

Assessment of the Impact of Key COVID-19 Budget Measures

20

22

EXECUTIVE SUMMARY

1. As with past crises, the COVID-19 pandemic has both sharp short-term impact and longer-term implications on the Singapore economy.
2. This MOF Occasional Paper builds on the interim report¹ published in February 2021, and assesses how the COVID-19 measures in the Budgets of FY2020 and FY2021 mitigated the short-term impact of the COVID-19 crisis, and helped prevent potential longer-term economic scarring.
3. The Budget measures across FY2020 and FY2021 were designed to retain capabilities (in firms, workers, and students), and to enable a quicker recovery. The earlier measures were designed to put a floor below business failures, unemployment, and output loss. With each successive Budget and as the economy gradually re-opened, the measures became more focused on encouraging hiring, business restructuring and skills upgrading.
4. The Budget measures over 2020 and 2021, buttressed by accommodative monetary policy, supported Singapore's real GDP growth by 6.6 percentage points and 0.8 percentage points in 2020 and 2021 respectively. Further, it is estimated that without fiscal and monetary policy support, the resident unemployment rate would have hit 6.1% in 2020 and 7.5% in 2021, 2 percentage points and 4 percentage points higher than the actual respective rates. These Budget measures kept businesses going and preserved jobs for local workers, helping more families through the crisis.
5. Singapore's public health measures and concerted efforts to vaccinate a very high proportion of the population are estimated to have averted about 8,000 deaths due to COVID-19 between 1 August 2021 and 31 December 2021. At 15.7 deaths per 100,000 population (as at 30 January 2022), Singapore's COVID-19 mortality rate is among the lowest in the world.

¹ The Ministry of Finance published a paper titled "An Interim Assessment of the Impact of Key COVID-19 Budget Measures", which took stock of the Budget measures in 2020 and provided a preliminary analysis of how the measures helped to reduce business costs, save jobs and support families.

6. A deeper analysis of the outcomes of key Budget measures shows how the measures, individually and collectively, worked effectively in achieving their objectives. Against comparable advanced economies, preliminary analysis shows that Singapore has:
 - a. Reduced the loss to potential output. With workers remaining in employment and businesses continuing to operate, the economy was able to bounce back when demand conditions improved and the public health situation permitted;
 - b. Experienced limited increases in corporate debt. In addition, unlike most governments, Singapore was able to fund its large fiscal support package through past budget surpluses and a draw on Past Reserves;
 - c. Continued to expand resident employment, as workers were helped in retaining their capabilities and transiting into new jobs;
 - d. Maintained the job prospects of recent graduates from the various institutes of higher learning;
 - e. Minimised the loss of schooling hours by keeping schools physically open and ensuring digital access for home-based learning during the relatively short period of school closure; and
 - f. Mitigated the distributional impact of the pandemic across the population.
7. These findings suggest that Singapore has largely avoided longer-term scarring from COVID-19 and is poised to continue its recovery. In addition to the broader outcomes, individual support schemes sought to target specific segments and needs, and this report provides further detailed analysis of the impact of the key schemes.
8. This crisis is not yet over. The Government will continue to monitor longer-term implications and outcomes. The current focus remains to manage the risks from new variants, continue to reopen the economy safely, and learn to live with the virus.

CONTENTS

01	INTRODUCTION	5
02	PROGRESS OF ECONOMIC RECOVERY	7
03	NEAR-TERM OUTCOMES: IMPACT ON THE MACROECONOMY AND HEALTH	10
04	LONGER-TERM OUTCOMES: IMPACT ON ECONOMIC SCARRING AND LOSS OF HUMAN CAPITAL	20
05	IMPACT EVALUATION OF KEY SUPPORT SCHEMES	34
06	CONCLUDING REMARKS	58

INTRODUCTION

01

1.1 The COVID-19 pandemic, like any other crisis, can have both short- and longer-term effects on the economy, workers, and individuals. However, it is different from past crises in its severity, duration, geographical spread, complexity, and impact on health. The world economy experienced its worst contraction since the Second World War. Even as we transit to living with the virus, we continue to grapple with considerable uncertainties, which are made more complex by the interactions between health and the economy.

1.2 In the initial stages of the pandemic, the priority of government intervention was to limit the impact of the large demand and supply shocks to the economy, even while decisive public health measures were taken to contain the virus. The simultaneous shutdown in global economic activities was unprecedented. Without the large fiscal support rolled out by major advanced economies, the economic and financial fallout would have been much worse. Even with the tremendous fiscal and monetary policy support, global real Gross Domestic Product (GDP) fell by 3.1%¹ in 2020.

1.3 The crisis will likely have a lasting impact on the world – economies, workers, individuals, and societies. As economic activity was constrained for a prolonged period, some intangible capital will have been lost owing to firm closures and diminished opportunities for individuals to build human capital, which in turn will affect their career prospects.

1.4 Singapore too introduced a series of fiscal, monetary, labour market, social and public health measures to fight the virus and contain its damage. In February 2021, the Ministry of Finance (MOF) released a report “An Interim Assessment of the Impact of Key COVID-19 Budget Measures”. As the crisis was still unfolding, the interim report provided a snapshot of the immediate impact of key measures such as payouts disbursed to firms and households, as well as support given to workers and fresh graduates to help them at the height of the pandemic.

¹ International Monetary Fund (IMF) World Economic Outlook, January 2022.

1.5 As we emerge from the second year of the fight against COVID-19, we have learnt more about the virus and about the effectiveness of policy responses. The COVID-19 Budget measures through 2021 were each targeted at different groups as well as the economy as a whole, and culminated in support for all segments of the Singapore economy and society, reducing potential negative spillovers and addressing various longer-term issues.

1.6 This Occasional Paper builds on the interim report to provide an assessment of the impact of Singapore's COVID-19 response on broader economic and social outcomes. A longer period of observation and collation of more detailed data will allow for a deeper analysis of the fuller effects of the measures as they work through the economy, as well as present the opportunity for causal inference studies of the impact of specific schemes.

1.7 The outline of the paper is:

- a. Section 2 reports on the progress of the economic recovery globally and in Singapore.
- b. Section 3 assesses the immediate effects of COVID-19 by examining near-term macroeconomic and health outcomes in Singapore.
- c. Section 4 gives a preliminary assessment of how the Government's measures helped to avoid longer-term economic scarring, loss of human capital, and widening inequality.
- d. Section 5 details the impact of several key support programmes, including the Jobs Support Scheme (JSS), various financing schemes, the SGUnited Jobs and Skills (SGUJS) Package, and the COVID-19 Recovery Grant (CRG).

PROGRESS OF ECONOMIC RECOVERY

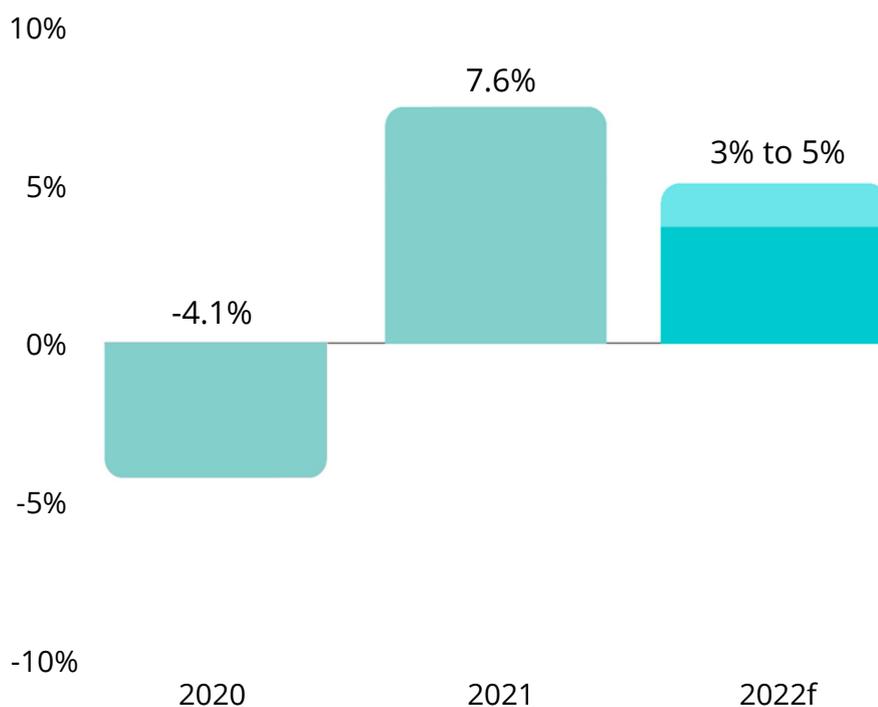
02

2.1 The recovery from COVID-19 has been uneven across economies. Advanced economies that were able to vaccinate their populations and ease public health measures earlier saw faster growth in 2021. Several emerging economies conversely saw a weaker recovery, punctuated by multiple waves of virus outbreaks.

2.2 The Singapore economy recovered and surpassed pre-COVID-19 output levels by the end of 2021. However, the recovery was uneven among sectors. Outward-oriented sectors saw strong growth in 2021, supported by robust external demand from advanced economies. By contrast, aviation and tourism are still operating significantly below capacity, and are projected to recover only moderately in 2022. As a whole, the Singapore economy grew by 7.6% in 2021, reversing the 4.1% fall in 2020, and is projected to grow by 3% to 5% in 2022 ([Figure 1](#)).

Singapore's Real GDP Growth

FIGURE 1

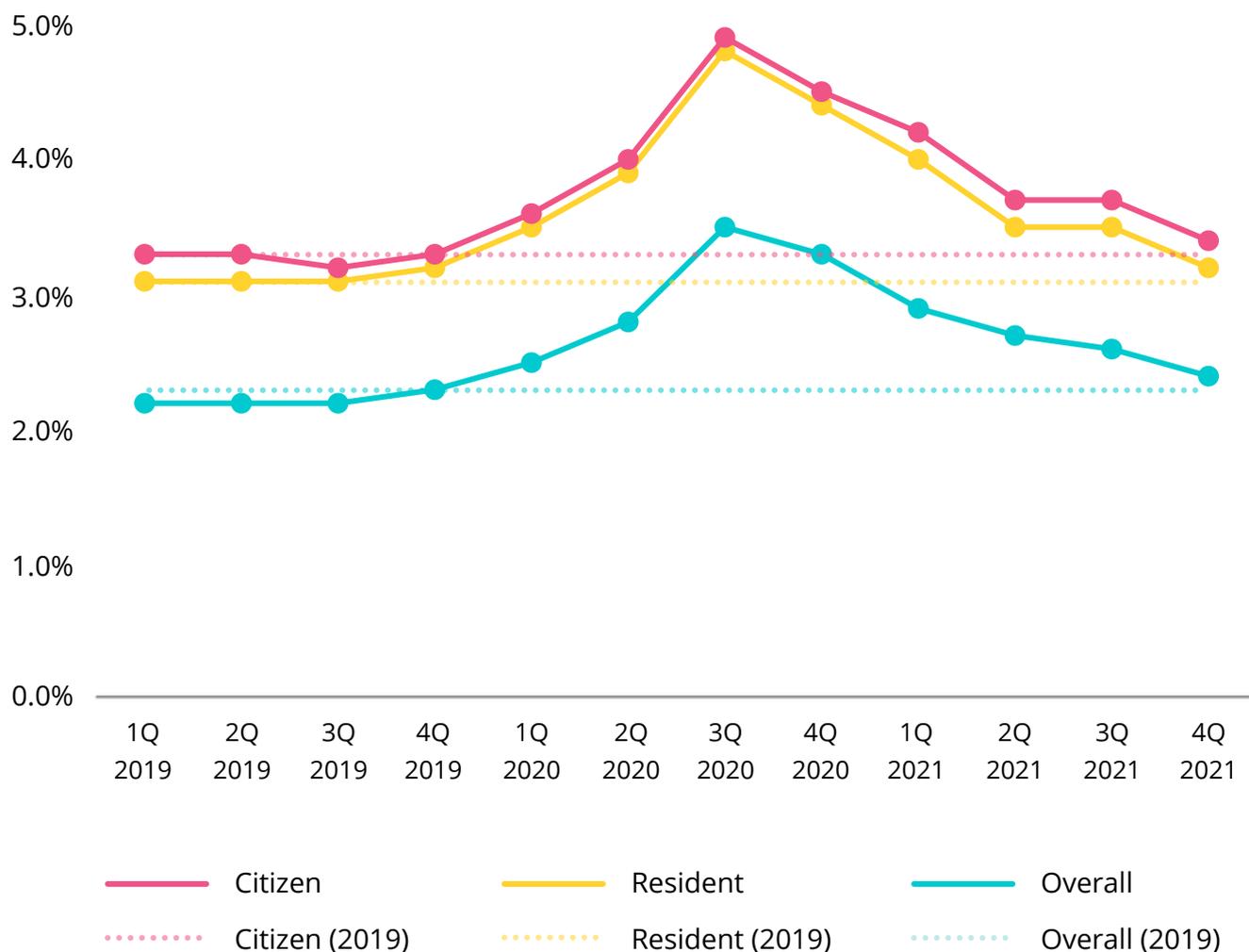


Source: Ministry of Trade and Industry (MTI)

2.3 The labour market is also on a steady path to recovery. The resident unemployment rate has declined from its peak in 3Q 2020, to slightly above 2019 levels in 4Q 2021 (Figure 2). This trend is expected to continue, and the unemployment rate is expected to fall further to pre-pandemic levels by 2022.

