ERF Policy Brief

Economic Resilience in Morocco During COVID-19

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About the authors

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In a nutshell

- *The COVID-19 crisis has heavily impacted the Moroccan economic situation.*
- *The travel and movement restrictions imposed in response to the pandemic have had a negative impact on both business activities and household living standards. The colossal job losses caused by the pandemic have led to a decline in the incomes of households, thereby affecting their level of consumption.*
- *The labor market situation has deteriorated under the combined effect of COVID-19 and the dry agricultural season, characterized by a decline in the number of jobs, a drop in the hourly volume of work, and an increase in unemployment, underemployment, and inactivity.*
- *In this context, the national economy has lost 432,000 jobs compared to 165,000 jobs created in 2019. This loss has affected both rural and urban areas (295,000 in rural areas and 137,000 in urban areas) and all sectors of economic activity.*
- *In addition to the loss of jobs, the number of hours worked per week declined by 20 percent from 494 million hours to 394 million hours, which corresponds to 2.1 million full-time jobs. The average number of hours worked per week fell from 45.2 to 37.5 hours.*
- *The government has taken measures to strengthen the resilience of the various economic agents (households, companies, the central bank, the Ministry of Finance…etc.). These measures include the creation of a strategic investment fund, public administration spending, cash transfers to households, private consumption, and lower interest rates.*

This work quantifies the resilience of the Moroccan economy during the COVID-19 period. On the one hand, this resilience is linked to the reduction of systemic vulnerabilities and the minimization of the negative effects of this shock on growth processes in particular and development in general. On the other hand, the adoption of measures to boost economic activity and encourage job creation in the context of inclusive growth can promote the resilience of the Moroccan economy in the face of the COVID-19 crisis.

The DSGE model used in this work is based on the Bayesian estimation and uses 11 quarterly series for Morocco covering the period Q1 2000 to Q4 2019. Our database includes real GDP, private consumption, public consumption, private investment, public investment, average interbank rate, inflation, tax revenues, primary deficit, public debt, and public transfers.

This work also assesses the impact of decisions taken by the government to counter the negative effects of the COVID-19 pandemic, including the creation of a strategic investment fund, public administration spending, cash transfers to households, private consumption, and the lowering of interest rates. It proposes a series of short-term recommendations to address the critical phase of the crisis and long-term recommendations to make the Moroccan economy more resilient.

Policy responses against COVID-19

In response to the pandemic, the Government of Morocco reacted quickly with the creation of a COVID-19 monitoring commission to track the situation and develop strategies. To this end, a COVID-19 Fund was created to cover medical expenses and support economic recovery while providing income to workers in the formal and informal sectors. The fund granted cash transfers of around 25 billion Moroccan dirhams (DH), equivalent to 2.5 percent of GDP, to five million households among the vulnerable population. This is in addition to measures implemented for distressed businesses, small- and medium-sized enterprises, very small and medium enterprises, and the liberal professions by granting monthly allowances of DH 2,000 and family allowances to private sector employees who were declared as unemployed to the CNSS in February 2020. Other measures included the suspension of the payment of social charges until June 30, 2020; the establishment of a moratorium for the repayment of bank loans and for the repayment of leasing maturities until June 30, 2020 without payment of fees or penalties; and the activation of an additional line of operating credit granted by the banks and guaranteed by the Central Guarantee Fund

(Damane Oxygène and Damane Relance). Support was also provided to the tourism sector, events, press, cultural and creative industries, private gyms, and nurseries. The latter have also been accompanied by measures taken at the tax level, including allowing companies with a turnover of less than DH 20 million in 2019 to benefit from a postponement of the filing of tax returns until June 30, 2020. Another measure aimed at boosting economic activity is the creation of the Mohammed VI Fund for Strategic Investment with DH 45 billion, equivalent to 4.5 percent. This fund will be responsible for supporting production activities, as well as accompanying and financing major public-private investment projects in the strategic areas of the national economy.

The central bank, Banque Al-Maghrib (BAM) complements the government's policy measures by adding liquidity support to mitigate the sudden halt in economic activity and associated cash flow problems. On March 29, 2020, BAM lowered the monetary policy rate by 25 basis points to two percent and then to 1.5 percent on June 16, 2020. It also announced a series of monetary measures to support access to credit for businesses and households. Measures are being taken to strengthen the specific refinancing program for very small businesses and SMEs by including operating loans in addition to investment loans. As part of the integrated program to support and finance businesses, BAM is also establishing a line of credit over a 12-month period to refinance new loans distributed to small and medium industries. A decree was also adopted on March 29, 2020 to authorize Morocco to meet its foreign exchange needs by borrowing on the international market. On June 16, 2020, BAM also reduced its reserve rate to zero from two percent, which will free up about DH ten billion (USD 1.03 billion) of liquidity for the sector.

During the year 2020, the national economy has been heavily affected by the internal and external repercussions of the health crisis. The mobilization of the necessary funds to support the vulnerable social classes and the entrepreneurial fabric has contributed to mitigating the socio-economic impacts of the pandemic to some extent.

