

# Background note on macroeconomic policy responses to Covid-19: the Singapore experience

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## Abstract

Covid-19 has led to an economic crisis of historic proportions. This note considers the unique characteristics of the Covid-19 shock and outlines some implications for the design of macroeconomic policy responses. It examines the impact of Covid-19 on the Singapore economy, explains the macroeconomic policy mix adopted, and concludes with some key takeaways.

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## Introduction

Covid-19 has led to an economic crisis of historic proportions. While monetary policy has played an important role in stabilising financial markets and ensuring sufficient liquidity for corporates and households, it was recognised at an early stage of the crisis that fiscal policy would bear a larger share of the burden for ensuring macroeconomic stability. At the same time, economists have also pointed out that the Covid-19 shock differs in fundamental ways from those that have precipitated economic recessions over the past century, which complicates the application of traditional macroeconomic frameworks used to calibrate the optimal macroeconomic policy response.

The first part of this note identifies the characteristics of the recession induced by Covid-19 that set it apart from past crises and outlines some implications for the roles of fiscal and monetary policies in managing the economic fallout from the pandemic. The next section examines the impact of the pandemic on Singapore's economy, and assesses the macroeconomic policy response. A concluding section with key takeaways follows.

## Direct supply and demand effects of a pandemic

Pandemics, like other natural disasters, are typically regarded aggregate supply shocks. That is, spreading infection in the population reduces the amount of factor inputs available for production, leading to a temporary decline in short-term aggregate supply.

The Covid-19 shock to aggregate supply has reduced the productive capacity of the economy via temporary reductions in factor inputs and factor productivity in several important ways.

- The spread of infection in the population reduces labour supply as workers fall ill, with further declines due to quarantining of those in close contact with infected persons. Closure of schools forces many parents of younger children to work from home while taking on additional childcare duties, also reducing the effective labour supply.
- Temporary closures of physical workplaces to reduce disease contagion also increase the stock of available physical capital that lies idle (eg factories and machinery).
- Trade disruptions may reduce the supply of imported intermediate inputs and/or increase import prices, exposing countries to cost-push shocks and reducing aggregate supply temporarily.

The pandemic has also had direct negative impact on aggregate demand, via both external and domestic channels.

- Trade and mobility disruptions from cross-border movement restrictions aimed at slowing infection spread have negative effects on external demand, which are particularly significant for countries that are highly dependent on trade and tourism.

- Distancing restrictions within countries also reduce consumer spending on categories associated with social activities. This effect has been only partially offset by increases in spending on other items, such as electronics.
- Uncertainty about the trajectory of the Covid-19 shock can also be a drag on aggregate demand. Facing uncertainty about their future income earning capacity, households and firms may increase their precautionary savings by scaling down their consumption and investment plans, which further reduces aggregate demand.

The simultaneous supply and demand effects of a pandemic are neatly illustrated in a simple macroeconomic model by Eichenbaum et al (2020). The authors show that a growing fraction of the population infected with the disease results in both aggregate supply shocks, from infected individuals being unable to work, and aggregate demand shocks, from households reducing consumption to avoid infection.

## Interactions between supply and demand

The initial supply shocks may also negatively affect aggregate demand, leading to the large output gaps that are prevalent in traditional crises. For example, Guerrieri et al (2020) demonstrate that in the Covid-19 context, an initial negative shock to aggregate supply has the potential to cause an even larger decline in aggregate demand. The supply shock induced by Covid-19 has affected some sectors disproportionately, especially contact-intensive industries that have seen forced closures in many countries. As workers from these sectors see their incomes decline (if social insurance against income shocks is incomplete), they may cut back on spending, reducing demand in sectors that did not experience a supply shock. The demand shortfall is compounded if expenditure in sectors that have shut down is not reallocated to those that remain open, possibly because sector outputs are poor substitutes. In aggregate, this implies that the demand shock may be larger than the initial supply shock, a dynamic that the authors call a “Keynesian supply shock”.

The sharp and broad-based decline in revenues across the real economy could result in disruptions to financial stability in the presence of liquidity constraints and other financial frictions. While the economic effects of Covid-19 did not emanate from the financial sector, the potential for financial sector disruptions to amplify the economic damage for the rest of the economy remains a threat. As seen during the Global Financial Crisis (GFC), a financial crisis that results in synchronised tightening of financial conditions and plunging asset prices can have devastating and prolonged effects on aggregate demand.