Singapore's Unemployment Rates (Seasonally Adjusted)

FIGURE 2

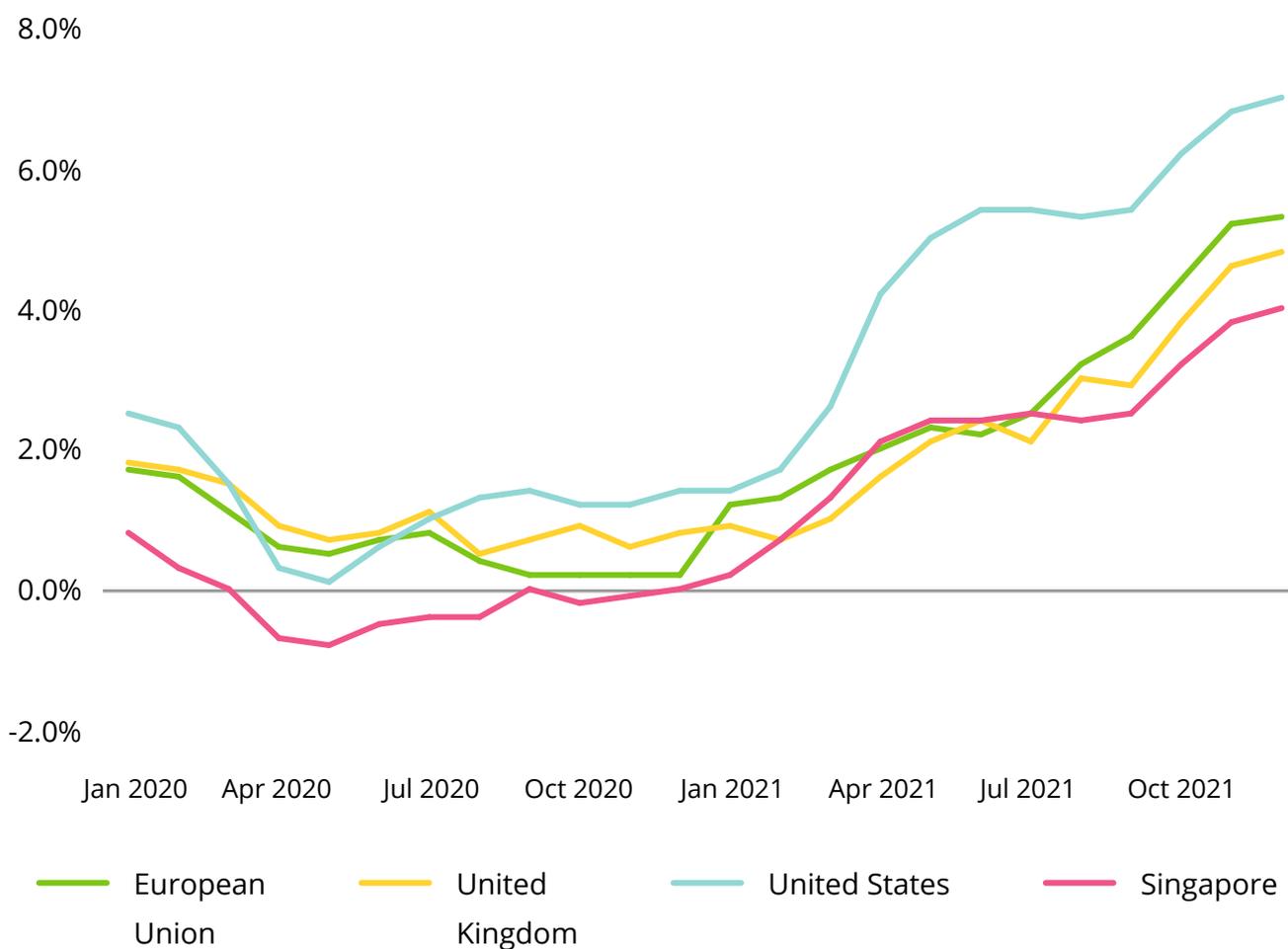


Source: Ministry of Manpower (MOM)

2.4 Nonetheless, there remain uncertainties and risks in the global economic environment. First, virus mutations could lead to the resurgence of the pandemic and pose a setback to global recovery with uneven impact across different economies and sectors. Second, inflation may persist, fuelled by supply-demand mismatches arising from pandemic-related disruptions, and supply side shocks in global commodity markets, leading to tightening monetary conditions during a fragile recovery (Figure 3).

Inflation Rate, in 2020 and 2021

FIGURE 3



Sources: Singapore Department of Statistics (DOS) and the Organisation for Economic Co-operation and Development (OECD)

3.1 At the start of the crisis, the Government mounted a swift fiscal response that was unprecedented in magnitude. The initial objective was to protect lives, and preserve jobs and key capabilities. This section looks at the immediate effects by examining near-term macroeconomic and health outcomes in Singapore.

3.2 In summary, these measures have:

- a. Cushioned the impact on economic growth and the labour market; and
- b. Kept the COVID-19 death rate in Singapore low.

Impact on GDP and Unemployment

3.3 The significant fiscal support in FY2020 helped put a floor under the crisis and averted a deeper economic crisis in 2020. The initial Budget response was tilted towards supporting businesses on cashflow, costs and credit to mitigate large demand and supply shocks. These include the broad-based JSS to preserve jobs and key corporate capabilities, as well as financing schemes to support businesses with cashflow and alleviate firm distress. [Figure 4](#) is a stylised representation of this.

Timeline of Budget Responses to COVID-19

FIGURE 4



Source: MOF

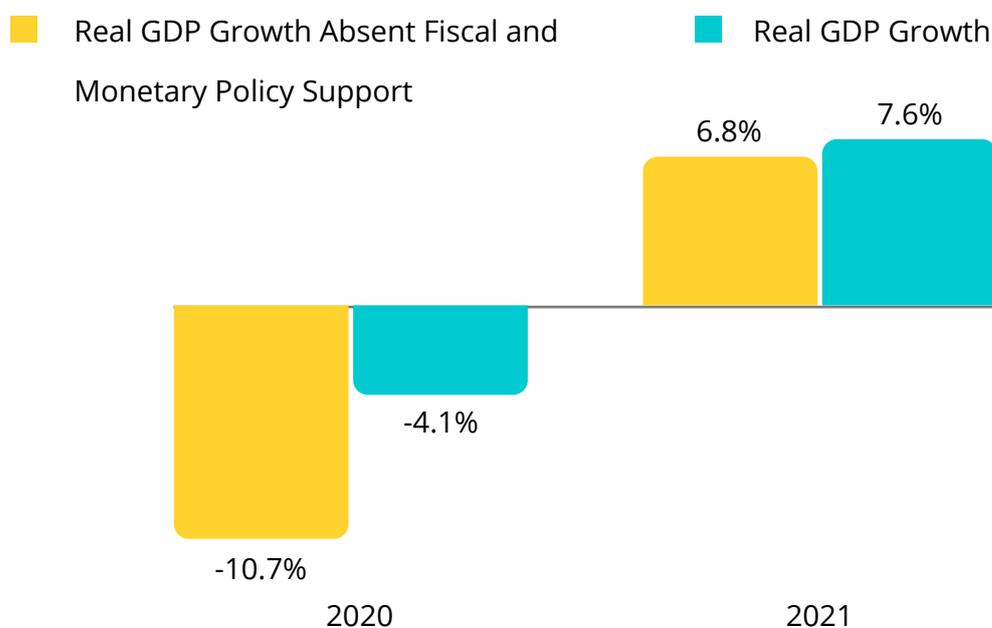
3.4 As the economy reopened after the Circuit Breaker² in 2020, fiscal support was tapered and the Government pivoted towards measures to facilitate restructuring and transformation. Sectors that continued to be badly hit by the pandemic received ongoing government support through tiered JSS and sector-specific schemes. More weight was placed on fiscal measures that bolstered local labour demand and helped displaced workers enter growth sectors to prevent long-term scarring in the labour market. These included the SGUJS Package that kept locals in the workforce, and helped fresh graduates entering the job market during the pandemic. The Jobs Growth Incentive (JGI) scheme encouraged firms to bring forward hiring plans, with support tilted toward vulnerable workers.

² The Circuit Breaker spanned a period of eight weeks, from 7 April 2020 to 1 June 2020.

3.5 In the interim report released in February 2021, fiscal measures in Budget 2020 and monetary policy were estimated to have jointly supported GDP growth by 6.6 percentage points (pp) in 2020; further, without policy support, the resident unemployment rate would have been 2pp higher. This stimulus is expected to have continued into 2021 because (i) some Budget 2020 measures were disbursed in 2021, and (ii) there are lags in the transmission of fiscal policy to the economy. An updated analysis from the Monetary Authority of Singapore (MAS) taking into account the combined impact of Budgets in 2020 and 2021 suggests that the discretionary fiscal measures and monetary policy together supported GDP growth in 2021 by 0.8pp (Figure 5).

Combined Fiscal (Budgets 2020 and 2021) and Monetary Policy Impact on Singapore’s Real GDP Growth in 2020 and 2021

FIGURE 5



Sources: MAS estimates, MTI

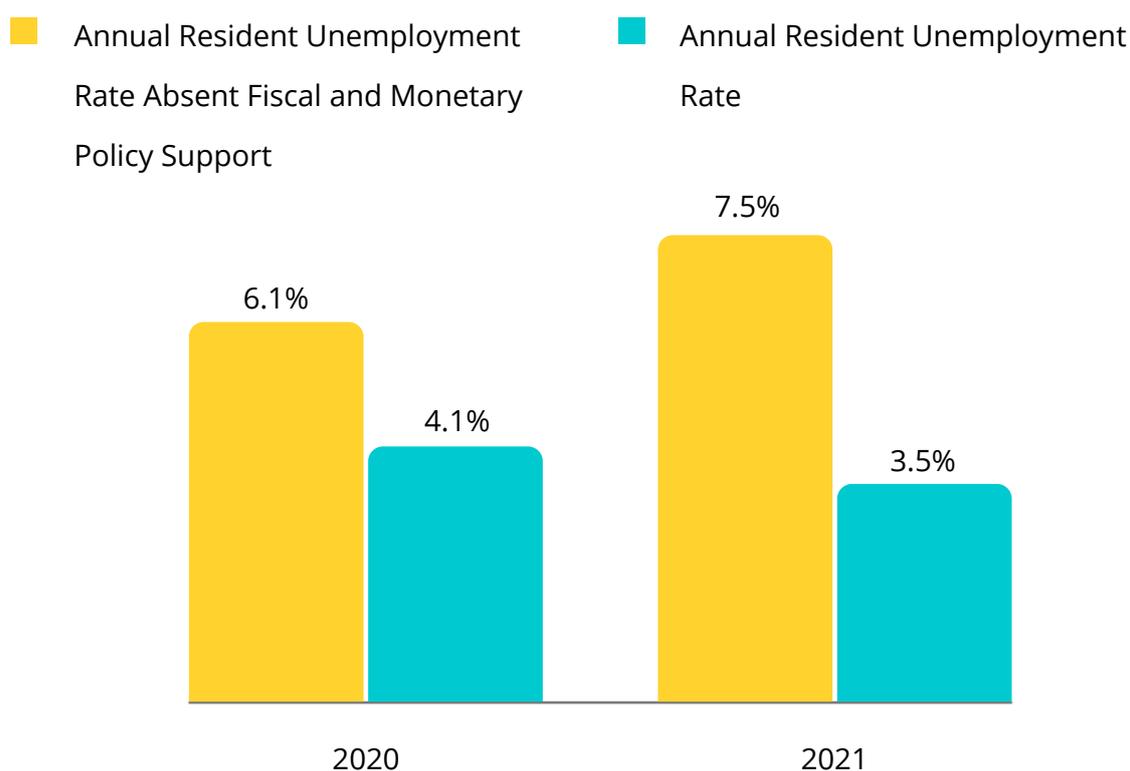
3.6 Model estimates indicate that without the combined package of fiscal and monetary policy support, the resident unemployment rate would have reached 6.1% in 2020, well above the outturn of 4.1%. The combined support also mitigated the increase in the resident unemployment rate in 2021 (Figure 6). In the absence of these policy measures, it is estimated that the resident unemployment rate would have reached 7.5% in 2021, 3.4pp higher than the annual average of 4.1% in 2020. A combination of JSS and JGI (1.2pp), other fiscal measures (2.5pp) and monetary policy (0.4pp) helped to deliver an annual average resident unemployment rate of 3.5% in 2021.³

³ Based on preliminary estimates in MOM’s Labour Market Advance Release 2021 (published on 28 January 2022).

3.7 In short, support measures had a positive impact on labour market outcomes. With more local workers remaining employed than otherwise, the measures also mitigated the potential loss of human capital and helped more workers and their families through the crisis.

Combined Fiscal (Budgets 2020 and 2021) and Monetary Policy Impact on Singapore’s Resident Unemployment Rate in 2020 and 2021

FIGURE 6



Sources: MAS estimates, MOM

3.8 Besides support to firms and labour markets, the Government supported Singaporean households at the height of the crisis through household support like the Solidarity Payment. There was additional assistance to individuals severely affected by the crisis such as the COVID-19 Support Grant (CSG) and Workfare Special Payment. As Singapore emerged from the depths of the crisis and adapted to the new normal, the fiscal support transitioned to more targeted support for individuals and households who still needed help.

Impact of Singapore’s Public Health Response

3.9 Singapore’s public health response has kept its COVID-19 death rate low throughout the pandemic, even as it faced new variants and waves.

3.10 Until August 2021, Singapore’s COVID-19 deaths were kept low primarily through Safe Management Measures and border restrictions. This allowed the Government to buy time to vaccinate the population.

3.11 The extensive and rapid rollout of Singapore’s vaccination programme played a crucial role in its transition towards living with COVID-19. Having one of the highest vaccination rates in the world enabled Singapore to keep its COVID-19 death rate low (Figure 7), and facilitated a safe and progressive reopening of the economy over the course of 2021. It has also enabled Singapore to ride through the ongoing Omicron wave without having to tighten restrictions.

COVID-19 Deaths Per 100,000 Population and Vaccination Rate, 30 January 2022

FIGURE 7

Economy	COVID-19 Deaths Per 100,000	Fully Vaccinated Per 100
Hong Kong	2.8	63.7
South Korea	13.2	85.8
Japan	14.9	79.1
Singapore	15.7	87.8
Israel	93.9	65.6
Germany	140.4	73.3
United Kingdom	228.5	71.0
United States	265.8	63.6

Source: Our World in Data

Note: The number of fully vaccinated per 100 refers to the population that received a single-dose vaccine or both doses of a two-dose vaccine.

3.12 Estimates from the Ministry of Health (MOH) indicate that vaccinations reduced the risks of hospitalisation, severe illness, and death to between 1/8th and 1/12th of those faced by an unvaccinated person, in line with international studies. These estimates suggest that between 1 August 2021 and 31 December 2021, when Delta variant infections peaked in Singapore, vaccines averted about 8,000 deaths, 33,000 severe cases and 112,000 hospitalisation episodes (Feature A).

3.13 While the vaccination programme has allowed Singapore to mitigate the extent of adverse outcomes thus far, the threat of new variants remains. Singapore's high vaccination rate and the rollout of the vaccine booster programme would help to mitigate COVID-19 deaths even as the country faces new waves from future variants. The Government has also increased its stock of therapeutics, which will also help in managing the effects of COVID-19.