According to Moroccan National Statistical Office (HCP) forecasts (2021 economic budget forecast), the national economic outlook for the year 2021 also takes into consideration the provisions announced in the 2021 Finance Law and assumes the realization of an average cereal production of 75 million quintals during the 2020/2021 campaign.

Based on these assumptions, in these economic conditions surrounded by the uncertainties related to

the pandemic – and taking into account an expected evolution of 4.7 percent of taxes and duties on products net of subsidies – the GDP should record a growth of about 4.6 percent in 2021 after a recession of seven percent in 2020. In value terms, the GDP is expected to grow by 5.8 percent. This development points to a slight 1.1 increase in inflation measured by the GDP deflator.

Government consumption should improve by 5.7 percent, after 6.2 percent in 2020, contributing 1.3 percentage points to GDP growth. In total, domestic final consumption is expected to increase by 4.4 percent instead of a decline of -5.4 percent in 2020, bringing its contribution to GDP growth to 3.4 percentage points instead of a negative contribution of -4.1 percentage points in 2020.

While consumption is expected to recover gradually, investment remains dependent on a fiscal stimulus policy and a recovery in confidence and visibility regarding future prospects.

In this context, the Mohammed VI Fund for Investment has been created and should be endowed with DH 45 billion, including DH 15 billion from the general budget of the State. The remaining 30 billion should be mobilized from international partners and local institutions. This fund would be allocated to priority sectors, such as industrial restructuring, high-potential activities, small- and medium-sized enterprises, infrastructure, and tourism. The overall volume of public investment should therefore rise to DH 230 billion in 2021 from DH 182 billion in 2020, registering an increase of 26 percent.

Under these conditions, the gross fixed capital formation should increase by 6.5 percent in volume. Its contribution to economic growth should be positive by 1.7 points. The change in inventories should make a positive contribution of 0.2 points to GDP growth, instead of a negative contribution of -0.8 points in 2020. Taking these developments into account, gross investment should increase by 6.7 percent, with a positive contribution of two percentage points to growth, instead of the negative contribution of 3.2 percentage points expected in 2020.

There needs to be a continued mobilization of the funds to cover the additional costs of the programs and projects announced in the 2021 Budget Law and efforts to restore macroeconomic balance.

Taking into account the expected increase in non-tax revenues in 2021, under the effect of the resources generated by the new mechanisms for financing public investments according to the 2021 Finance Act, ordinary revenues should increase by almost three percent to represent 20.5 percent of GDP in 2021.

Current expenditure is expected to reach 21.5 percent of GDP, mainly as a result of the increase in operating expenditure, both on wages and on goods and services. Similarly, compensation expenditure is expected to increase in line with the foreseeable rise in prices, particularly of butane gas in 2021.

Taking into account investment expenditure, which would represent six percent of GDP in 2021, the budget deficit should be reduced by almost one percentage point to 6.4.

This pace forecast by the HCP also depends very strongly on the behavior of households and companies, which, given the extreme degree of uncertainty, are likely to resort to precautionary savings, which could be a considerable brake on private consumption and investment. Given this observation, it is essential to test the resilience of the Moroccan economy by quantifying the impact of the measures taken and assessing the economy's response to the scenarios adopted.

Economic resilience in Morocco during COVID-19

This section aims to quantify the changes identified in the Moroccan economy following the outbreak of COVID-19 to test the resilience of the economy through the analysis of the transmission channels of the following shocks while measuring their impact on Moroccan economic activity.

Public investment as a lever for growth following the pandemic

Figure 1 shows the dynamics of the implementation of the Mohammed VI Fund for Strategic Investment with DH 45 billion equivalent to 4.5 percent of GDP on the Moroccan economy. In the short term, this shock has an immediate impact on activity. The GDP increased by 0.5 percent at the time of the impact, followed by a linear decline to reach a value of 0.1 percent after two years. To satisfy this increased demand, firms simultaneously increase the use of capital by 0.2 percent and the demand for labor by +0.5 percent, which increases the rate of return on capital and wages. Although this increase in wages and the return on capital increases the consumption of non-Ricardian households,[1] total consumption is down due to the decline in consumption by Ricardian households, which represent the largest proportion of households in the economy. Total consumption is the sum of the specific

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[1] This category of households has the specificity of consuming all their current income, net of taxes, as defined by Campbell and Mankiw (1989).