## The role of macroeconomic policy in a pandemic

The nature of the Covid-19 shock has complicated the macroeconomic policy response to the crisis in at least two ways. First, the contemporaneous supply and demand shocks have led many economists to argue that traditional aggregate demand management via countercyclical monetary or fiscal stimulus is ineffective and that the macroeconomic response should instead aim at maintaining the productive

capacity of the economy. Second, until a sufficiently large proportion of the population is vaccinated, the public health threat from Covid-19 will continue to suppress economic activity, preventing a full economic recovery from taking hold. Maintaining fiscal support beyond the duration of a typical business cycle recession is very costly and societies will have to contend with the resulting excessive debt accumulation.

In the Aggregate Supply/Aggregate Demand framework, standard demand stimulus in the presence of supply constraints is ineffective at raising output and may even be inflationary. Instead of boosting aggregate spending, macroeconomic policies should aim at ensuring that the economy retains its productive capacity by preventing demand shortages during Covid-19 from causing widespread firm and household defaults. The macroeconomic policy response by most advanced economies reflects a general adherence to these prescriptions, as they have focused on facilitating credit to the broader economy and incentivising firms to retain workers.

Rather than using interest rates within a conventional monetary policy framework to stimulate lending and restore aggregate demand, central banks have largely employed credit policies to ensure sufficient liquidity in a broad class of lending markets, as well as to limit defaults by borrowers during the pandemic. Liquidity provision and debt deferment schemes have been widely implemented not just by central banks, but also by fiscal authorities. In effect, these policies ease the cash flow constraints of firms and households during periods when negative income shocks are likely to tighten them. As such, credit policies aim to reduce defaults among solvent households and firms that are facing temporary liquidity shortages.

Instead of aiming to stimulate aggregate demand by boosting public and private spending, fiscal support during the pandemic has mainly sought to limit the severity of economic dislocations from large-scale firm shutdown and job loss. Perhaps the fiscal policies that best embody the principle of maintaining the economy's productive potential are furlough schemes that have mainly been employed in Europe, and which have accounted for a large portion of the budgetary outlay in these economies. By retaining workers on payrolls, these schemes preserve the worker-firm matches that would allow production to recover quickly when economic activity resumes, while providing indirect cash transfers to households.

## Potential side effects of the macroeconomic response

Economists broadly agree that early intervention to support financial markets and the historically large fiscal response to Covid-19 were crucial in preserving the economy's productive potential while government-imposed lockdowns suppressed economic activity on an unprecedented scale. The sharp increase in government outlays and accumulation of public debt were inevitable, and indeed, justifiable consequences of the policy response to what was seen as a temporary shock. However, the pandemic has yet to run its course even after a year, and the forceful fiscal and monetary responses have raised concerns over debt sustainability and other potential side effects.

## Unwinding of credit and income support

As continued fiscal largesse will be unviable even for countries with healthy public sector balance sheets before Covid-19, fiscal support must be gradually unwound. An extended period of public sector support is not only costly but could delay the adjustments necessary for businesses to adapt to the post-pandemic economy. As conditions, constraints and resources differ across countries, there is no one-size-fits-all solution. However, a premature unwinding of official support measures—before the private sector is ready to take up the slack—could potentially set back the recovery and may lead to a deterioration in debt sustainability.

Credit policies and income support are generally targeted at liquidity problems faced by households and firms during Covid-19. However, the prolonged nature of the negative income shock may have eroded household and firm balance sheets sufficiently to induce solvency problems, which are likely to be most prevalent among lower-wage workers and firms with income streams that may not recover sufficiently over the foreseeable future. In these cases, continuing fiscal support through credit policies and short-term cash transfers may simply be postponing insolvencies. Thus, the cessation of fiscal support may lead to a sharp deterioration in balance sheet positions and a spike in defaults. A fundamental challenge for policymakers is bridging firms facing near-term revenue and liquidity strains to the post-pandemic economy.

## A world awash with liquidity

Central banks' efforts to keep financial conditions easy have led to an abundance of liquidity in global financial markets. This has resulted in a situation similar to the aftermath of the GFC, when the world was awash with liquidity and interest rates reached record low levels.

