economic data as it accrues.

Policy implications

1. Recovery measures provide both demand-side relief and supply-side production support. This reflects the government’s recognition that development planning requires careful attention both to balancing the country’s overall goals for economic growth and protecting vulnerable households from absolute and relative income loss during a shock. Trade-offs in economic planning and budget allocation are often unavoidable in such situations, but understanding the magnitude of the trade-offs—who wins and who loses under different intervention strategies—is the first and most important step toward maximizing the social and economic returns to government policy and to the resulting budget allocations.
2. Many policy interventions can have unintended outcomes; it is critical that due attention is paid to such externalities. Our findings with regard to Rwanda’s recovery measures indicate that these interventions need to be accompanied by additional policies and programs that support Rwanda’s export sector, particularly its agricultural exports.
3. The production support component of the relief measures is the dominant force driving the recovery of economic growth and job creation; however, due attention needs to be paid to vulnerable households. Social protection programs need to be expanded in order to address the complex and often long-lasting effects of temporary shocks on such households, as they are unlikely to recover their pandemic-related job and income losses with production support only.
4. The pandemic is still unfolding globally and Rwanda will likely continue to face many uncertainties that affect its future growth and development strategy. It seems obvious, however, that the post-pandemic development strategy will need to be significantly different from the pre-pandemic strategy. As a small country with an open economy, during the past decade Rwanda has relied heavily on global markets for its rapid growth; however, in coming years global markets are expected to be very different. This may require the Rwandan economy to increasingly rely on domestic or regional markets in Africa for its growth; it may also require

policies to support the agricultural sector and SMEs in the nonagricultural sectors, which may become increasingly important as drivers of both demand and supply.

5. The pandemic has also demonstrated the continuous need for high quality and high frequency data, information, and analysis. Greater attention should be given to the collection of data at multiple levels, including at the micro (households and firms), meso (sectoral and regional), and macro levels. Greater attention should also be given to making data available to analysts as early as possible so that appropriate evidence-based policy recommendations can be developed quickly in response to a shock such as COVID-19 or to any other shocks that may befall Rwanda in the future.³

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³ A long-standing partnership between the Government of Rwanda, IFPRI, GIZ, and other development partners has resulted in this analysis; it is an example of how data sharing and collaboration can provide policymakers with both relevant and timely analysis to inform economic policy decisions.

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