Figure 1. Impulse responses to the public investment shock
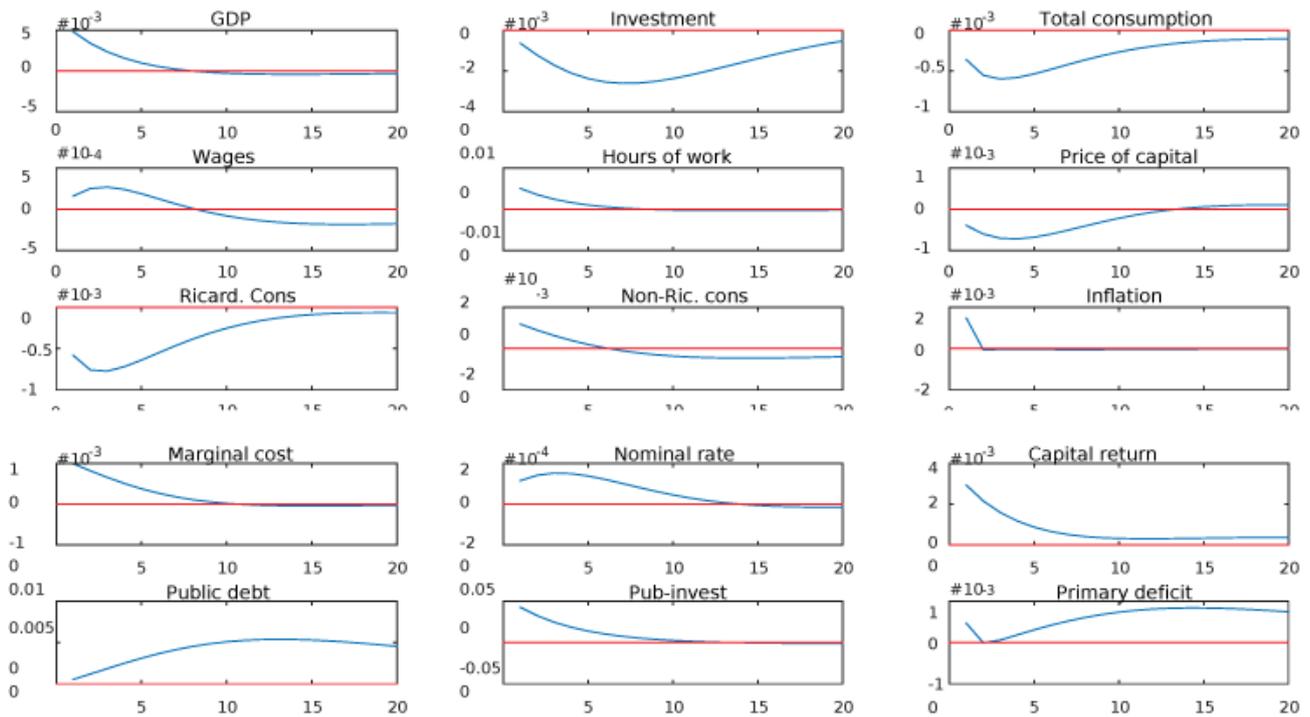
The y-axis denotes deviations from equilibrium values in percentage points of equilibrium output and the x-axis denotes time in quarters from the shock.

consumption of Ricardian and non-Ricardian households weighted by their respective shares in the economy.[2]

This increase in wages and return on capital leads to an increase in marginal cost and inflation, which rose by 0.1 percent on impact before returning to the equilibrium state at the edge of a year.[3] According to the results of this shock, the accelerating effect of investment leads to an increase in activity that is smaller than the size of the initial shock in the short term; the multiplier is less than one GDP point after two years. In the medium term, selling prices increase with demand due to wage growth. Wages grow with the fall in the unemployment rate (the Phillips effect), the rise in consumer prices, and productivity. The rise in labor costs is quickly transmitted to prices via the price-wage loop. This inflationary effect slows down demand; consumption and investment are less dynamic, while the fall in unemployment is reduced. This high level of inflation and marginal cost prompts BAM to raise the nominal interest rate. Subsequently, this increase in the real interest rate leads to a decrease in the price of capital and investment.

The shock also leads to an increase in the primary deficit and public debt, which have recorded respective values of 0.1 and 0.5 percent in the medium term.

In the long term, the creation of this fund leads to an increase in private investment. This result is due to the knock-on effect of public investment, which helps stimulate public ordering and, consequently, job creation in the private sector. The quantitative results of the model simulation show the modest results of this measure.

The results of this shock are consistent with the studies of Ratto et al. (2009), Coenen et al. (2013), Straub and Tcharkov (2007), and Bahttari and Trzeciakiewicz (2016).

Ratto et al. (2009) estimate a DSGE on euro area data after a public investment shock and find a positive response of private consumption. For the same shock, Traum and Yang (2010)[4] find a negative response from private investment.

The impact of an increase in private consumption

As indicated above, and according to the HCP forecasts, which suggest that private consumption will increase by 3.9 percent in volume (equivalent to 2.4 percent in GDP

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[2] The decline in private consumption following an increase in public investment, however, contradicts the results of several empirical studies based on structural VARs.

[3] This increase in aggregate demand and production leads to an increase in the demand for money for transaction purposes.

[4] Traum N. Yang S.C.S. Investigating the crowding out effect of US government debt. Working Paper Series, Congressional Budget Office, Washington, D.C., 2010.

points), this section seeks to quantify the changes caused by this variation. The quantification of the impact of the increase in private consumption on the other macroeconomic indicators (in an economy where some of the agents are credit constrained) shows, in the short term, an increase in output of 0.3 percent before amortizing in two years. This result can be explained as follows: in response to the increase in this main component of internal demand, companies increase the use of capital and the supply of labor, which recorded respective increases of 0.2 and 0.3 percent, which led to an increase in wages and return on capital with the same value of 0.2 percent for both variables.