Feature A: Analysis on Averted Hospitalisations, Severe Disease, and Deaths from Vaccination

MOH analysed the effect of vaccinations in averting various outcomes (hospitalisation, severe incidence of COVID-19, and death) during the recent peak in infections from 1 August 2021 to 31 December 2021. This was done by constructing a counterfactual on the level of outcomes in the absence of vaccinations, using (a) local estimates of vaccine effectiveness, and (b) actual age-specific differences in outcomes between vaccinated and unvaccinated COVID-19 patients.

a. Local estimates of vaccine effectiveness

A local cohort study of confirmed COVID-19 patients and their household contacts found that unvaccinated contacts were more likely to be infected than vaccinated contacts, with complete vaccination providing a vaccine effectiveness of 56.4% against infection (95% confidence interval 32.6% - 75.8%).⁴

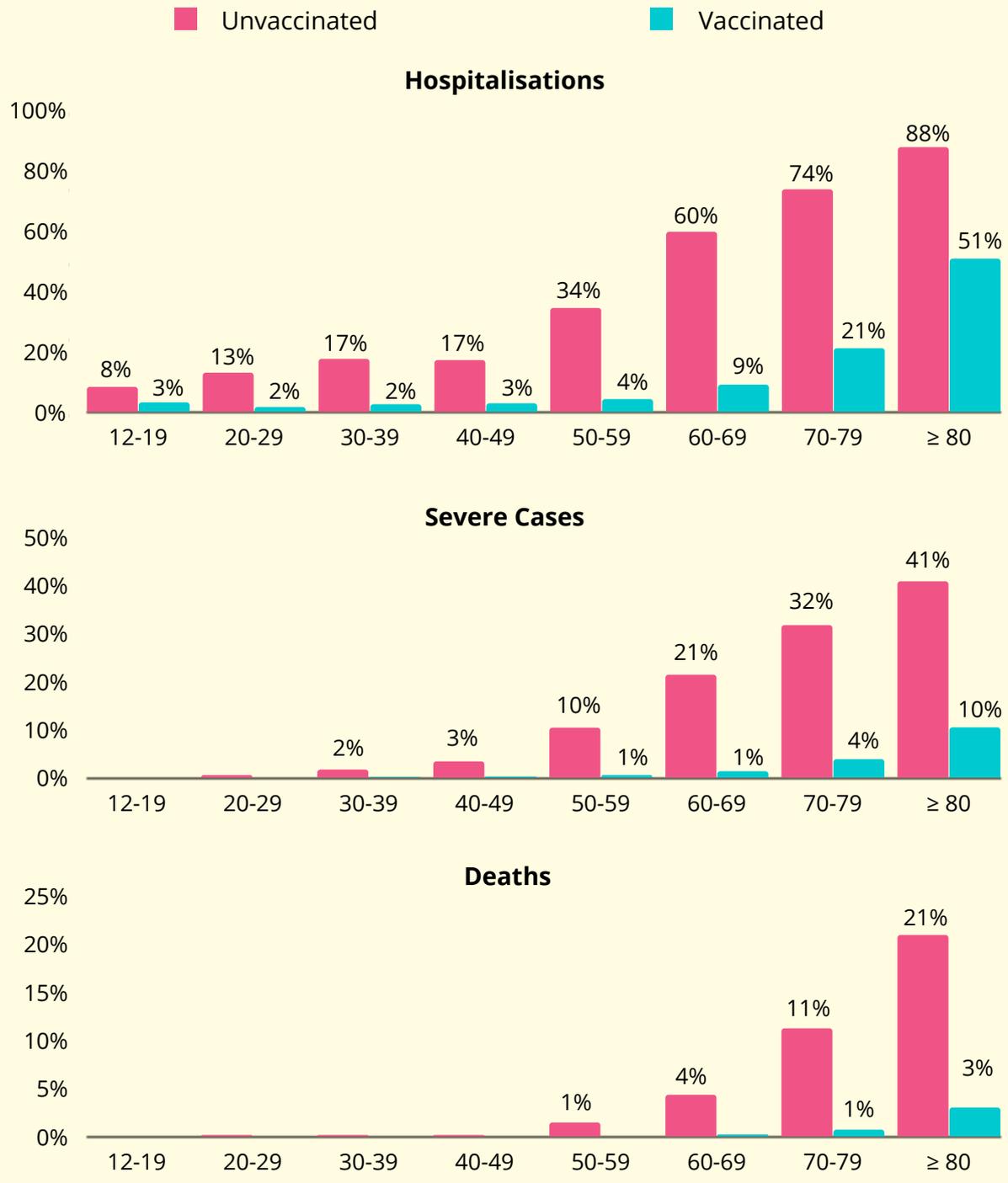
b. Age-specific outcomes among COVID-19 patients

Data show that vaccines conferred protection against severe disease among those who had contracted COVID-19. Among confirmed COVID-19 cases aged 12 and above that were reported between 1 August 2021 and 31 December 2021, fully vaccinated individuals had substantially lower rates of hospitalisations, severe disease, and deaths compared to unvaccinated COVID-19 patients ([Figure A1](#)).

⁴ Ng, O. T., Koh, V., Chiew, C. J., Marimuthu, K., Thevasagayam, N. M., Mak, T. M., Chua, J. K., Ong, S. S., Lim, Y. K., Ferdous, Z., Johari, A. K., Chen, M. I.-C., Maurer-Stroh, S., Cui, L., Lin, R. T., Tan, K. B., Cook, A. R., Leo, P. Y.-S., & Lee, P. V. (2021). Impact of Delta Variant and Vaccination on SARS-CoV-2 Secondary Attack Rate Among Household Close Contacts. *The Lancet Regional Health - Western Pacific*, 17, 1-8.

Rates of Hospitalisation, Severe Cases, and Deaths Among Confirmed COVID-19 Patients by Age and Vaccination Status

FIGURE A1



Source: MOH

Notes: An individual is considered vaccinated if it has been at least 14 days since the individual has received two doses of vaccines from Pfizer-BioNTech/Comirnaty, Moderna, Sinovac-Coronavac or Sinopharm on the day they were notified of their COVID-19 positive status. Otherwise, the individual is considered unvaccinated.

To simulate the number of hospitalisations, severe cases, and deaths if vaccines were unavailable, MOH used both the local estimates of vaccine effectiveness, and age-specific differences in outcomes between the vaccinated and unvaccinated COVID-19 cases reported between 1 August 2021 and 31 December 2021.

Simulation results in [Figure A2](#) indicate that without vaccines, Singapore would have experienced:

- a. More than 2 times the number of COVID-19 cases;
- b. More than 8 times the number of hospitalisations episodes; and
- c. More than 11 times the number of severe cases and deaths.

Estimated Impact of Vaccinations in Averting Hospitalisations, Severe Cases, and Deaths Due to COVID-19 Between 1 August 2021 and 31 December 2021

FIGURE A2

Total Cases	Actual	Without Vaccination	Difference
Total Cases	198,361	436,475 (2.2x)	238,114
Total No. of Hospitalisation Cases	15,472	127,170 (8.2x)	111,698
Total No. of Severe Cases (Oxygen Supplementation, ICU Admission or Death)	3,003	35,724 (11.9x)	32,721
Total Deaths	785	8,778 (11.2x)	7,993
Total Life Years Lost	9,218	143,102 (15.5x)	133,884

Source: MOH

Note: Figures in parentheses indicate the simulated values as a multiple of actual outcomes.

In total, these estimates indicate that vaccination helped avert close to 8,000 deaths and 134,000 life-years lost between 1 August 2021 and 31 December 2021. These estimates likely underestimate the benefits of vaccination, as they do not factor in the effect of vaccinations in reducing the chain of transmission and the likelihood of worse mortality outcomes if healthcare facilities had to manage a significantly higher caseload.

OUTCOMES: IMPACT ON ECONOMIC SCARRING AND LOSS OF HUMAN CAPITAL

4.1 Beyond the immediate impact on health and the economy, the pandemic also poses longer-term risks to the economy, as firms and individuals face diminished opportunities to preserve and build intangible capital. This section looks at various measures to assess how Singapore may have fared in terms of limiting economic scarring. Where possible, the analysis will include comparable economies.

4.2 In summary, Singapore:

- a. Reduced the loss to potential output;
- b. Experienced limited increases in corporate and government debt;
- c. Continued to expand resident employment;
- d. Maintained the job prospects of recent graduates from the various institutes of higher learning;
- e. Minimised the loss of schooling hours by keeping schools physically open for most of the period; and
- f. Mitigated the distributional impact of the pandemic across the population.

4.3 The support measures were designed to meet specific needs, but they also worked together to achieve these broader outcomes. It is important to note that this is a preliminary analysis as many of these effects are long-lasting. The Government will continue to monitor these outcomes as it evolves its measures.

Impact on Potential Output

4.4 The large and sudden demand and supply shocks arising from COVID-19 in 2020 and continued into 2021 exerted significant stresses on firms and individuals. Schemes such as the JSS and the Financing Schemes provided wage and loan support to workers and employers, to ensure that capabilities were retained even while demand was weak. These measures sought to tide workers and firms over the worst of the crisis while maintaining a strong footing to enable them to seize the opportunities to recover faster when demand returns.

4.5 Channelling an equivalent amount of funds directly to workers instead of through the JSS could have been an alternative. However, the transmission mechanism and effects on the preservation of corporate and economic capabilities would have been different. With schemes such as JSS, workers were supported through continued employment (which had both monetary and psychological benefits). They could continue to build upon their capabilities even while demand was weak. Those who lost their jobs or a significant amount of their income could apply for the COVID-19 Support Grant and subsequently the COVID-19 Recovery Grant, and benefit from the SGUnited Jobs and Skills Package.

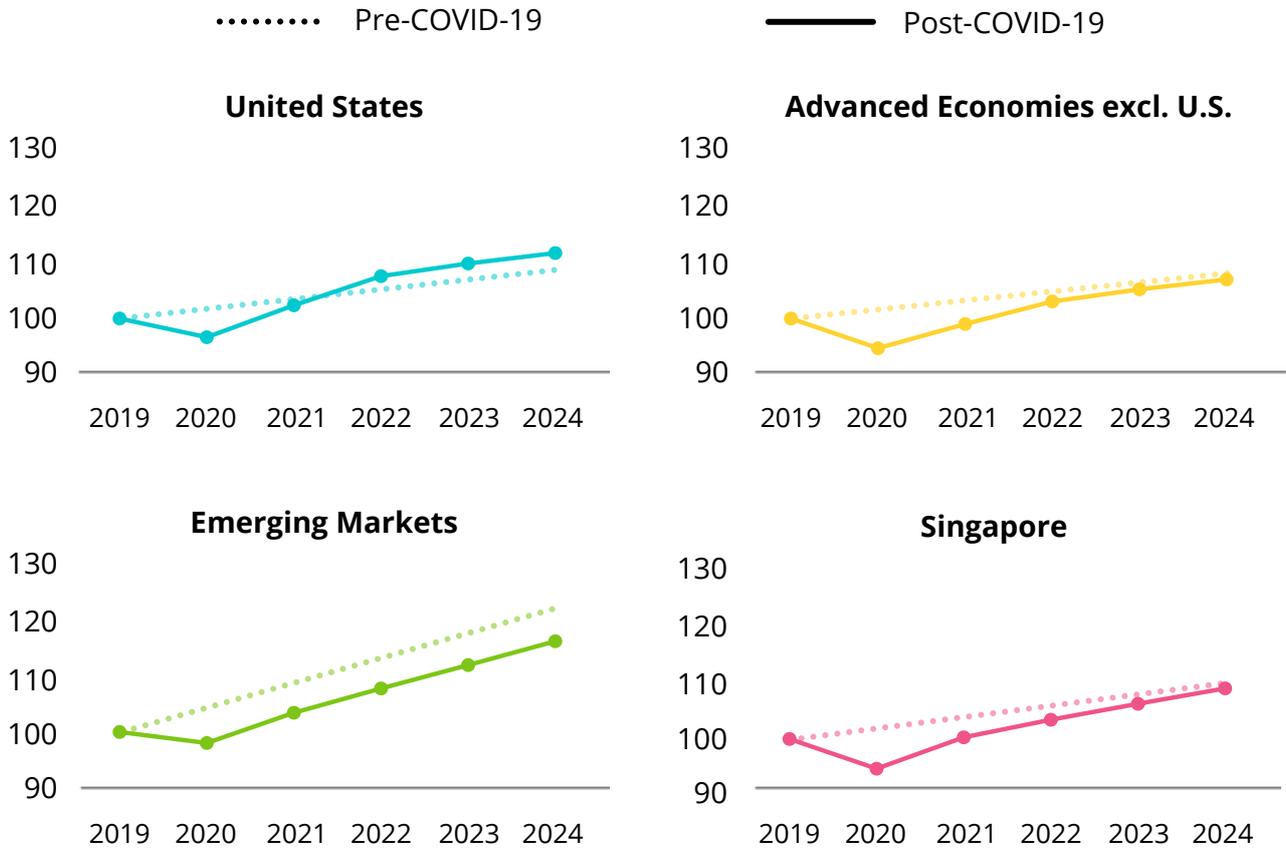
4.6 By staying in business, the corporate sector was able to retain its capabilities and bounce back quicker when external demand conditions and the public health situation permitted.

4.7 In assessing economies' recoveries, it is illustrative to consider the "output shortfall", which is the gap between the level of GDP at a point in time and its forecasted level made before the pandemic struck. As a result of the Government's economic support measures, Singapore is on track to close its output shortfall in 2022 based on the IMF's October 2021 forecast ([Figure 8](#)), similar to the major advanced economies. Nevertheless, the aviation and tourism sectors will take a longer time to recover to their pre-COVID-19 output levels given the more measured re-opening of travel in Asia.

4.8 For emerging markets, lower state support, slower vaccine rollout and stretched state capacity meant that they are expected to incur a lasting loss in output, relative to the trajectory that was projected before the pandemic.