Excess liquidity and low interest rates may drive investors with aggressive near-term return mandates, such as pension funds, towards more risky investments in a search for yield. Low interest rates may also affect incentives to invest, with negative consequences for productivity growth. This may occur if a decline in long-term interest rates triggers a stronger investment response by market leaders relative to market followers, thereby leading to more concentrated markets, higher price mark-ups and lower aggregate productivity growth (Liu et al (2020)). Another possibility is that low interest rates reduce financial pressure on "zombie firms", which crowd out investment in and employment at more productive firms (Caballero et al (2008); Banerjee and Hoffman (2018)).

When interest rates eventually rise, highly indebted firms attempting to deleverage may have to either defer investments or take greater risks to ensure survival, leading to a drag on productivity growth. Further, the combination of low growth and high indebtedness may lead to elevated financial stability risks.

## Rising public debt

A fiscal deficit is said to impose a cost if the service of the accompanying debt generated necessitates either expenditure cuts or tax increases in the future. Deficits have fiscal costs if the interest rate  $r$  that the government pays on its debt is higher than the growth rate of the economy  $g$ . At present,  $r - g < 0$  holds for most countries, and additional debt does not necessarily entail a fiscal cost. Cochrane (2020) argues that even if  $r - g < 0$ , there is likely to be a threshold beyond which the private sector

would demand higher interest rates to hold government debt. This could trigger an explosive path for the debt-to-GDP ratio in the absence of primary surpluses.

History has shown many examples of how sovereign debt crises unfold. As debt rises, creditors understand that there is an increased risk of debt repudiation or monetisation, so they increase their assessment of the probability of higher inflation, caused by debt monetisation or outright default. This prompts perverse dynamics as domestic and foreign debt holders attempt to reduce their exposures to the overindebted sovereign, often reflected in reductions in government debt maturity, shifts in debt composition towards US dollar-denominated bonds and exchange rate depreciation pressures. Under high debt circumstances, monetary policy may be rendered ineffective as the government increasingly finances itself at short maturities, implying that a tighter monetary policy stance further worsens the fiscal situation. This mechanism underlies the unpleasant monetarist arithmetic described in the seminal paper by Sargent and Wallace (1981).

As the rise in debt is set to be a global phenomenon, there is a risk that isolated sovereign defaults by large emerging market economies (EMEs) could trigger tighter financial conditions for all other EMEs. Although the world has seen increasing convergence of inflation rates among advanced economies and EMEs, particularly after the GFC, this trend may reverse if EMEs collectively face difficulties rolling over large stocks of sovereign debt.

### A resurgence of high inflation

Recent articles have considered the possibility that the fiscal response to the Covid-19 crisis could lead to a resurgence of high inflation in some countries. While regarding high inflation after the pandemic as highly improbable, Blanchard (2020) argues that it may occur if the following three conditions come to pass: (i) high debt levels relative to GDP; (ii) large increases in the neutral real rate; and (iii) fiscal dominance of monetary policy. He argues that a debt-laden fiscal authority may be incentivised to maintain low interest rates, even when the neutral rate rises after the pandemic, potentially leading to high inflation.

In other words, while high debt levels are likely to be the end-result of the Covid-19 crisis for many countries, these are not inflationary as long as the real neutral rate is low (which supports debt sustainability) and monetary policy is dominant (which requires fiscal policy adjustment to maintain debt sustainability).

## How the Singapore economy was impacted by Covid-19

The Covid-19 recession in Singapore has been unprecedented in its intensity, having resulted in a cumulative 14% decline in GDP from pre-crisis levels in Q4 2019 to the trough in Q2 2020. This compares with an average contraction of 6.1% across past recessions.<sup>1</sup> Where the Singapore economy took about four quarters to fall from peak to trough in previous recessions, the trough in GDP had occurred by the second quarter in the current episode and was much deeper due to the nature of the Covid-

<sup>1</sup> Past recessions refer to the Asian Financial Crisis in 1997–98, the IT Downturn in 2001 and the Global Financial Crisis in 2008–09.

19 shock, which had disproportionately affected domestically oriented sectors with more extensive production and consumption linkages (Graph 1).