The increase of these last two variables leads to the increase in the marginal cost and the inflation that have registered values of 0.2 and 0.1 percent, respectively. BAM reacts to this increase in the inflation rate by raising its key interest rate (the nominal interest rate). Compared to the first shock, these costs will increase only slightly as a result of a given additional demand. This is because public investment depends negatively on marginal cost. This is why inflation and the nominal interest rate increase slightly following the public investment shock compared to the private consumption shock. Note that the increase in wages is smaller than in the case of the private consumption shock.

The effect of the increase in the nominal interest rate leads to a decrease in the price and value of capital and subsequently in investment, which, in turn, is marked by a weak evolution. In the long run, the shock to private consumption leads to an increase in private investment. It should also be noted that both types of consumption, namely Ricardian and non-Ricardian households, show positive responses after the shock. The increase in total consumption can be explained by the increase in the consumption of Ricardian households, which represents the largest share of households.

The effect of the shock on the debt and on the primary deficit is instantaneous and negative with respective values of one and two percent, thereby explaining the role of the consumption tax, which represents 30 percent of Moroccan tax revenues and its role in financing the deficit and the public debt during the last decades.

The impact of an increase in public transfers

The granting of DH 25 billion, equivalent to 2.5 percent of GDP, in the form of cash transfers to five million households among the vulnerable population, was an initiative to stimulate household purchasing power and boost Moroccan economic activity (heads of households operating in the informal sector having lost their income due to the compulsory confinement linked to the health

Figure 2. Impulse responses to the private consumption shock
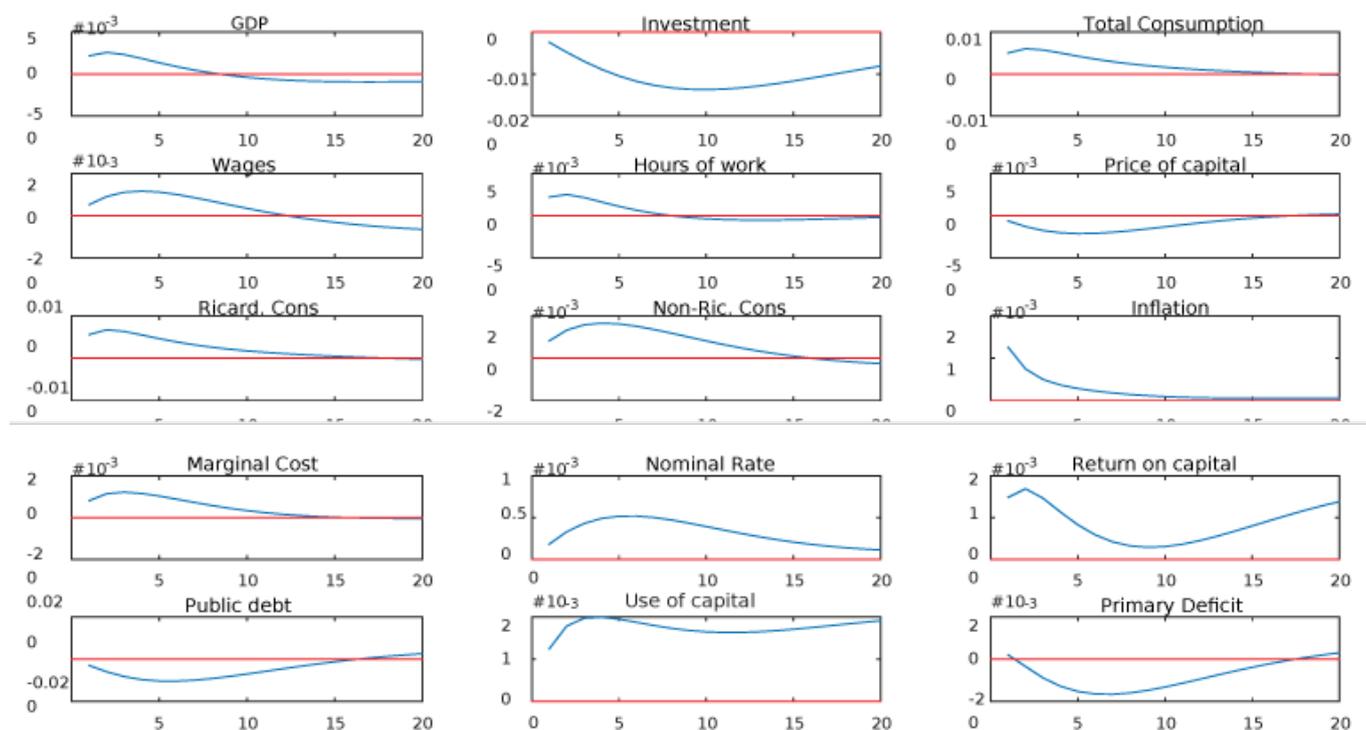
The y-axis denotes the deviations from equilibrium values in percentage points of equilibrium output and the x-axis denotes the time in quarters from the shock.

crisis). The dynamics of the variables following this shock indicate a positive and instantaneous response of production and total consumption, which recorded values of 0.2 and 0.3 percent, respectively, before simultaneously recording declines that were absorbed over the course of one year for production and two years for consumption. This response is attributable to the consumption behavior of the Ricardian and non-Ricardian households, which recorded increases of around 0.02 percent and 0.4 percent, respectively. The difference is that the non-Ricardian households immediately consume this fraction, but the dynamics of the model record the decline in consumption of Ricardian households and the increase in the return on capital. Both movements can be explained by the increase in savings of this category of households, which promotes the increase in the supply of capital and subsequently leads to the increase in demand for labor and use of capital, resulting in the growth of output – even for a short time. According to Figure 10, the effect of the increase in transfers on production lasts for only one year. After that and in the medium term, a negative behavior of production is registered.