Projected Output Path Before and After COVID-19, Index (2019 = 100)

FIGURE 8



Source: IMF World Economic Outlook, October 2019 and 2021

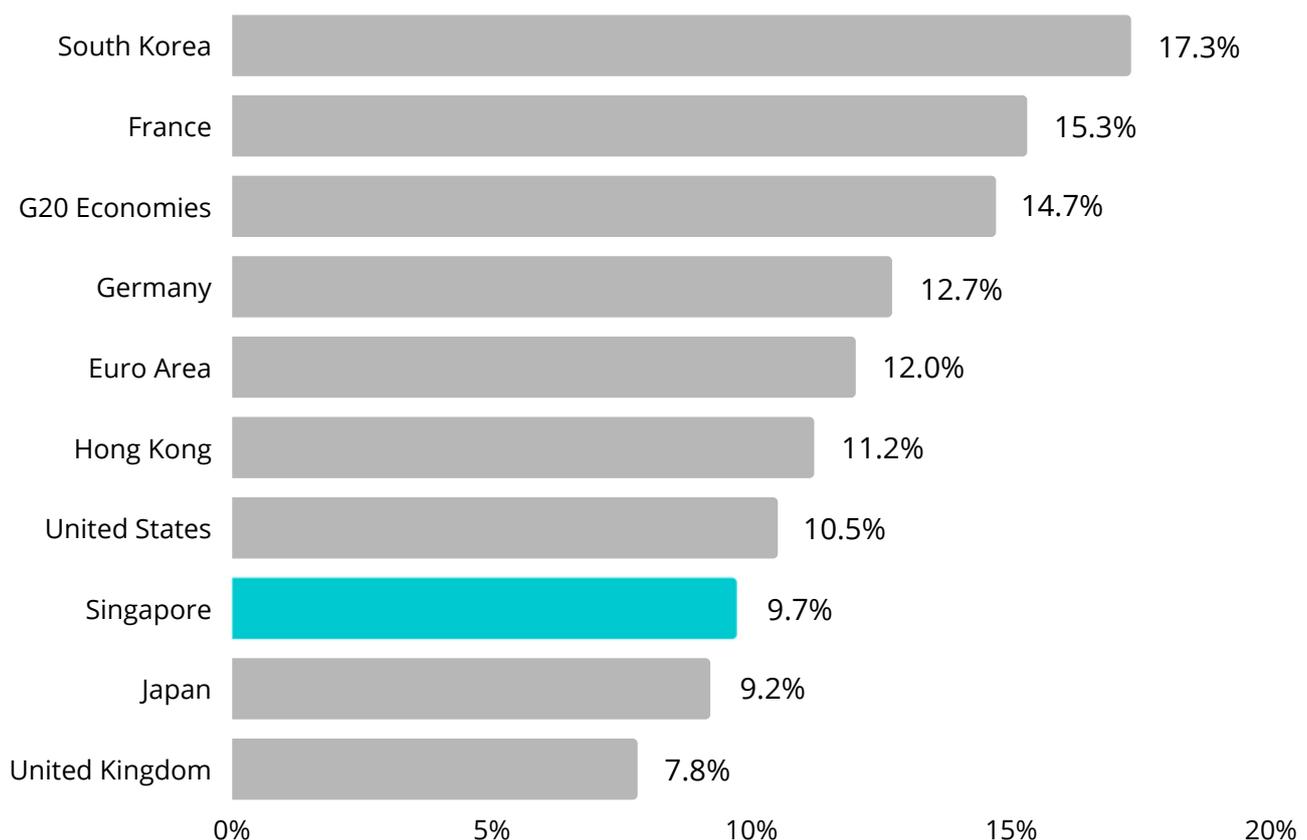
Impact on Corporate Debt

4.9 As demand for liquidity and credit spiked during the pandemic, many economies saw higher levels of corporate debt. High debt levels and the possibility of rising interest rates, whether in the corporate sector or government balance sheet, will result in higher debt servicing costs that curtail investments and consumption, thus weighing on future growth. High indebtedness also increases vulnerabilities to sudden financial shocks.

4.10 In Singapore, the debt level of the non-financial corporate sector rose modestly compared to many developed economies (Figure 9). Further, the overall ratio of non-performing loans among commercial banks in Singapore remained fairly stable throughout the crisis (Figure 10). Stress-testing by MAS has shown that Singapore’s corporate and financial sectors would remain relatively resilient against economic and financial shocks. Non-financial corporates generally have adequate buffers to mitigate the impact of a sharp decline in earnings as well as higher cost of financing. Banks would also have adequate capital buffers to withstand the shocks under such adverse scenarios, to continue to meet the credit needs of businesses and households.⁵

Change in Market Value of Credit to the Non-Financial Corporate Sector Between 4Q 2019 and 2Q 2021

FIGURE 9



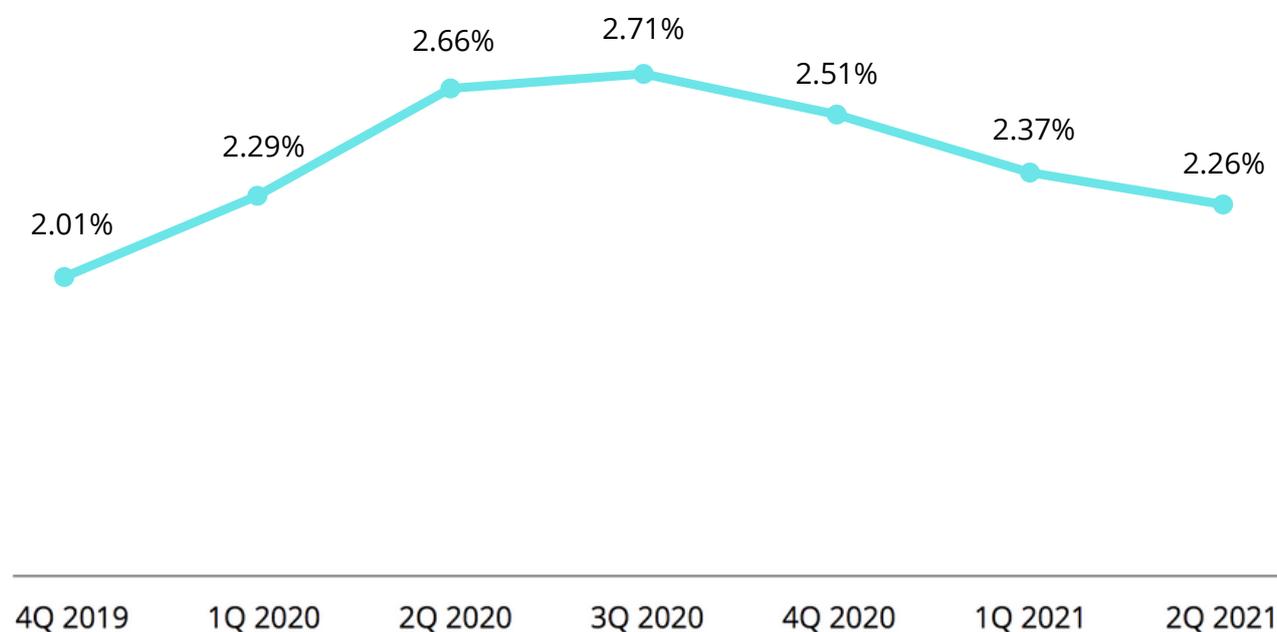
Source: Bank for International Settlements

Note: Changes are computed using the USD market value of credit provided to non-financial corporations between 4Q 2019 and 2Q 2021.

⁵ For further details, please see MAS’ Financial Stability Review 2021 (Sections 2 and 4).

Non-Performing Loans Ratio Among Commercial Banks

FIGURE 10



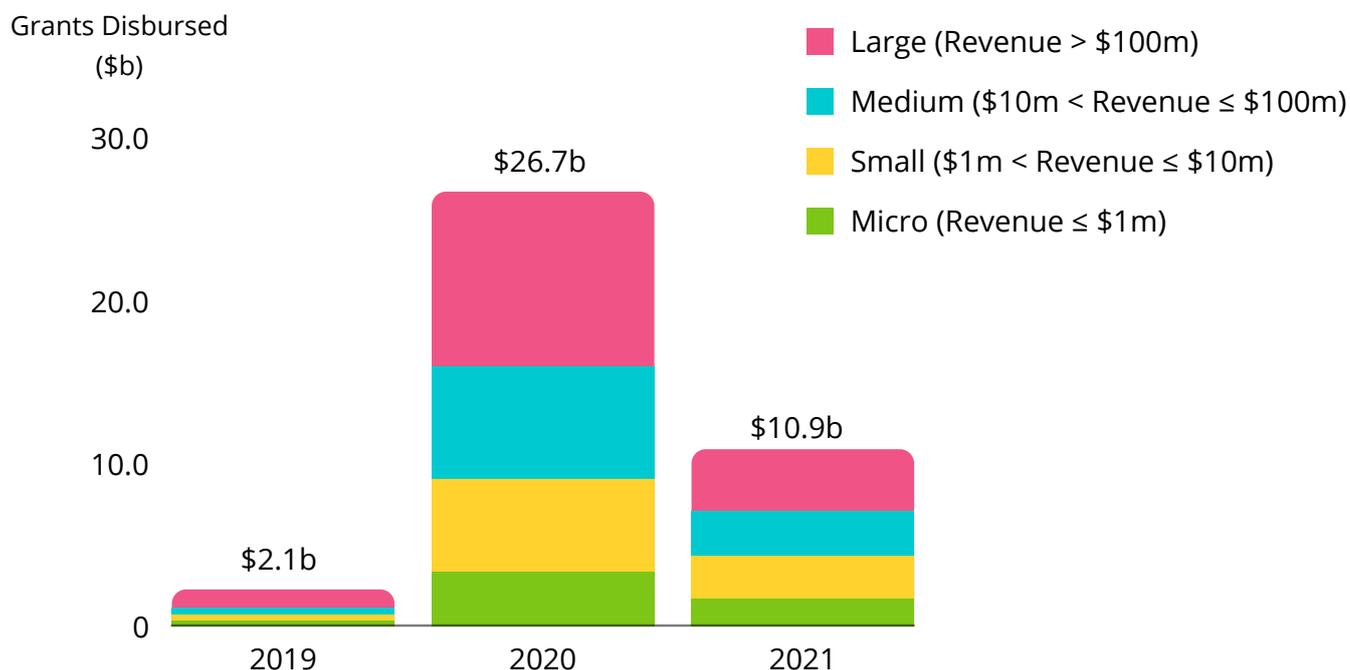
Source: MAS

Note: Figures are for end of period.

4.11 The limited increase in corporate debt and the stable levels of non-performing loans can be partly attributed to the design of the COVID-19 schemes for businesses. Several schemes helped directly with cashflow (e.g., JSS and rental relief) and hence reduced the need for financing. Most of the schemes were also skewed towards smaller firms which were less likely to have sufficient buffers to tide through the crisis. In total, \$26.7b and \$10.9b in government grants were disbursed in 2020 and 2021 respectively, significantly higher than the \$2.1b disbursed in 2019 (Figure 11). The share of grants received by micro, small, and medium firms, as measured by revenue size, increased significantly too, from 47% in 2019 to 65% in 2021.

Grants Disbursed by Firm Revenue Size (\$b), 2019 to 2021

FIGURE 11



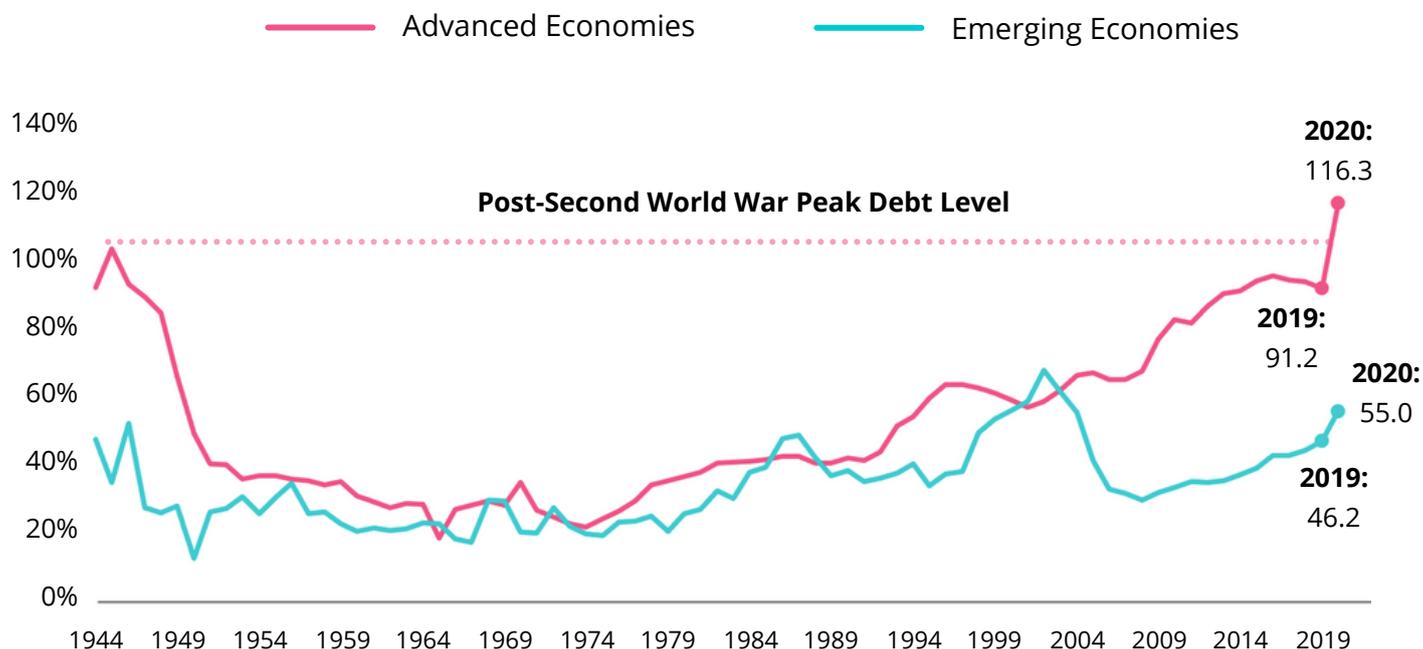
Sources: DOS and grant-administering agencies

Note: Figures exclude firms with missing revenue or valued-added data. Grants data for 2021 is preliminary and may be subject to further changes.

4.12 COVID-19 demonstrated the role of fiscal policy in emergency relief around the world. However, this massive show of fiscal support also left many governments with higher public debt. Median debt levels in advanced economies are now higher than the peak reached post-Second World War (Figure 12). Instead of issuing debt to finance fiscal support, Singapore drew on its Past Reserves to help fund the COVID-19 response. The Past Reserves played a crucial role in this crisis, with up to \$53.7b being set aside over FY2020 to FY2021 to finance the various schemes.