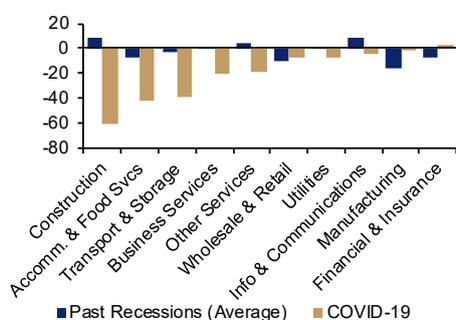
Activity rebounded after the exit from the “circuit breaker” measures in the third quarter, but the momentum of the recovery has since slowed. Even though many countries are likely to have vaccination campaigns in place by the end of 2021, the threat of repeated outbreaks in Singapore and globally will prolong the recovery in the interim. This incomplete recovery contrasts with the symmetrical recovery profile in past recessions, with the economy typically taking around three quarters to return from the trough to its pre-crisis level (Graph 1).

## The current downturn is deeper and likely more protracted than past recessions

Graph 1

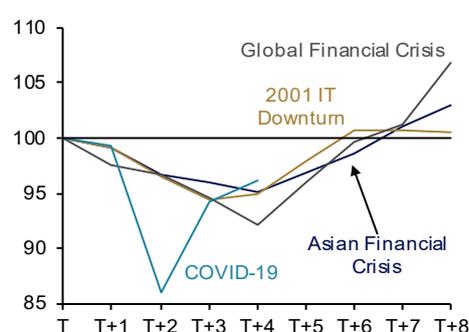
Domestically oriented and travel-related sectors were hit harder<sup>1</sup>

Peak-to-trough change in value added, per cent



Quarterly GDP profile across downturns<sup>2</sup>

Pre-crisis peak, T=100



<sup>1</sup> Past recessions refer to the Asian Financial Crisis in 1997–98, the IT Downturn in 2001 and the Global Financial Crisis in 2008–09. <sup>2</sup> T refers to the pre-crisis peak in GDP levels. T = Q4 2019 for Covid-19, Q1 2008 for the Global Financial Crisis, Q4 2000 for the 2001 IT Downturn, Q3 1997 for Asian Financial Crisis. Latest quarter for Covid-19 recession is Q4 2020.

Sources: Singapore Department of Statistics; EPG, MAS estimates.

## Singapore’s macroeconomic policy response to Covid-19

Faced with the most severe recession in Singapore’s history, the Monetary Authority of Singapore (MAS) and other government agencies formulated a decisive policy response to alleviate the economic cost of the public health measures taken in response to the outbreak. By providing immediate financial relief to businesses and households, the aim of the substantial and timely countercyclical support was also to prevent the severe shock from inflicting lasting damage to the economy.

### Monetary policy

With fiscal policy expected to provide the primary offset to the decline in incomes during the crisis, monetary policy played a complementary role in stabilising economic activity.<sup>2</sup> In January 2020, the outlook for the Singapore economy began to deteriorate after China placed Hubei province under lockdown and cases of Covid-

<sup>2</sup> Given the openness of the Singapore economy, monetary policy is centred on the exchange rate with the target of attaining low and stable inflation as the basis for sustainable economic growth.

19 emerged in Singapore. On 5 February, MAS clarified that the monetary policy stance remained unchanged, but noted that with the worsening outlook for growth and inflation there was sufficient room in the exchange rate policy band to accommodate an easing of the trade-weighted Singapore dollar (S\$) nominal effective exchange rate (S\$NEER), which had hovered near the upper (stronger) bound of the policy band since the October 2019 Monetary Policy Statement. The S\$NEER subsequently declined towards the mid-point of the policy band.

As the outlook for Singapore's growth and inflation deteriorated amid the escalating transmission of Covid-19 domestically and abroad, the S\$NEER eased further in an orderly manner over the following weeks. This was facilitated by the flexibility afforded by MAS' monetary policy framework, notably the policy band. By end-March, the S\$NEER had fallen to a level slightly below the mid-point of the policy band. On 30 March, MAS announced that it would adopt a zero per cent per annum rate of appreciation of the S\$NEER policy band starting at the then-prevailing (lower or more depreciated) level of the S\$NEER. Given the magnitude of the shock in relation to Singapore's small open economy, MAS assessed that the equilibrium level of the real exchange rate had stepped down, and that the decline in the S\$NEER between late January and end-March was congruent with the weaker growth and inflation outlook. The zero per cent appreciation of the band going forward would also impart a degree of stability to the trade-weighted exchange rate.