The instantaneous response of the nominal interest rate is negative and adopts a negative behavior during the period studied, at which point we can say that the rise in inflation and output led to an increase in the nominal interest rate. This increase, however, is small and shorter than in the case of the public investment shock. The effect

of the increase in the nominal rate leads to a decrease in the price of capital and subsequently investment, which only begins to show positive behavior after the first year following the shock.

The increase in targeted transfers to households results in an increase in the primary deficit and public debt, which recorded values of 0.03 and 0.2 percent, respectively, and adopted an upward trend during the period under study, which highlights the need to consider the sources of financing for these measures and their impact on the sustainability of public finances in Morocco.

The impact of increased public consumption

To cope with the negative effects of the COVID-19 outbreak, especially the expenses related to health, Morocco plans to increase the public order of 5.7 percent equivalent to 1.3 percent of the GDP. These measures would have involved exceptional spending to support the health sector and purchasing power. The dynamics of the variables after the increase in public spending are consistent with economic theory and indicate the presence of a crowding-out effect on private consumption, which fell by 0.03 percent in the first year before recovering slightly in the medium term. As shown in Figure 11, the crowding-out effect characterizes the response of Ricardian household consumption, which suffered a negative wealth effect with a value of -0.04 percent. Thus, faced with the increase in public spending, these households anticipate the future tax increase and

Figure 3. Impulse responses to the shock of public transfers
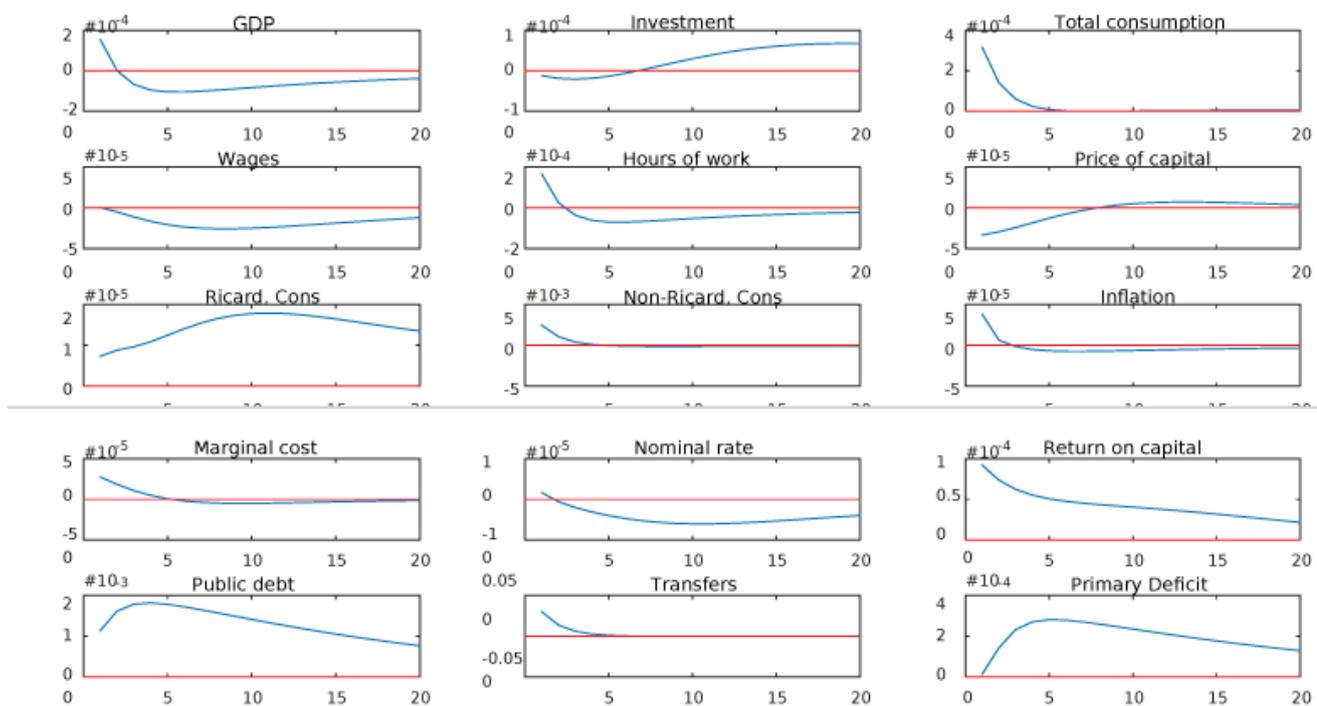
The y-axis denotes the deviations from equilibrium values in percentage points of equilibrium output and the x-axis denotes the time in quarters from the shock.

consequently reduce their current consumption and save more. In the short run, the shock increases aggregate demand for goods[5] and GDP, which recorded a value of 0.3 percent on impact before falling back after a year. To meet this increased demand, companies are simultaneously increasing the use of capital and the demand for labor (labor force), which recorded values of 0.2 percent and 0.3 percent, respectively, increasing the rate of return on capital and real wages.