Median Public Debt-to-GDP Ratio of G20 Countries, 1944 to 2020

FIGURE 12



Sources: IMF Global Debt Database, Historical Public Debt Database

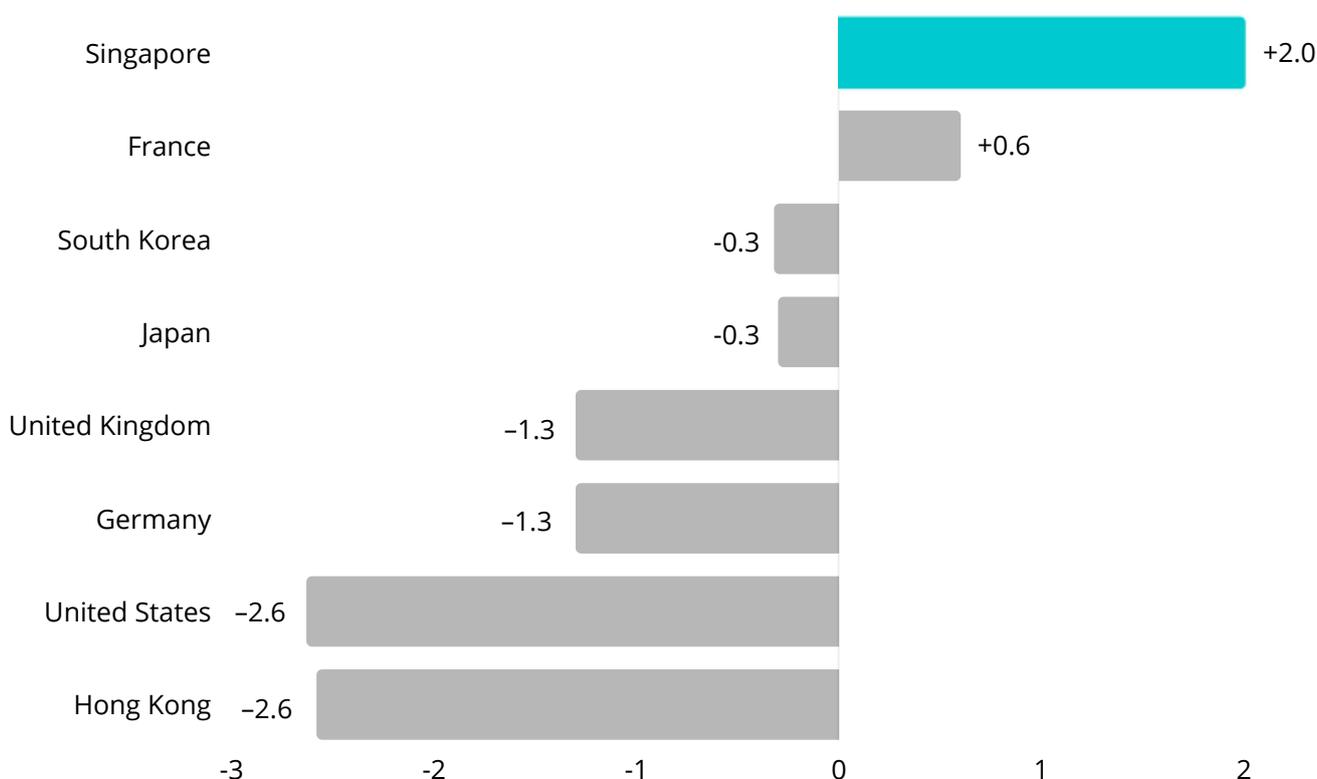
Note: Median debt-to-GDP ratios of country groups are estimated using general and central government debt data for G20 advanced and G20 emerging economies.

Impact on Employment

4.13 In a crisis, unemployment rates can rise and stay elevated for some time. The greater difficulty in finding a job may lead discouraged jobseekers to drop out of the labour force. Thus far, Singapore has avoided such a scenario. Between 2019 and 2021, Singapore's resident employment rate grew by 2pp (Figure 13). The resident labour force participation rate also increased from 68.0% in 2019 to 70.5% in 2021.

Percentage Points Change in Employment Rate Between 2019 and 2021

FIGURE 13



Sources: OECD, MOM, National Statistical Organisations (NSOs)

Notes: Data refers to the percentage points change in the employment-to-population ratio for age 15 and above. Singapore data is for residents. Hong Kong data is estimated using population and employment data from its NSO. Data is as at mid-year or 2Q for all economies.

4.14 There are two main reasons for the more favourable outcomes observed in Singapore. First, the COVID-19 labour market schemes (e.g., JSS, JGI) helped workers to build capabilities by retaining their jobs or finding new opportunities. Second, a large part of the overall shock to employment was absorbed by the foreign workforce, which shrank by 214,000 between 2019 and 2021.⁶

⁶ Excluding migrant domestic workers. Figures for 2019 and 2021 are as of December 2019 and June 2021 respectively.

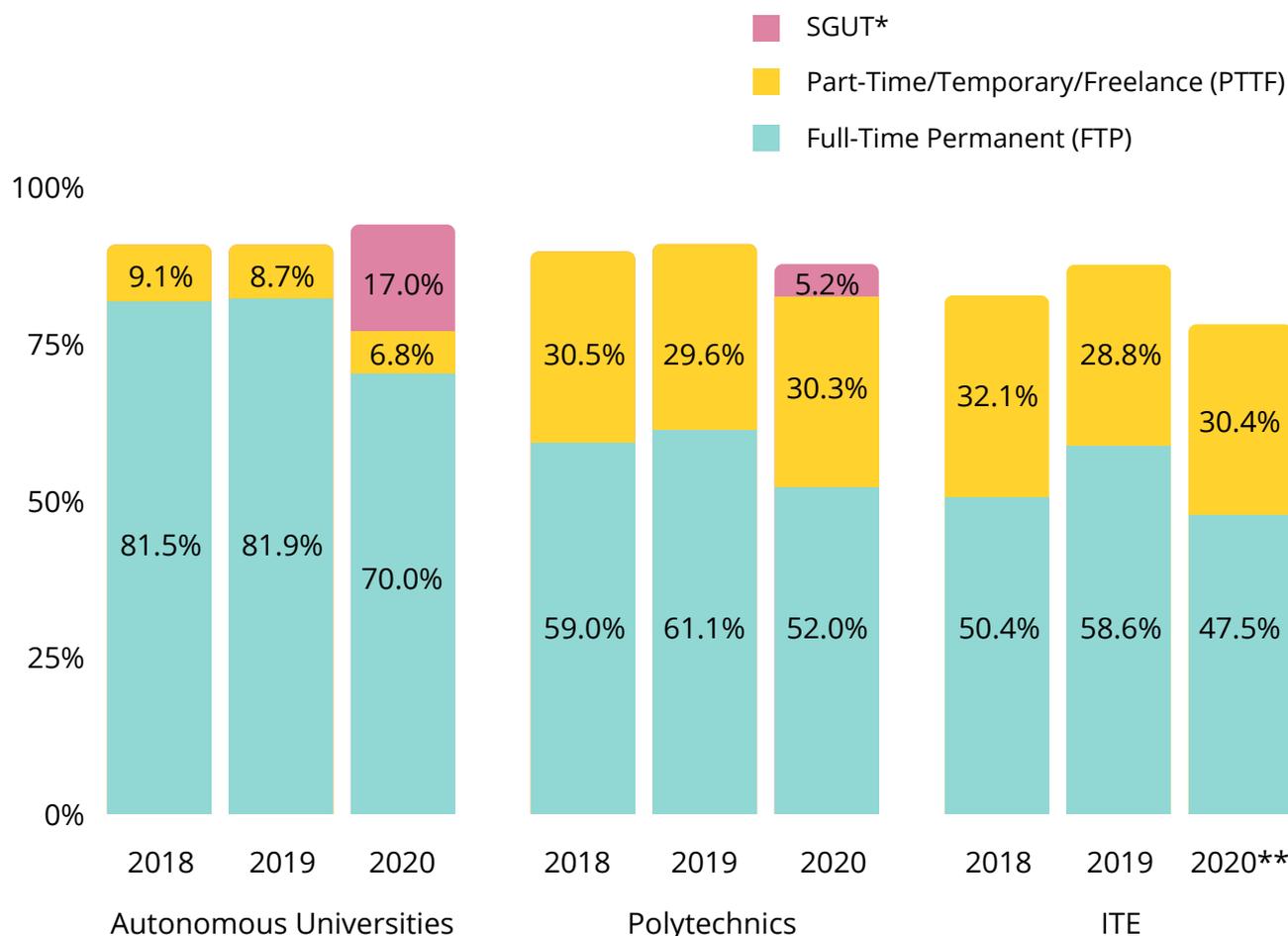
Impact on Employment Prospects of Recent Graduates

4.15 In a crisis, fresh graduates entering the workforce face dampened job prospects and difficulties in pursuing their career aspirations, which could impair their career trajectories. Schemes under the SGUJS Package provided support for locals to enter new jobs or take up meaningful skills opportunities that will boost their employability, so that they are better positioned for the economic recovery. In particular, the SGUnited Traineeships (SGUT) provided fresh graduates with on-the-job training and in-market experience in the interim, while the economy took time to generate the right job opportunities.

4.16 In spite of the economic impact of COVID-19, the overall employment rate of the Class of 2020 graduates from local Institutes of Higher Learning (IHLs) was comparable to those who graduated in 2018 and 2019, cushioned by support measures such as the SGUT ([Figure 14](#)). The slower recovery in the aviation and tourism sectors weighed more heavily on graduates from polytechnics and the Institute of Technical Education (ITE) as a higher proportion of their students took up related disciplines of study before the pandemic hit. Median salaries for autonomous universities (AUs), polytechnic and ITE graduates in 2020 remained comparable to 2019.

Graduate Employment Outcomes for IHL Graduates, 2018 to 2020

FIGURE 14



	AU			POLY			ITE^ (Fresh Graduates)			ITE^ (Post-NS Graduates)		
	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020
Median salary (FTP employed)	\$3,500	\$3,600	\$3,700	\$2,350	\$2,400	\$2,400	\$1,700	\$1,700	\$1,720	\$2,200	\$2,050	\$2,200

Source: Graduate Employment Survey 2018 – 2020

Notes:

* SGUT is considered part of Part-Time/ Temporary/ Freelance Employment.

** ITE graduates employed via SGUT are captured under PTTF employment. The breakdown is not available.

^ ITE Median salary figures are for all Nitec, Higher Nitec, and Diploma programmes FTP employed graduates.

4.17 As the economic recovery strengthens, the Government will help more graduates move into full-time jobs. This includes enhancing Education and Career Guidance support and job placement support.

Impact on Schooling Hours and Learning Outcomes

4.18 As restrictions tightened to contain the spread of the virus, schools acted quickly to transition to full home-based learning, while maintaining face-to-face learning for vulnerable students and children of essential workers. The efforts of teachers to engage students, coupled with online learning resources such as the Student Learning Space, helped to minimise disruptions to teaching and learning. All students had access to computers and the Internet for home-based learning through loans or subsidises for computers and broadband for lower-income families.

4.19 Around the world, an area of concern is the potential loss in learning outcomes due to the switch to virtual learning, particularly for younger learners. In the US, a study found that moving from in-person learning to virtual learning led to a 10.1pp reduction in the test scores in a standardised mathematics test.⁷ Similar studies are being conducted across the world to fully understand the effect of school closure and virtual learning on learning outcomes.

4.20 Singapore took the decision to minimise disruptions to in-person learning, especially for younger students. In 2020 and 2021, schools in Singapore were largely kept opened, experiencing 11 weeks of full and partial school closure ([Figure 15](#)). This also allowed parents to continue working and maintain work productivity.

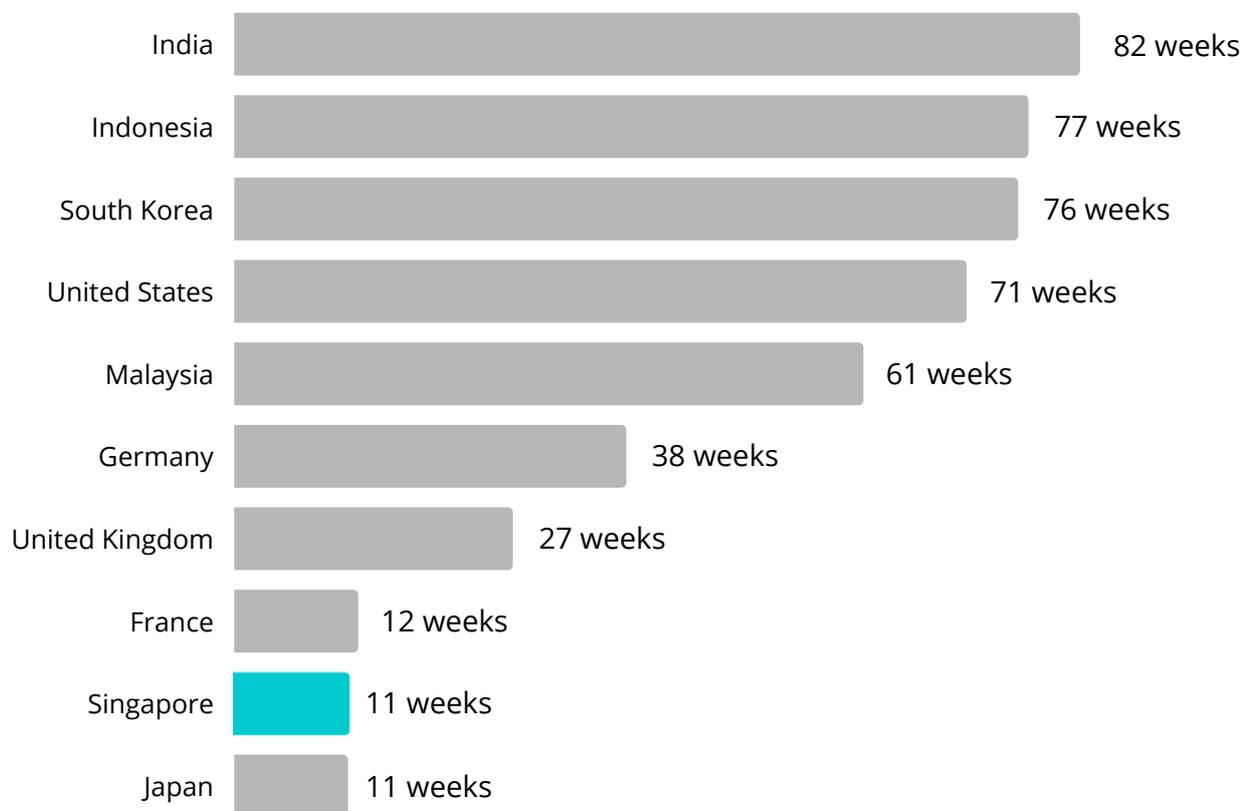
4.21 The overall performance of students in the national examinations during the COVID-19 period was comparable to that of previous years. For instance, in 2020 and 2021, about 85% of O-Level students attained at least 5 O-Level passes, similar to 2018 and 2019. For 2020, the median PSLE score of the overall PSLE cohort remained stable.⁸ This was also true for students on the MOE Financial Assistance Scheme, who come from households in the bottom quintile of national household income.