### Credit policy

The outbreak of Covid-19 caused income and revenue streams to dry up for some households and businesses in Singapore. Consequently, many required external financing to smooth consumption or meet their continuing financial obligations. Local banks reported a sharp rise in loan applications from small and micro enterprises in the early stages of the crisis, particularly in the retail trade, food services and hospitality sectors. There was thus a need to ensure that bank credit was widely available, and at a fair cost, to avoid unnecessary insolvencies and financial hardship. To this end, MAS introduced new facilities and worked with financial institutions to reduce the hurdles for firms and individuals to access credit.

First, MAS' liquidity measures ensured the effective functioning of the domestic financial system. Singapore's financial institutions entered the crisis in a strong position, and providing banks easy access to funds better allowed them to intermediate credit to businesses and households and provide essential financial services. MAS also stepped up its provision of US dollar liquidity to the banking system when financial conditions tightened in Q1 last year. MAS increased the volume of foreign exchange swaps transacted in its daily money market operations and also established a new facility to provide up to US\$60 billion of funding, drawing on the swap line between MAS and the US Federal Reserve. These actions supported stable US dollar funding conditions in Singapore, facilitating lending to businesses in Singapore and the region.

Second, MAS collaborated with the financial industry to roll out a package of targeted measures for individuals and businesses adversely affected by Covid-19. Individuals financially affected by the virus outbreak could defer payments on residential property loans, as well as on their life and health insurance premiums. Those who suffered a loss of 25% or more of their monthly income after 1 February last year would also be eligible to convert their outstanding credit card balances to lower-interest term loans. Similarly, small and medium-sized enterprises (SMEs) were

allowed to defer principal repayment on secured loans and pay their general insurance premiums in instalments in order to improve their cash flows.

Third, in partnership with the Ministry of Trade and Industry, MAS launched a facility to lend Singapore dollars at an interest rate of 0.1% per annum for a two-year tenor to eligible financial institutions to support their lending to SMEs under the Enterprise Singapore Loan Schemes. The facility reduced the cost of funds for financial institutions and complemented the government's risk-sharing initiative to make loans to SME borrowers more affordable. As a whole, this package of measures helped ease financial conditions facing individuals and businesses and sustained the flow of credit to all sectors of the economy.

### Fiscal policy

In response to the unprecedented crisis precipitated by the pandemic, the Singapore government swiftly introduced an array of budgetary measures to mitigate the fallout on the economy. Four budgets and a ministerial statement were announced over the period of February to August 2020, amounting to nearly S\$100 billion in fiscal support, or around 20% of nominal GDP. Of this, S\$70.9 billion (14% of GDP) constituted direct fiscal injections, while S\$22 billion (4% of GDP) was earmarked as capital for loan guarantees.

About two thirds of the direct fiscal injections were dedicated to cushioning the impact of revenue losses on firms via wage subsidies and other cost-saving measures. The remaining measures provided financial assistance to vulnerable households and individuals and aimed to strengthen the security of Singapore's food and medical supplies, as well as the capacity of its public healthcare system.

A key goal of the relief measures has been to preserve jobs and forestall a sharper rise in unemployment.

- The Jobs Support Scheme (JSS) is the centrepiece of the fiscal response and provides firms with wage subsidies for local workers for 17 months until March 2021. Firms in the hardest-hit sectors, such as the travel-related industries, received higher levels of subsidies (75% for the first 10 months and 50% for the subsequent seven months). The scheme has been extended from September 2020 to March 2021 for most industries as pandemic impacts persisted.
- The SGUnited Jobs and Skills Package was rolled out as a public-private partnership to create around 100,000 new jobs (15,000 new jobs in the public sector), traineeships and training opportunities for first-time and mid-career job seekers. Under the programme, the government would pay a portion of wages and traineeship allowances for new positions created, allowing firms to continue hiring at lower wage costs. The government also subsidised course fees and provided monthly allowances for individuals who underwent training.
- More recently, the Jobs Growth Incentive was announced in August 2020. Under this initiative, the government would pay between 25–50% of the first S\$5,000 of gross wages for all new local hires for 12 months.