Despite this increase in wages[6] and the return on capital increases, the total consumption of non-Ricardian households[7] shows a decline due to the decrease in consumption by Ricardian households, which represent the largest proportion of households in the economy. Total consumption is the sum of the specific consumption of Ricardian and non-Ricardian households weighted by their respective shares in the economy. The decline in private consumption following an increase in public consumption, however, contradicts the results of several empirical studies based on structural VARs.

On the other hand, this increase in wages and the return on capital leads to an increase in marginal cost and inflation;[8] recording values of 0.05 and 0.1 percent, respectively. This high level of inflation and marginal cost prompts BAM to increase the nominal interest rate. Subsequently, this increase in the real interest rate leads to a decrease in the price of capital and investment.

The shock also leads to an increase in the primary deficit and public debt, which recorded values of 0.2 and 0.3 percent, respectively. The results of this shock are consistent with those of Brand T. (2012) and Perotti (2005).[9] These authors find impulse responses similar to the results obtained by our model.[10]

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[5] Price rigidity plays a very important role in increasing the demand for goods

[6] This increase is limited by the presence of wage rigidities.

[7] This category of households has the specificity of consuming all their current income, net of taxes, as defined by Campbell and Mankiw (1989).

[8] This increase in aggregate demand and production leads to an increase in the demand for money for transaction purposes

[9] Roberto Perotti. Estimating the Effects of Fiscal Policy in OECD Countries, Journal of Econpapers.2005.