⁷ Halloran, C., Jack, R., Okun, J. C., & Oster, E. (2021). Pandemic Schooling Mode and Student Test Scores: Evidence from US States (No. w29497). National Bureau of Economic Research.

⁸ The new PSLE scoring system was introduced in 2021, and is not comparable with past years.

Duration of Full and Partial School Closure in Weeks (March 2020 to November 2021)

FIGURE 15



Sources: MOE, United Nations Education, Scientific and Cultural Organization (UNESCO)
(accessed on 6 January 2022)

Note: The figure for Singapore is for 2020 and 2021, and includes periods of home-based learning and weekly rotation of attendance, classified as “partial closure” by UNESCO.

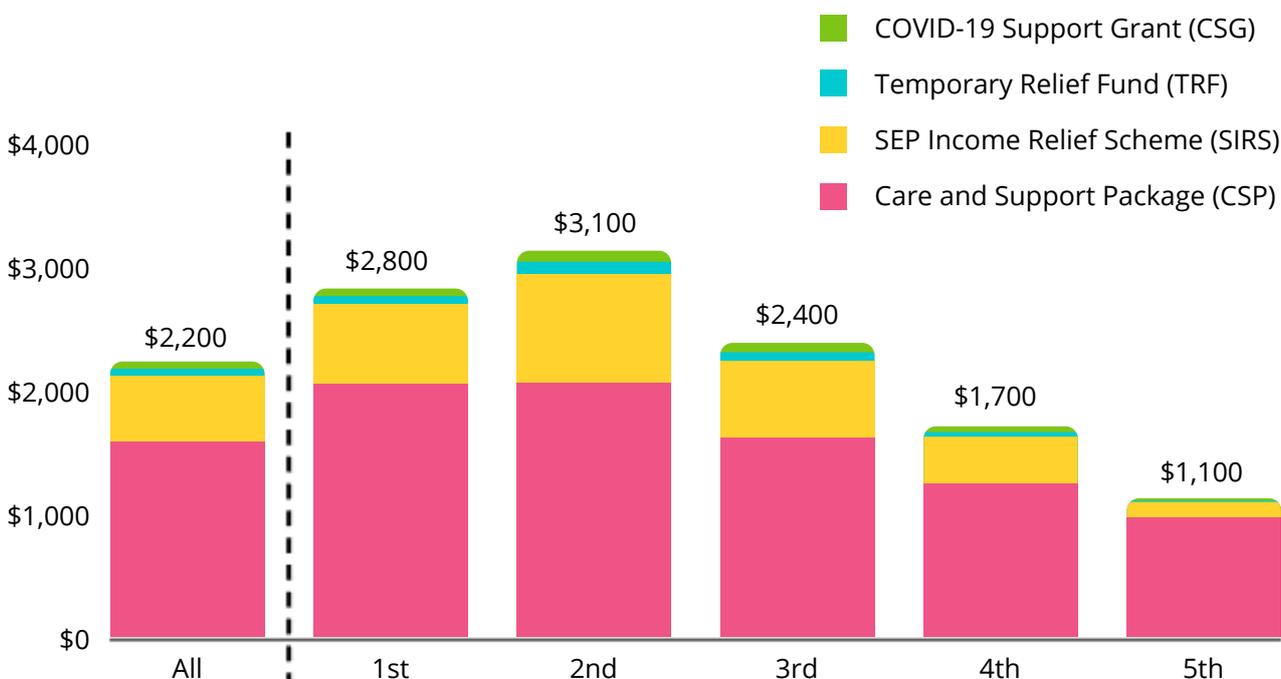
Impact on Inequality

4.22 Broad-based social support was provided to households and individuals, with support weighted towards the lower-income groups. This ensured timely relief for families and lessened the distributional impact of the pandemic.

4.23 Singaporean households received about \$2,200 per member on average from the COVID-19 schemes in 2020. Households in the lower income quintiles generally received more benefits compared to those in the upper income quintiles (Figure 16).⁹

Average Support Per Member in 2020 from COVID-19 Budget Measures Among All Citizen Households by Income Quintiles

FIGURE 16



Source: MOF Estimates

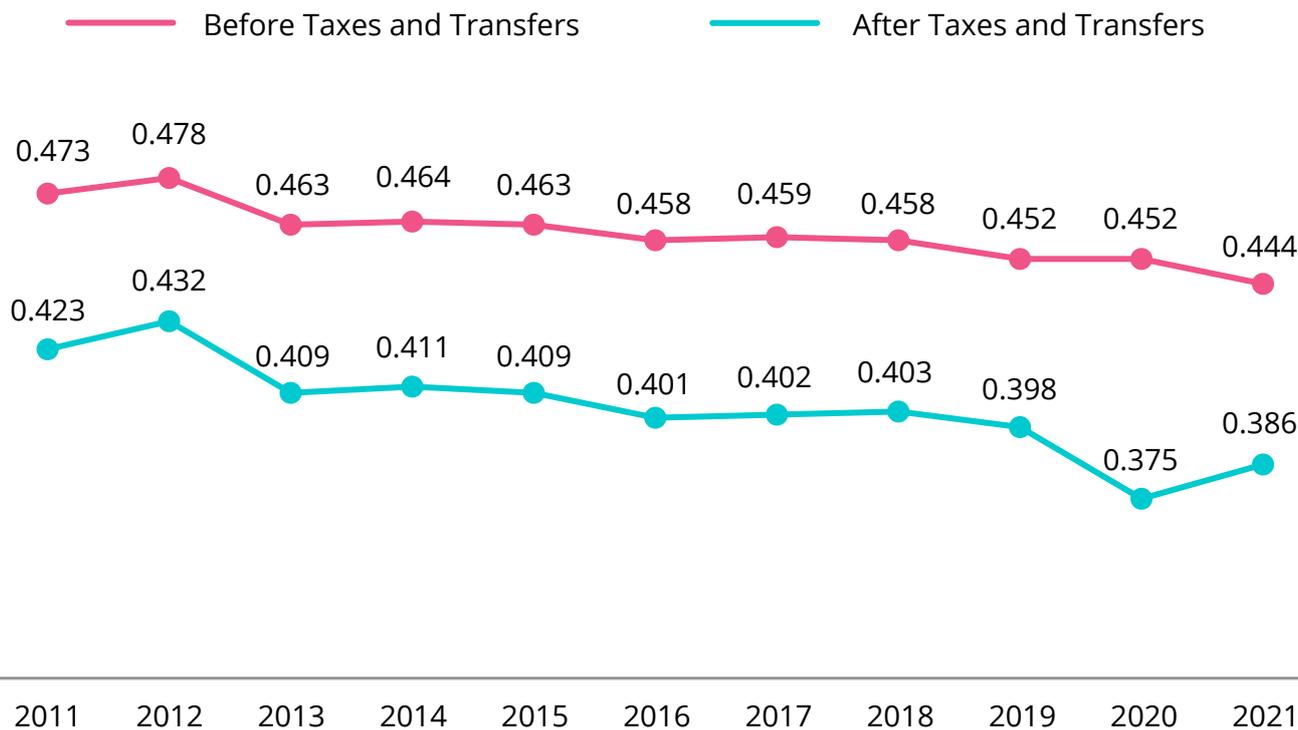
Notes: Figures are rounded to nearest hundreds. Citizen households refer to households headed by Singapore Citizens. Income quintiles are based on ranking of citizen households by monthly household income from work per household member (including employed CPF contribution) in 2020.

⁹ Households in the bottom income quintile received slightly less than households in the 2nd income quintile because a sizeable proportion of them were retiree households who might not have qualified for relief measures that were contingent on employment status (e.g., Temporary Relief Fund, COVID-19 Support Grant and Self-Employed Person Income Relief Scheme). Such households would have benefited from structural schemes like Silver Support and Medisave top-ups. These structural schemes are not included in this study.

4.24 These significant COVID-19-related government transfers contributed to a decline in the Gini coefficient after taxes and transfers among resident employed households, to 0.375 in 2020 (Figure 17). In 2021, the Gini coefficient increased to 0.386, reflecting the cessation of one-off COVID-19-related relief, but remained at a low level.

Gini Coefficient¹⁰ Among Resident Employed Households, 2011 to 2021

FIGURE 17



Source: DOS

4.25 In addition, the pre-taxes and transfers Gini coefficient fell from 0.452 in 2020 to 0.444 in 2021 due to stronger income recovery among lower income groups compared to the higher income groups. Specifically, median income per household member grew by 2.8% in 2021 in real terms, more than offsetting the decline of 1.2% in 2020. At the 20th percentile, income per household member grew at a faster pace of 5.5% in real terms in 2021.

¹⁰ The Gini coefficient is a summary measure of income inequality. It is equal to zero in the case of total income equality and one in the case of total inequality. The Gini coefficient is computed based on household income from work (includes employer CPF contributions) per household member among resident employed households.

IMPACT EVALUATION OF KEY SUPPORT SCHEMES

05

5.1 This section summarises findings from a series of deeper studies, performed by MOF, MTI, and MOM, to measure the impact of specific schemes. The findings are encouraging in that they were able to quantify meaningful effects of several schemes, in particular:

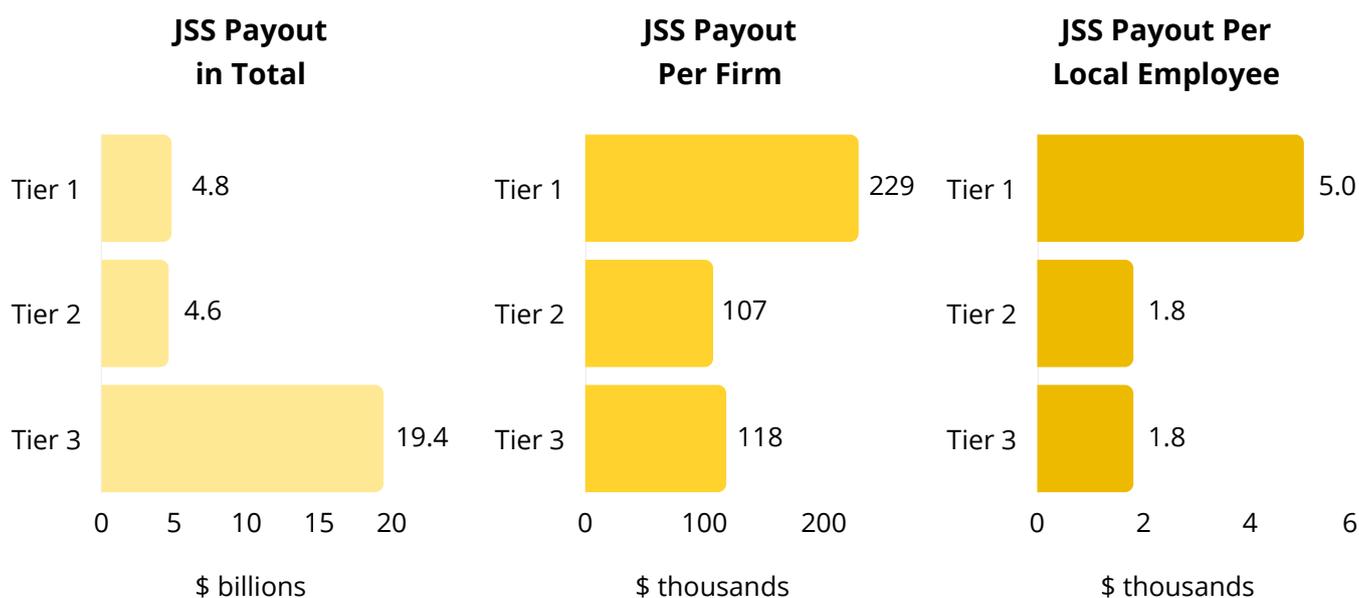
- a. The **Jobs Support Scheme** saved 165,000 local jobs during the initial months of the pandemic and also helped to support local wages;
- b. The **Financing Schemes** alleviated financial distress of firms and supported employment;
- c. The **SGUnited Jobs and Skills Package (including Jobs Growth Incentive)** provided local jobseekers with jobs and skills opportunities in the weakened labour market and boosted local hiring as the labour market started to recover; and
- d. The **COVID-19 Recovery Grant** provided targeted support to employees and self-employed persons (SEPs) who remained financially impacted by the pandemic. As of 31 December 2021, the CRG has supported 27,500 local workers.

Jobs Support Scheme

5.2 The JSS is a key plank of the fiscal support package. Its objective is to provide wage support to employers to help them retain local employees during the restrictive periods of the pandemic. From April 2020 to December 2021, more than \$28 billion of JSS was disbursed, with support tiered such that sectors severely impacted by COVID-19 received more help. On a per firm and per local employee basis, firms in Tier 1, which were more badly hit, received more JSS payouts on average (Figure 18).¹¹ By contrast, Tier 3 firms received lower payouts per firm and per local employee on average, but more in aggregate as they made up the largest share of the economy.

JSS Payout (a) In Total, (b) Per Firm and (c) Per Local Employee, by Tiers

FIGURE 18



Source: Inland Revenue Authority of Singapore

Note: The tier breakdown is based on firm eligibility in March 2021.

¹¹ Employers in the Aviation, Aerospace and Tourism sectors ("Tier 1 sectors") were most badly affected by COVID-19 due to global travel restrictions, and hence received the highest JSS support levels. Tier 2 sectors, comprising Food Services, Retail, Arts and Entertainment, Land Transport, Marine and Offshore, and Built Environment sectors were impacted by Safe Management Measures and weakened consumer sentiments; while all other sectors, such as Manufacturing and Wholesale Trade, were classified as Tier 3.