At the same time, the government helped households to adapt to remote work and learning during the pandemic, and provided resources to encourage businesses to transform and digitalise, taking advantage of the pandemic-driven leap in the adoption of digital technologies. For instance:

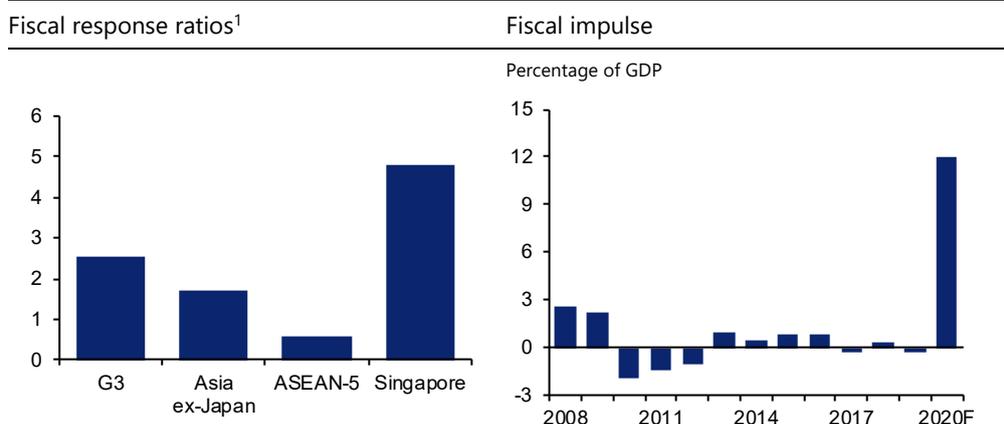
- Cash bonuses were paid to food and beverage firms and retailers that adopted digital payments and e-invoicing solutions.
- Other ready-made digitalisation solutions and funding support for their implementation were also made available to small businesses.
- Students were provided with digital learning tools to facilitate home-based learning during school closures.

## Assessing Singapore’s macroeconomic policy mix

Singapore’s macroeconomic policy mix has given due consideration to the unique characteristics of the pandemic shock. In particular, since it would not have been appropriate for macroeconomic policy to compensate fully for the contraction in private demand when public health measures were curtailing economic activity, Singapore’s response has primarily sought to preserve the productive potential of the economy by keeping workers employed and minimising firm shutdowns, using a mix of income support and credit policies.

Singapore’s fiscal response has been one of the largest globally, even after accounting for the varying size of output losses across countries (Graph 2). The fiscal impulse in 2020 is estimated to be 12.1% of GDP and represents the most expansionary fiscal policy stance on record. The composition of fiscal support measures – which mainly comprises business cost relief, as opposed to direct government expenditures – reflected the recognition that the latter might be less effective on its own due to constraints on aggregate supply.

Singapore’s fiscal response has been substantial Graph 2



<sup>1</sup> Fiscal response ratio is calculated by dividing fiscal outlays (excluding loans and guarantees) as a share of 2019 nominal GDP by the expected percentage deviation in real GDP from pre-pandemic projections at end-2021. Country groupings are weighted by 2019 PPP-adjusted GDP. G3 = JP, US, EA. Asia ex-Japan = CN, HK, IN, TW, KR, ID, MY, PH, TH, VN. ASEAN-5 = ID, MY, PH, TH, VN.

Sources: National data; World Bank; Singapore Department of Statistics; Ministry of Finance; EPG, MAS estimates.

Singapore’s monetary policy settings have supported macroeconomic stability by keeping the trade-weighted exchange rate stable and facilitating the adjustment of the real exchange rate towards a level consistent with MAS’ medium-term price stability mandate. The decline in the trade-weighted exchange rate in Q1 provided an initial buffer to the economy when the Covid-19 shock hit. This forestalled a

broadening of disinflationary pressures and helped to keep inflation expectations anchored, thereby reducing the risk of a deflationary spiral taking hold. The fall in the S\$NEER had also reduced expectations of Singapore dollar depreciation, which ensured that Singapore dollar interest rates fell in tandem with global rates. In turn, this complemented MAS' credit policies and other initiatives to keep credit accessible to firms and avoid costly defaults.