[10] Perotti (2005) also finds a positive and significant response from the real interest rate.
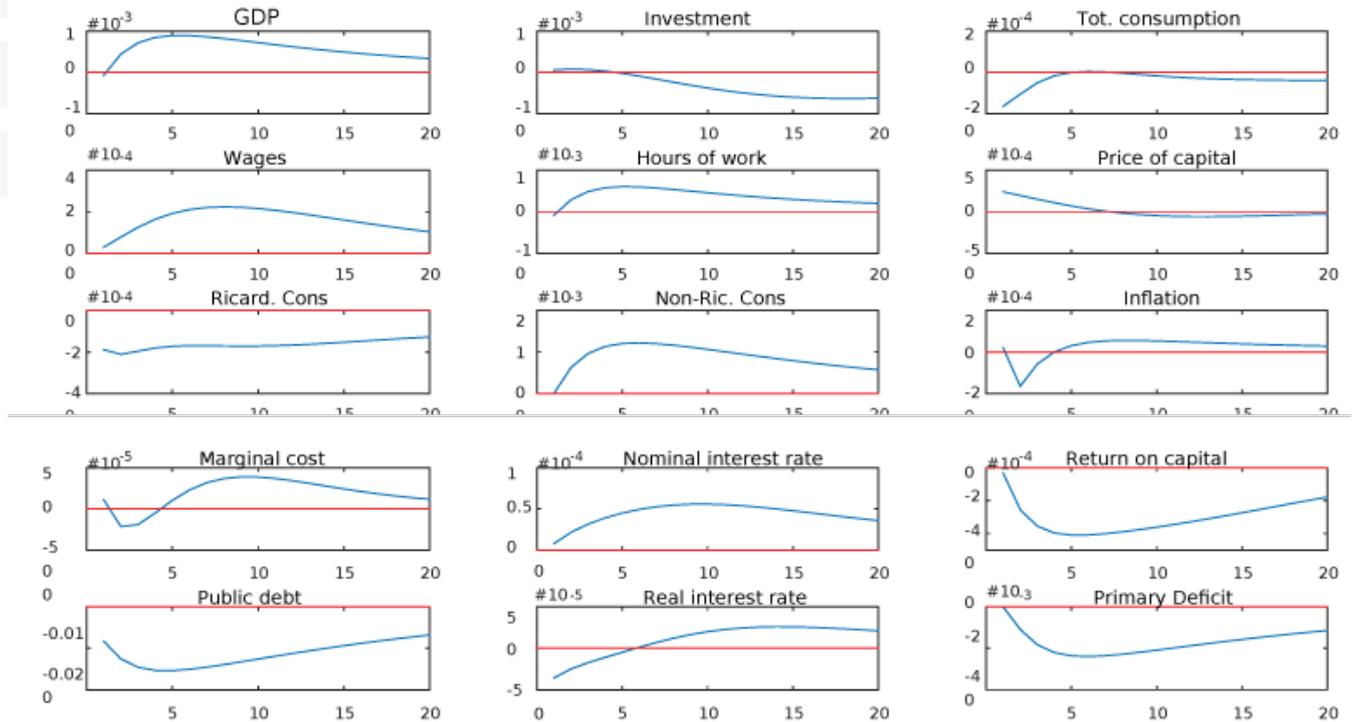
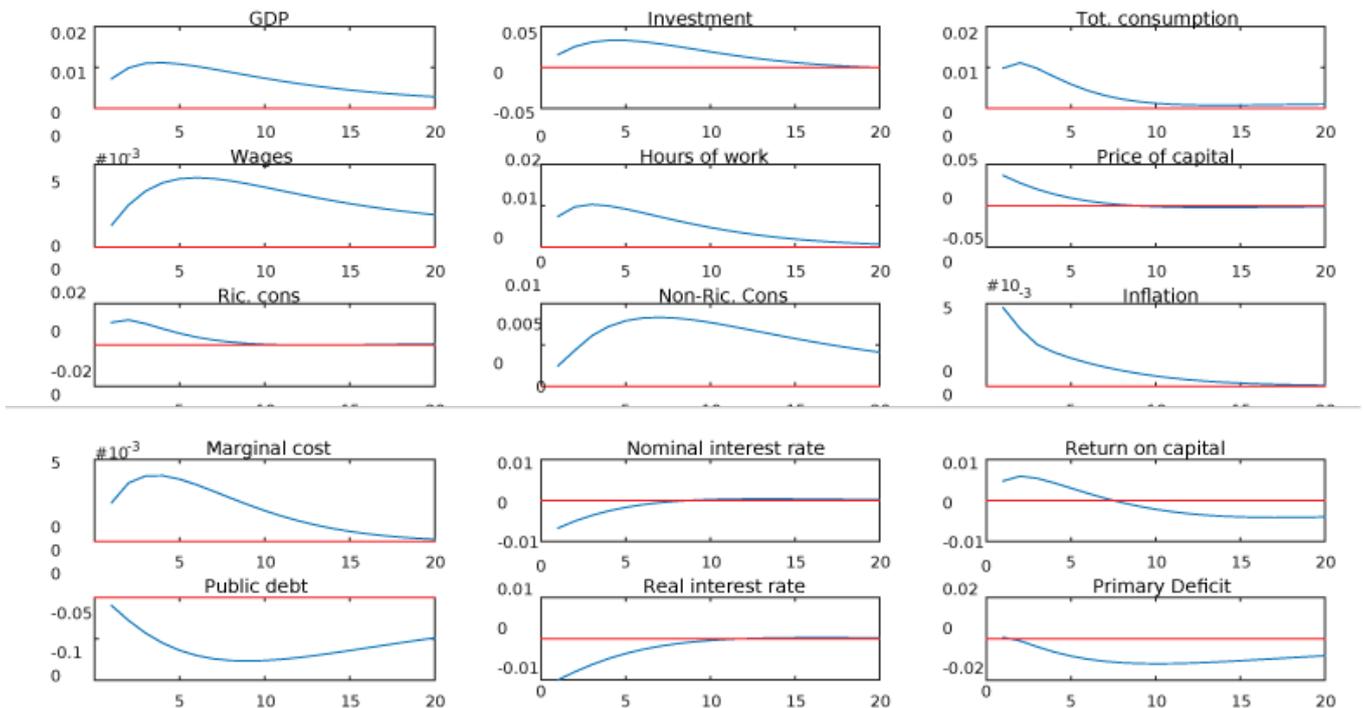*Figure 4. Impulse responses to public consumption shock*
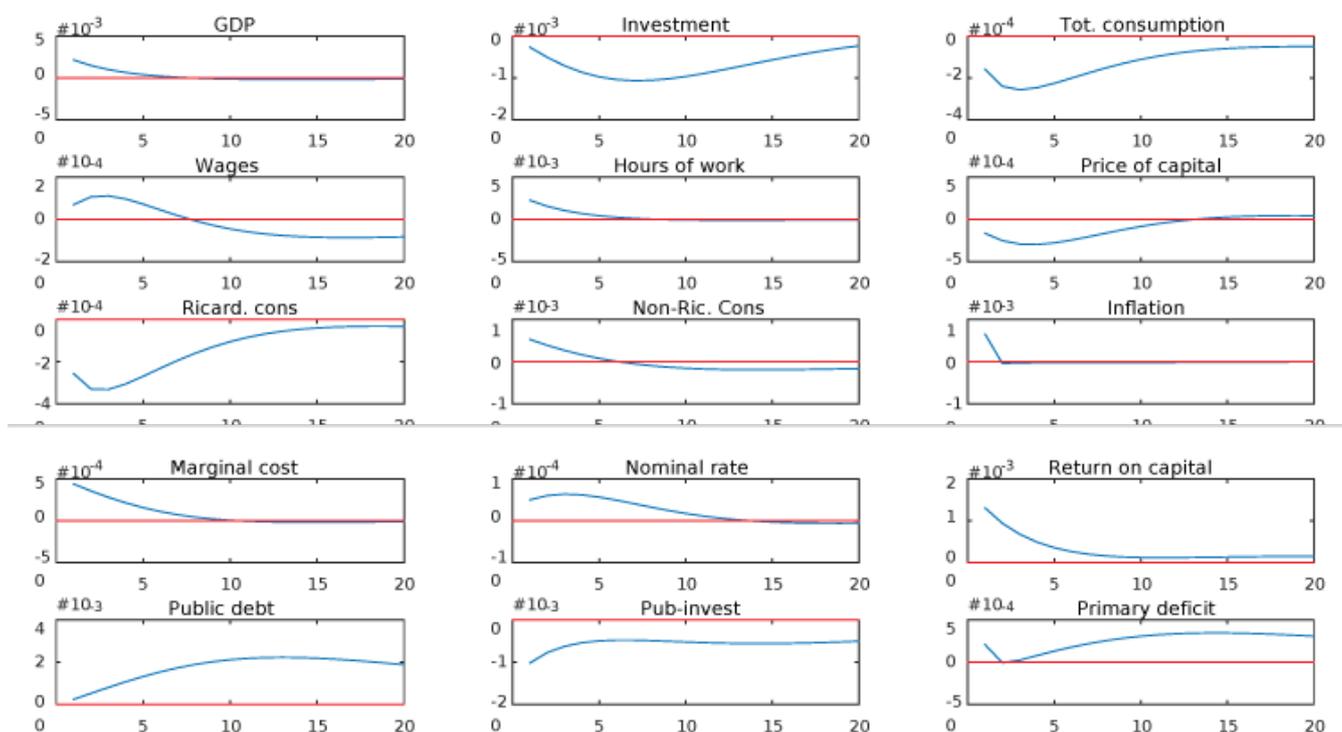
The y-axis denotes deviations from equilibrium values in percentage points of equilibrium output and the x-axis denotes time in quarters from the shock.