5.3 A joint MOM-MOF study examined how JSS affected the jobs and wages of local workers (Feature B).¹² The study estimated that a 10pp increase in the effective JSS wage subsidy led to a net increase of 0.44 and 0.13 local jobs saved per firm per month for Tier 1 and 2 firms respectively, which translated to around 165,000 local jobs being preserved in 2020. There is evidence that local wages also improved by between 1.7% and 5.3% for every 10pp increase in the effective JSS wage subsidy. Taken together, the results suggest that the adverse effect of COVID-19 on local workers would have been a lot more severe without the JSS support to firms.

¹² See Feature Article on “Impact of the Jobs Support Scheme (JSS) on Labour Market Outcomes” published in the Economic Survey of Singapore 2021 (www.mti.gov.sg/ess2021).

Feature B: Impact Evaluation of Jobs Support Scheme

Economists from MOF and MOM studied the causal impact of the Jobs Support Scheme (JSS) on local employment and wages in 2020. Depending on the JSS Tier of each firm, the JSS subsidy ranged from 25% to 75% of the first \$4,600 of gross monthly wages paid to local employees ([Figure B1](#)). Essentially, the JSS is a wage subsidy for local employees – with a larger relative impact on employees earning less than \$4,600 in gross monthly wages.

Scheme Details of JSS for 2020 Payouts

FIGURE B1

Tranche	Month of Payout	Qualifying Period	Tier 1	Tier 2	Tier 3A	Tier 3B
1	April 2020	October 2019 to December 2019	75%	50%	25%	25%
2	July 2020	February 2020 to March 2020	75%	50%	25%	25%
		April 2020 (Circuit Breaker)	75%	75%	75%	75%
3	October 2020	May 2020 (Circuit Breaker)	75%	75%	75%	75%
		June 2020 to August 2020	75%	50%	25%	25%

Methodology

Using a monthly firm-level administrative dataset, the study exploited the exogenous variation in the effective JSS wage subsidy across firms (i.e., JSS subsidy as a share of total local wages paid by the firm), arising from differences in the share and wages of local workers paid above the \$4,600 cap. This allowed identification of the causal impact of JSS on local employment and average local wages.

Specifically, the study estimated the impact of JSS on firms' outcomes using the following equation:

$$Y_{ijt} = \beta_{0,j} + \beta_{1,j} \text{Effsub_JSS}_{ijt} \times \text{Trt_period}_t + \alpha X_{ijt} + \delta_{jt} + \gamma_i + \varepsilon_{ijt}$$

where

Variable	Description
Y_{ijt}	(a) change in local employment, or (b) log of average local wages of firm i in JSS support tier j at time t
Effsub_JSS_{ijt}	Effective JSS wage subsidy computed based on the firm's CPF contributions from October to December 2019
Trt_period_t	Time dummy for the treatment period spanning March to December 2020
X_{ijt}	Vector of firm-level time-varying control variables, including industry-time effects and foreign worker levy waivers and rebates
δ_{jt}	Time fixed effects
γ_i	Firm-level fixed effects
ε_{ijt}	Error term

To avoid simultaneity bias, the effective JSS wage subsidy (i.e., treatment variable) was computed using wages reported in October to December 2019, as they would not be influenced by the announcement and implementation of the JSS in 2020.¹³

Key findings

The study found that:

1. On average, for every 10pp increase in effective JSS wage subsidy, there was a 0.44 and 0.13 net increase in local jobs saved per firm per month for Tier 1 and 2 firms respectively.¹⁴ This translated to about 165,000 local jobs saved for the period March to December 2020.
2. The JSS also helped to preserve wages. On average, for every 10pp increase in effective JSS wage subsidy, average local wages were higher by about 1.7% to 5.3% (or about \$70 to \$150).

These findings provide evidence that firms receiving JSS were able to cushion their employees from job losses and wage reductions during the initial months of the pandemic, thereby helping to preserve employment and support wages.

¹³ Other treatment variables, including using the exact JSS disbursement amounts, were also considered. The “effective JSS wage subsidy” variable constructed was deemed to be the most appropriate treatment variable that would allow the causal impact of the JSS to be uncovered.

¹⁴ The study finds that the overall employment impact for Tier 3 firms is statistically insignificant.

Financing Schemes

5.4 In a crisis, credit conditions can tighten significantly and suddenly. It is important to ensure firms, especially small and medium enterprises (SMEs), have access to low-cost financing. To ensure that viable firms, especially SMEs, retained access to credit during the pandemic, the Government significantly expanded risk-sharing arrangements with Participating Financial Institutions (PFIs) and enabled eligible firms to take loans through the following schemes:

- a. Temporary Bridging Loan (TBL) Programme;
- b. Enhanced Enterprise Financing Scheme – Working Capital Loan (EFS-WCL);
and
- c. Enhanced Enterprise Financing Scheme – Trade Loan (EFS-TL).

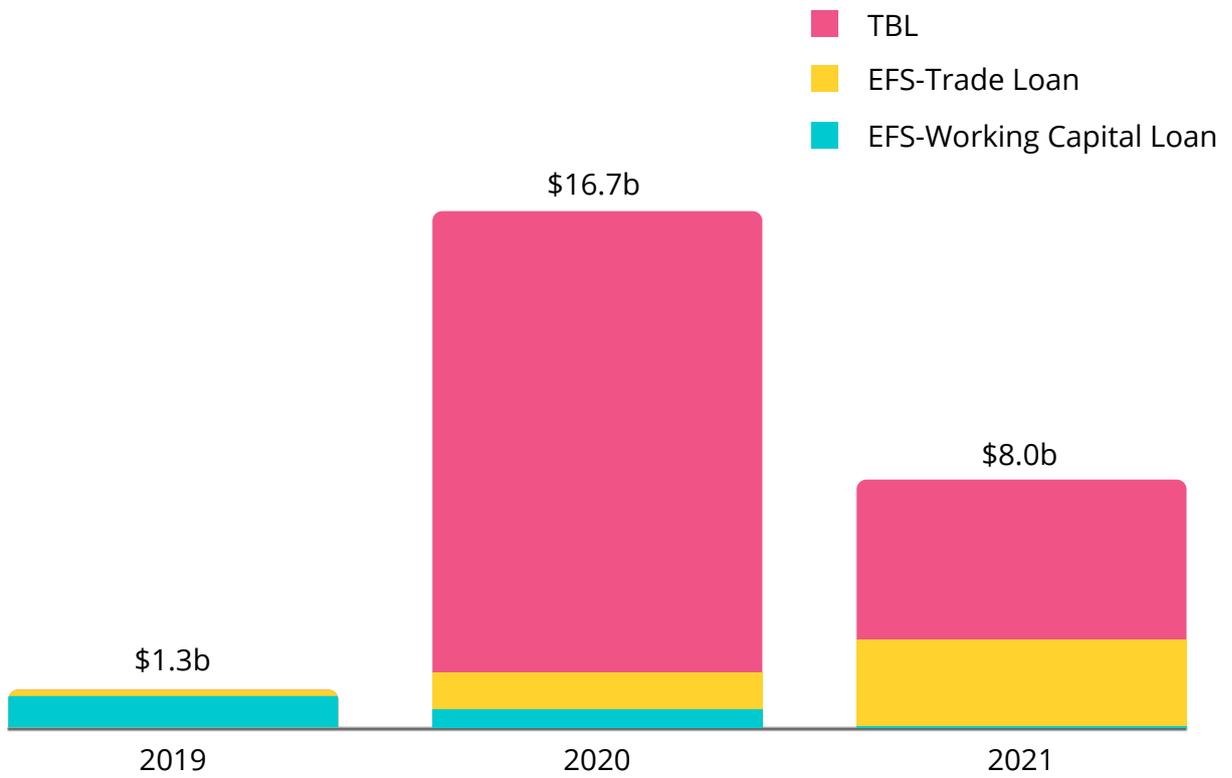
5.5 MAS also provided low-cost funding (MAS SGD Facility) for the PFIs in the provision of these loans. This further lowered the interest rates charged to eligible corporate borrowers. Over the period from March 2020 to December 2021, these schemes supported over 27,000 enterprises, which were able to access loans of over \$24.7b, substantially higher than in 2019 ([Figure 19](#)). Support was also tilted towards smaller firms, with around 90% of supported firms being micro and small enterprises ([Figure 20](#)).

5.6 Results from an MTI study on the financing schemes that are focused on providing working capital loans (i.e., TBL and EFS-WCL) showed that the schemes supported firms during the pandemic.¹⁵ In particular, the TBL, which is the main financing scheme, helped to alleviate financial distress across firms of all sizes and supported employment in smaller firms with 50 or fewer employees ([Feature C](#)).

¹⁵ See Feature Article on “Impact of Enterprise Singapore’s Financing Schemes During the COVID-19 Pandemic” published in the Economic Survey of Singapore 2021 (www.mti.gov.sg/ess2021).

Value of Approved Loans (\$b), 2019 to 2021

FIGURE 19

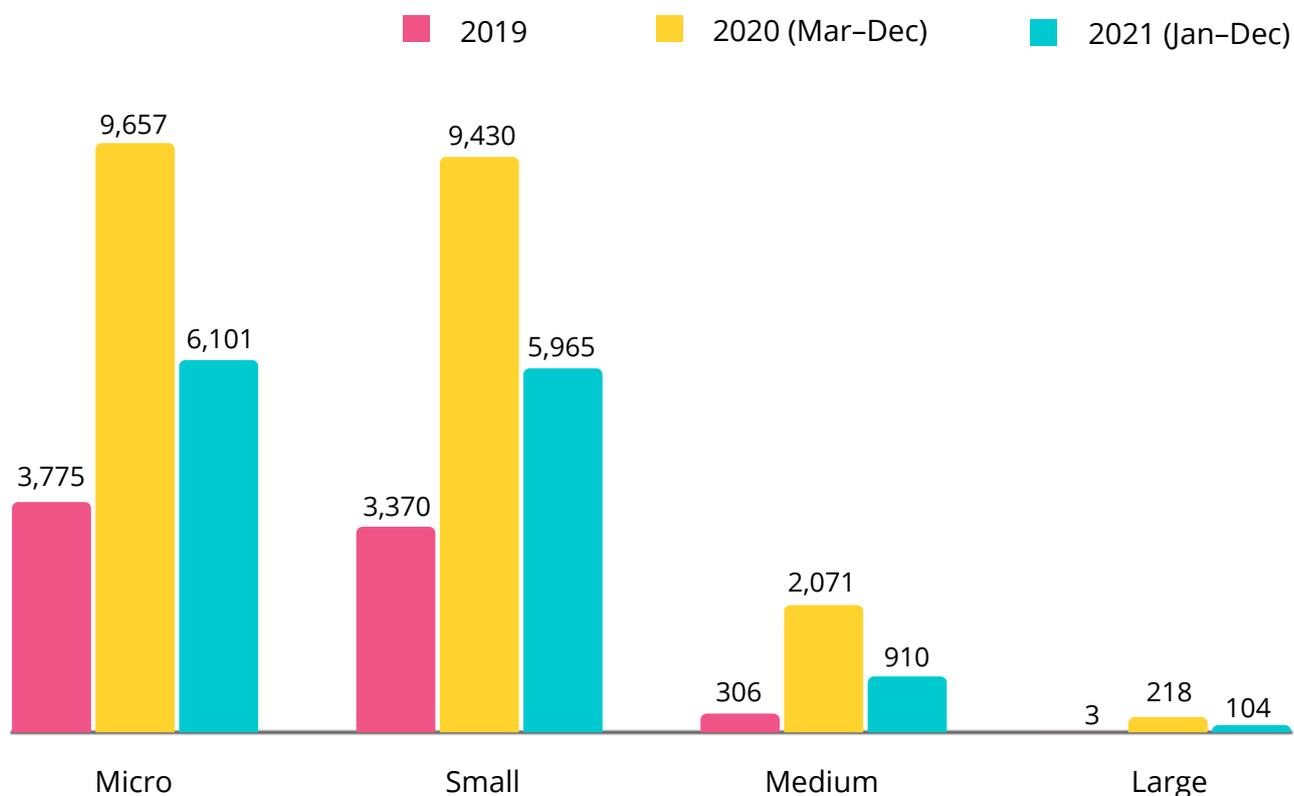


Source: Enterprise Singapore (ESG)

Note: Data for 2020 (March-December) has been revised to account for withdrawal of loans and changes to loan quantum after approval.

Number of Enterprises Supported under TBL, EFS-WCL, and EFS-TL by Revenue Band, 2019 to 2021

FIGURE 20



Source: ESG

Notes: Data shows the number of unique enterprises supported in each year by the different revenue bands. Some firm may receive support over multiple years. Data for 2020 (March-December) has been revised to account for withdrawal of loans and changes to loan quantum after approval. Enterprises are categorised based on the following revenue bands: Micro – Revenue ≤ \$1 million; Small – \$1 million < Revenue ≤ \$10 million; Medium – \$10 million < Revenue ≤ \$100 million; Large – Revenue > \$100 million.

Feature C: Impact of ESG's Financing Schemes

Given the unprecedented scale of the economic fallout from the pandemic and the fast-evolving public health situation, there was a need to have timely analysis of the impact of government schemes put in place to help firms and workers tide over the crisis in order to calibrate the Government's responses to the pandemic effectively.¹⁶ To this end, MTI economists assembled a set of high-frequency (monthly) firm-level indicators to enable a timely assessment of the impact of the financing schemes during the COVID-19 crisis. In particular, the MTI economists focused on two monthly firm-level outcomes: (i) firms' employment levels based on CPF and MOM data; and (ii) a binary indicator of firm financial distress constructed from various data sources, which indicates whether a firm was prompt in meeting its payment obligations in a particular month (Figure C1). These outcomes would help to shed light on whether the financing schemes helped to save jobs and keep firms afloat during the COVID-19 recession. The focus of the study was on the financing schemes that provided working capital loans to firms.

Data used in the construction of the firm financial distress indicator

FIGURE C1

Firm-level outcome	Source	Frequency
CPF late payments	CPF	Monthly
Rental arrears	JTC	
Electricity payment arrears	EMA	
Foreign worker levy default	MOM	

Note: A firm was identified to be in financial distress, in a particular month, if the firm (1) was late in making employer's CPF contribution for the month; or (2) had defaulted on its payment of foreign worker levy; or (3) had an increase in outstanding JTC rental arrears or electricity payment arrears owed to SP Group as compared to the previous month.

