

# Debt-financed fiscal stimulus in South Africa

by Hylton Hollander

Over the last decade, emerging market economy countries such as South Africa have seen their levels of government debt-to-GDP rise substantially, which has led to much debate around fiscal sustainability and sovereign debt risk. Even so, with the global economic fallout due to the covid-19 pandemic, governments implemented large-scale debt-financed fiscal stimulus (DFFS) programs. DFFS programs directly stimulate aggregate demand through government expenditure or tax cuts, but their effectiveness is highly dependent on the degree of crowding-in or -out of private sector expenditure, spillover effects on the private sector through a higher risk premium, and the interaction between fiscal policy and monetary policy. An important facet of this debate, that has received limited attention in the literature, surrounds the quantitative and dynamic effects of debt-financed fiscal stimulus programs on interest rates.

Empirical evidence on the effect of government debt on interest rates in South Africa is very limited. This research contributes to the literature by estimating the effect of DFFS on interest rates in a dynamic stochastic general equilibrium (DSGE) model. The open-economy fiscal DSGE model contains several features that make it suitable for fiscal policy analysis, including the ability to measure the response of economic output, public debt levels, and interest rates from the implementation of different fiscal policy instruments.

In summary, the results show non-negligible differences in the responses of households, firms, and the monetary authority to each fiscal policy shock. For example, a large or persistent DFFS driven by government investment, as opposed to government consumption, would lead to far more favourable economic and fiscal outcomes. In fact, an investment-driven DFFS could reduce the government debt-to-GDP ratio in periods of economic slack, when monetary policy is typically also accommodative. In contrast, the results also show that a reduction of effective tax rates (a proxy for tax-driven DFFS policies) are contractionary because government spending falls in response to lower tax revenue and reduced effective tax rates provide little stimulus for private spending. A key finding is that, given government's expenditure commitments, lower tax revenue needs to be replaced

## FINDINGS

The effect of debt-financed fiscal stimulus (DFFS) on short- and long-term interest rates is a key transmission mechanism for fiscal sustainability outcomes

Different fiscal instruments produce different dynamic outcomes on output, debt, and interest rates, with important implications for fiscal policy analysis

An investment-driven DFFS reduces the government debt-to-GDP ratio. This result is accentuated in periods of economic slack, when monetary policy is typically also accommodative

In contrast, the effect of all tax-driven DFFS policies are contractionary

In South Africa historically low interest rates and stable inflation have reduced the burden of fiscal adjustment in response to rising debt and a rising risk premium

by debt issuance which raises borrowing costs. Finally, inflation stability and historically low interest rates (attributable to monetary policy) has reduced the burden of fiscal adjustment in response to rising debt and a rising risk premium.



Photo by Dikaseva

## Interest Rate Effects in a DSGE Model

The open-economy fiscal DSGE model used for this analysis is based on Kemp and Hollander (2020). The model is estimated with eighteen South African data series and 21 shocks. The domestic variables are output, employment, inflation, real wages, short-term interest rate, import goods inflation, export goods inflation, government debt-to-GDP, and the inflation target. The foreign variables—output, inflation, and the short-term interest rate—are based on the weighted-average series from South Africa's main trading partners. The six fiscal policy variables—consumption spending, investment spending, transfers, a consumption tax, a labour tax, and a capital tax—are estimated by six fiscal reaction functions that capture automatic responses to output and debt as well as discretionary changes. The model also captures an important feature of sovereign debt spillovers to the private sector through the relationship between the ratio of government debt to GDP and the country risk premium for long-term borrowing.



Photo by Josh Appel

### The effect of debt on interest rates

The results show that the dynamic adjustment of the components of expenditure are markedly different. An investment-driven DFFS initially reduces the government debt-to-GDP ratio through its positive demand-side stimulus, whereas government transfers and government consumption spending typically lead to crowding out of private spending (i.e., a reduction in aggregate demand) and a larger increase in debt. Furthermore, the divergences between these disaggregated expenditure components are dampened by the endogenous response of monetary policy to changes in aggregate demand (output and inflation). For example, government consumption spending puts additional upward pressure on the real interest rate through

weaker aggregate demand (namely, disinflation). These findings suggest that an investment-driven DFFS produces more favourable outcomes for fiscal sustainability, as well as during recessionary episodes when monetary policy and fiscal policy are both expansionary.

In contrast to expenditure shocks, all debt-financed tax revenue reductions (a proxy for tax-driven DFFS programs) exhibit similar effects on the business cycle and government debt dynamics: they reduce aggregate demand (output and inflation) and raise the government debt-to-GDP ratio. The model finds that this contractionary effect is due to lower government expenditure (due to lower tax revenue), higher debt servicing costs (due to debt accumulation and an elevated risk premium), and relatively weak tax multipliers on private consumption and investment. As a result, the effect of debt-financed tax cuts on short- and long-term interest rates are similar across the disaggregated tax revenue components. An increase in consumption tax revenue, labour income tax revenue, and capital tax revenue all raise long-term nominal and real

rates. This increase in the long-term interest rate is driven by a higher risk premium as opposed to the endogenous response of the short-term interest rate through monetary policy.

### The effect of interest rates on debt

Shocks to the short-term interest rate (attributable to monetary policy) and the long-term interest rate (attributable to the country risk premium) contribute 14% and 10% of the variance of government debt-to-GDP. Since the global financial crisis, monetary policy has reduced the burden of fiscal adjustment in response to rising debt and a rising risk premium. But, further shocks to the risk premium could offset any gains from the current stance of monetary policy (for example, a credit rating shock raises the long-term government bond rate 155 basis points).

If fiscal policy remains unsustainable a negative feedback loop between increasing debt servicing costs (through a higher risk premium) and rapid debt accumulation may push the country into a sovereign debt crisis and economic distress.

This brief is based on SA-TIED Working Paper #200/2021, Debt-financed fiscal stimulus in South Africa by Hylton Hollander.

## RECOMMENDATIONS

**A large and persistent DFFS driven by government investment, as opposed to government consumption, would lead to far more favourable economic and fiscal outcomes**

**The responses of monetary policy and the risk premium to DFFS are particularly important. Notably, the current stance of monetary policy, in its efforts to maintain inflation and output stability, alleviates the burden of fiscal adjustment needed to stabilize public debt**

**If fiscal policy remains unsustainable a negative feedback loop between increasing debt servicing costs (through a higher risk premium) and rapid debt accumulation may push the country into a sovereign debt crisis and an economic collapse with severe long-term consequences**