Figure 5. Impulse responses to tax revenue shock

The y-axis denotes deviations from equilibrium values in percentage points of equilibrium output and the x-axis denotes time in quarters from the shock.

The impact of increased tax revenues

According to HCP forecasts, tax revenues should increase by 4.7%. After a few months, the results of the simulations show a progressive recovery of production that registered an increase of 0.1 percent generated by the increase in public expenses (investment and consumption), which also incited a progressive increase in the offering of work and use of capital that registered values of 0.1 and 0.2 percent, respectively, at the edge of a year.

Figure 6. Impulse responses to interest rate shock

The y-axis denotes deviations from equilibrium values in percentage points of equilibrium output and the x-axis denotes time in quarters from the shock.

The increase of these two factors leads to an increase in wages and return of capital that will lead, in turn, to an increase of the marginal cost and inflation. This high level of inflation and marginal cost prompts BAM to raise the nominal interest rate. Subsequently, this increase in the real interest rate leads to a decrease in the price of capital and investment.

Compared to other shocks, the increase in tax revenues is characterized by a (more or less) long duration, which is a very important factor for boosting Moroccan economic growth in the long run.

The impact of a decrease in the interest rate

The measures taken by BAM to counteract the negative effects of the COVID-19 pandemic include the reduction of the key rate of 0.5 percent in March and 0.25 percent in June 2020. In order to appreciate the impact of this change on the Moroccan economy, the simulation results of this shock show a one percent increase in output, highlighting the importance of this shock compared to shocks treated previously. This increase in production is a direct response to the increase in the injection of liquidity by BAM in the financial system, which led to an increase in investment and consumption that recorded values of four and one percent, respectively. This increase supposes the increase in the demand for work and salary, which have registered values of one and 0.5 percent, respectively. On the other hand, the fall in the interest rate led to an increase in consumption by Ricardian and non-Ricardian households, but to a greater extent for the former because they have access to the financial market. The shock led to an increase in the marginal cost explained by the increase in wages and the return on capital, which recorded a value of one percent.

Indeed, this enrichment of production, consumption, and investment is reflected in the public debt and the primary deficit that have recorded decreases in the order of one and two percent, respectively.

Conclusion

An examination of the resilience of the Moroccan economy in the wake of the COVID-19 crisis highlights the importance of the measures taken by the government. Indeed, the impacts vary greatly depending on the type and size of the shock and the channel adopted to revive economic activity. According to the simulations, the different measures increase production, but to different degrees; the strategic investment fund, public consumption, and the reduction in the interest rate increase production in the short term, while the increase in tax revenue increases production in the medium and long term. Increased cash transfers and

household consumption increase output in the short run but have a negative effect in the medium run, crowding out one of the main components of aggregate demand, namely private investment. As a ranking of the weight of the impact, it can be argued that the most important effects are those of public investment, the fall in the interest rate and the increase in tax revenue, public consumption, and then cash transfers. The latter are in last place with low values that are even negative in the medium term.

However, positive shocks to public spending crowd-out the two main components of aggregate demand: private consumption and investment. On the other hand, the decline in the interest rate stimulates these two components, which highlights the importance of central bank injections to boost economic activity, especially in times of crisis such as that of COVID-19

According to the results of this study, the harmonization of fiscal and monetary policy strengthens the government's ability to adopt economic stabilization measures in times of crisis. However, protecting and strengthening the capacities of vulnerable households can prevent the deterioration of economic activity, especially in times of crisis. Broadening the tax base and adopting a fair tax reform can be an option to boost economic growth after the crisis. In general, continued reforms to promote inclusive growth and broaden its distribution across all components of the country will strengthen resilience to crises.

Further Reading

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