The cumulative fiscal injection so far is expected to offset the GDP contraction by some 5.6% in 2020 and 4.8% in 2021.<sup>3</sup> Correspondingly, the resident unemployment rate would have been 1.7% points higher in 2020 in the absence of these measures. A large part of this impact is attributable directly to jobs-related measures, with the JSS alone estimated to contribute 0.9% point of 1.7% points. In sum, fiscal and monetary policies are estimated to reduce domestic economic contraction by 6.7% in 2020 and 5.6% in 2021. MAS estimates that government demand will compensate for about 40% of the drag on growth in 2020 posed by the decline in private sector demand.<sup>4</sup>

However, the full impact of the overall policy mix on the economy is likely to be larger than that quantified above. The government's fiscal response has been supported by liquidity and other financial measures, which were not directly accounted for in the estimates above. These measures helped to avert a credit crunch that would have exacerbated the initial income shock. Also, the estimates of fiscal policy impacts conservatively employed multipliers conditioned on historical relationships, and there are reasons to believe that the fiscal multiplier during the Covid-19 pandemic may be larger than usual. Cross-border leakage, which typically tempers fiscal impacts in Singapore's small open economy, will be reduced by the closure of borders to outbound tourism. Moreover, the size of the output gap that has opened up diminishes scope for crowding-out effects from public spending.

Broadly, the mix of macroeconomic policies put in place is likely to have alleviated the scarring effects of the Covid-19 shock on Singapore's growth potential over the longer term. Saving jobs and preserving firms' capabilities are a critical part of ensuring that ongoing restructuring efforts have the requisite base of skills and capacity to develop the engines of future growth.

### The next phase of Singapore's Covid-19 response

Potential side effects of unsustainable public debt accumulation from the large fiscal outlay are a less pressing concern for Singapore because the government has been able to finance its response to the crisis by drawing on past fiscal surpluses. With the recovery under way, fiscal policy in Singapore has increasingly turned from the exigencies of the crisis towards enabling the structural changes required for the transition to the post-pandemic economy. The government will continue to partner with the private sector in pursuing the transformation initiatives that were in place before the pandemic, in order to promote higher value-added, technology-intensive production processes, inclusive growth and broader labour market engagement.

<sup>3</sup> Estimates from MAS' Monetary Model of Singapore. These estimates are expressed as percentage deviations from a baseline level of real GDP.

<sup>4</sup> This estimate excludes residential investment as the breakdown of the contribution between public and private residential investment is unavailable.

## Conclusion

As global economies recover from Covid-19 impacts, the immediate challenge for policymakers is to devise ways of sustaining support until the recovery gains traction, while managing the fiscal sustainability and financial stability risks that come with rising debt burdens.

Despite recent breakthroughs in vaccine development, it will take until the second half of 2021 before widespread immunity is achieved (and possibly longer in EMEs). The wave of infections that forced several European countries back into lockdowns at the beginning of this year underscores the considerable uncertainty that remains over the near-term outlook. Thus, there is a continuing need for support to prevent negative feedback effects from rising firm closures and insolvencies from derailing the recovery.

However, in extending support to deal with a protracted recession, policymakers will have to contend with unintended side effects from rising fiscal expenditures that could impinge on the eventual recovery. It would be unwise to place our faith in  $r - g$  staying negative over the long term: monetary policy alone cannot sustainably raise  $g$ , and there are limits to fiscal capacity that monetary policy cannot obviate. Stretched government balance sheets mean that the risk premium embedded in the government borrowing rate  $r$  could become more sensitive to fears over sovereign solvency or the perceived loss of central bank credibility, particularly for EMEs. As such, further fiscal support should be measured and targeted, with the level of support adjusted as economic activity normalises (Menon (2020)).

Singapore's considerable fiscal space, accumulated from a consistent history of medium-term budget surpluses, has enabled it to mount a prompt and aggressive fiscal response to the pandemic without drawing on future tax revenues or an increase in public debt. Nevertheless, it remains important for Singapore to shift the weight of its policy response from providing short-term income support towards encouraging businesses and workers to prepare for the post-pandemic economy. The pandemic has accelerated several long-term trends, including increased digitalisation of production processes and remote work. This creates substantial scope for pro-growth budgetary measures to support the private sector in generating complementary streams of productive investment – new technologies, complementary human capital and capable infrastructure – that will underlie longer-term sustainable economic growth. These considerations should take centre stage in fiscal policy design as we move towards the latter stages of the Covid-19 episode.

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