¹⁶ For instance, Chetty et al. (2020) used high-frequency firm outcomes compiled from credit card processors, payroll firms, job posting aggregators and financial services firms to evaluate some of the US government policies in response to COVID-19 in real time.

Methodology

In evaluating the causal impact of the financing schemes on firm-level outcomes, an important consideration is selection bias (i.e., firms that were eligible for and took up the schemes might be different from those that were ineligible for or did not tap on the schemes). For example, commercial banks were more likely to approve loans to firms with viable businesses. To mitigate such biases, the study used a two-way fixed effects regression model to account for differences across firms that could have affected their take-up of the schemes.¹⁷

Specifically, the study adopted the following two-way fixed effects regression model:

$$\log Y_{it} = \beta' \log (\text{cumloan}_{it}) + \psi' X_{it} + \gamma_i + \theta_t + \epsilon_{it}$$

where

Variable	Description
Y_{it}	Firm-level outcomes (e.g., employment, firm financial distress) for firm i in month t . For firm financial distress, a binary outcome indicator was used
cumloan_{it}	Vector of cumulative loan amounts that firm i received in month t , with each element in the vector corresponding to each of the loan schemes
X_{it}	A set of controls that includes the disbursements under other major government schemes (e.g., JSS) received by firm i in month t
γ_i	Firm-level fixed effects
θ_t	Month fixed effects
ϵ_{it}	Error term

¹⁷ Two-way fixed effects regression models have been widely used by academics and government researchers to evaluate the impact of various policies. See Toh et al. (2021) and Banerjee & Iyer (2005) for examples of studies that used two-way fixed effects regression models.

This regression model accounted for time trends that affected all firms (e.g., recession conditions) as well as unique firm characteristics (including those not observed in the dataset) that did not change during the period of study (e.g., firm managerial culture). To further isolate the incremental impact of the financing schemes, the impact of other major government support schemes, such as the JSS payments received by firms, was also controlled for in the regression model. By reducing selection biases¹⁸, the methodology provided more confidence that differences in firms' outcomes could be attributed to the take-up of the financing schemes.

Key findings

The key regression results showed that the financing schemes generally led to improvements in firm-level outcomes. As the main financing scheme to support firms during the crisis, the TBL had a larger impact on firms' outcomes. Specifically, in line with the policy intent, an additional loan of the average quantum under the TBL reduced the probability of firm financial distress (i.e., probability of a firm missing its payment obligations) by 0.05pp and had a positive impact on firms' total employment of 0.26% on average. The impact on total employment was driven by smaller firms (i.e., firms with no more than 50 employees), while the alleviation of financial distress was seen across firms of all sizes.

The high-frequency nature of this analysis implies that the estimated impact of the schemes should be seen as the short-term impact, and is meant to provide an immediate sensing of the schemes' effectiveness during the pandemic. MTI will undertake a further analysis once comprehensive annual administrative data on firm-level outcomes are available in order to study the longer-term benefits and costs of the various schemes.

¹⁸ Nonetheless, selection bias could still exist if there were time-varying characteristics that affected firms' probability of obtaining loans but were not captured in the high-frequency dataset. For example, firms with similar financial health prior to the pandemic could see their financial health react differently to the pandemic, but the study was not able to account for this due to the lack of monthly financial data in the dataset.

It is also useful to note that a key objective of government financing facilities during COVID-19 was to avoid a procyclical credit supply crunch, and ensure that banks continue to lend amidst elevated macroeconomic uncertainty. This study focuses on micro firm-level outcomes and does not examine how government financing schemes affected overall liquidity conditions, which was key to avoiding the macro-financial amplification effects during the COVID-19 recession.

SGUnited Jobs and Skills Package

5.7 Beyond the capabilities retention schemes and financing schemes, the Government saw the need to support the creation of job and training opportunities. This is because the scale of the economic shock meant that the economy would not create sufficient jobs and opportunities at the peak of the crisis.

5.8 The SGUJS Package is a comprehensive set of initiatives aimed at providing training and employment opportunities to local jobseekers affected by the pandemic ([Figure 21](#)). The JGI scheme was subsequently introduced in September 2020 to encourage firms to bring forward their hiring of locals and target support at key growth areas.

Key Schemes in the SGUJS Package

FIGURE 21

Scheme	Description
SGUnited Traineeships (SGUT)	SGUT offered company-hosted traineeship opportunities to recent graduates, co-funding 80% of the training allowance.
SGUnited Mid-Career Pathways Programme (SGUP)	SGUP offered company-hosted attachment (SGUP-Company Attachment or SGUP-CA) to mid-career jobseekers with co-funding of up to 90% of the training allowance, and training opportunities (SGUP-Company Training or SGUT-CT) that offer a monthly training allowance of \$1,500.
SGUnited Skills (SGUS)	SGUS offered full-time training programmes delivered by Continuing Education and Training Centres, including IHLs.
Jobs Growth Incentive (JGI)	JGI provided salary support for each new local hire of eligible firms to expand local hiring and support the labour market recovery.
SGUnited Jobs and Skills Centres (SGUJS Centres)	SGUJS Centres help local jobseekers access the available jobs and skills opportunities through career matching services closer to the heartlands.
SGUnited Jobs and Skills Placement Partner (SGUJS PP)	Mature, long-term unemployed, or persons with disabilities can be assisted by appointed SGUJS PP (Adecco), to explore job opportunities.
Job Redesign under the Productivity Solutions Grant (PSG-JR)	Employers can tap on the enhanced support for PSG-JR to develop and implement job redesign solutions.

Source: MOM

5.9 The initiatives under the SGUJS Package helped local jobseekers in various stages of their careers build up their skillsets and networks with industry-relevant experience. After the programme, a majority of trainees experienced improved employment outcomes.

- a. SGUT helped fresh graduates entering a weak labour market amidst the pandemic. SGUP provided traineeship and training opportunities for mid-career jobseekers to widen their professional networks and facilitate switches to better jobs in the future.
- b. As at end-October 2021, more than 166,300 jobs and skills opportunities under the SGUJS Package were filled, with 122,300 (or over 70%) being job placements. The job placements comprised a good mix of PMET and non-PMET roles, with more than seven in 10 being long-term job roles.
- c. Based on latest available data, the majority of the trainees under SGUT, SGUP, and SGUS found employment within 6 months after the programme ([Figure 22](#)).
- d. Among the SGUP and SGUS trainees who found employment after the programme, there were more trainees who earned the same or higher wages (50%) than those who experienced a wage decline (39%), with respect to their pre-programme wages ([Figure 23](#)).

Six-Month Post-Programme Employment Status of SGUT, SGUP, and SGUS Trainees

FIGURE 22

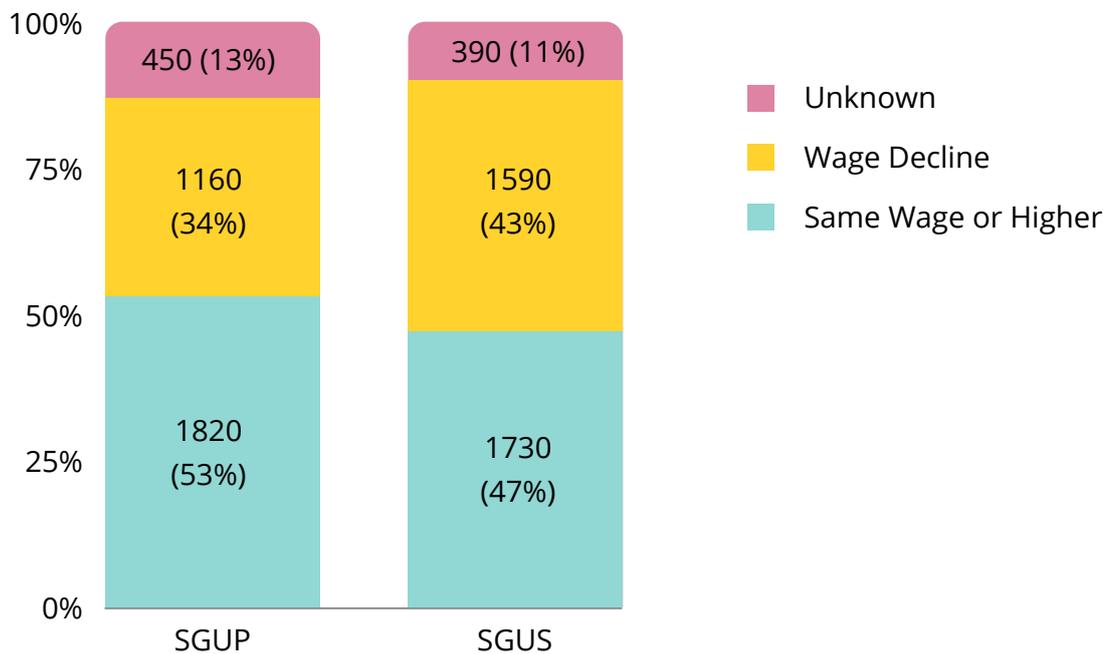


Source: MOM

Notes: Figures are rounded off to the nearest tens. The figures for SGUT and SGUP-CA refer to the trainees who had completed or otherwise exited the programme from July 2020 to March 2021. For SGUP-CT and SGUS, the trainees were from cohorts between February 2021 and March 2021. Placements include both graduates and early exits. Trainees reflected as not employed could be in self-employment.

Wage Outcomes of SGUP and SGUS Trainees After the Programme

FIGURE 23



Source: MOM

Notes: Figures are rounded off to the nearest tens and refer to SGUP/ SGUS trainees who had found employment as of September 2021. There were about 840 trainees who had no prior CPF wage records within the last two years, possibly due to being self-employed or being outside of the labour force. Wage changes were not measured for SGUT participants who found employment after the programme as they were recent graduates.

Jobs Growth Incentive

5.10 As the economic recovery gained momentum, government measures started tilting from cost relief to restructuring and transformation to accelerate the pickup. JSS was tapered and JGI was introduced to stimulate job creation by offering a subsidy for firms to bring forward the hiring of local workers, in particular mature workers.

5.11 Economists from MOF, MTI, and MOM estimated the impact of Phase 1 of the JGI scheme (i.e. September 2020 to February 2021), and found the following:

- a. JGI incentivised the additional hiring of 47,000 local workers and modestly increased the proportion of mature workers (aged 40 and above) hired. An estimated 27,300 more mature workers were hired as a result of JGI. Average wages of new hires also improved (Feature D).
- b. JGI supported the hiring of vulnerable local jobseekers. Nearly half of the JGI-supported hires were previously non-employed¹⁹, with close to 30% having been non-employed for more than six months. Close to half of the JGI-supported hires were also mature workers.

¹⁹ Non-employed individuals included those who were unemployed (i.e., individuals not working and actively looking for a job) and those who were outside of the labour force (i.e., individuals not working and not actively looking for a job).

Feature D: Results on the Impact of the Jobs Growth Initiative

The Jobs Growth Incentive (JGI) was introduced in September 2020 to incentivise firms to bring forward hiring plans and expand their local workforce, given the weak hiring sentiments and elevated resident unemployment rate amidst the pandemic (see [Figure D1](#) for scheme details). JGI was a tightly-scoped approach, supporting only net new local hires in firms, as the more broad-based Jobs Support Scheme (JSS) was stepped down.

Scheme details of JGI Phase 1 (September 2020 – February 2021)

FIGURE D1

Qualifying window	New local hires during Phase 1, with August 2020 as the baseline month
Eligibility conditions	<ul style="list-style-type: none"> a. Increase in overall local workforce; b. Increase in local workforce earning gross wages of \$1,400 and above; and c. Employer must be established on or before 16 August 2020
Support for workers (excluding mature workers, persons with disabilities and ex-offenders)	25% of first \$5,000 for 12 months (up to \$15,000)
Support for mature workers (age ≥ 40), persons with disabilities, ex-offenders	50% of first \$5,000 for 12 months (up to \$30,000)

Methodology

Using a monthly firm-level administrative dataset, the study compared the employment outcomes of two groups of firms: a first group that received the JGI subsidy in any month between September 2020 and February 2021 (i.e., the “treated” group); and a second group that did not receive the JGI subsidy but hired at least one local over the same period, and which were observably similar to the treated firms in the period before the introduction of the JGI (i.e. the “control” group).²⁰

Specifically, the study estimated the impact of JGI on firms’ outcomes using the following equation:

$$Y_{it} = \beta_1 + \beta_2 T_i \times D_t + \delta_{st} + \alpha_i + \epsilon_{it}$$

where

Variable	Description
Y_{it}	Outcomes of interest of firm i in time t , i.e., (i) number of local gross hires, (ii) log of average wages among local gross hires, and (iii) share of local gross hires aged ≥ 40
T_i	Treatment dummy (equals to 1 if the firm had received JGI for any month from September 2020 to February 2021, 0 if not)
D_t	Time dummy variables (monthly from June 2020 to February 2021; excluding baseline month of August 2020)
δ_{st}	Industry x time fixed effects to control for sector-specific time trends
α_i	Firm fixed effects
ϵ_{it}	Error term

²⁰ The control group of firms was constructed using a matching method known as coarsened exact matching, which ensured that their observable characteristics were similar to that of the treated firms prior to the introduction of the JGI.

The methodology described above would control for confounding effects that arise from differences in observable firm characteristics, as well as unobserved time-invariant firm-specific and sector-specific factors. An example of a firm-specific factor is managerial quality, while examples of sector-specific factors include the uneven impact of the COVID-19 pandemic on different sectors and the varying potential for work-from-home arrangements across sectors.

Key findings

The results of the study suggest that the JGI improved local employment outcomes modestly. In particular, the study found that relative to the control group of firms:

1. Each JGI-supported firm hired 0.3 more locals per month on average as a result of the JGI subsidy. This translated to 47,000 additional local hires between September 2020 and February 2021.
2. JGI was associated with a 13.3% increase (or about \$260) in the average wages of local gross hires on average.

The JGI was found to have marginally raised the share of mature workers among local gross hires. However, the evidence for this is weaker as the effect was only statistically significant in the initial month following the implementation of the scheme. Based on the regression results, each JGI-supported firm was estimated to have hired 0.17 more mature locals per month on average, translating to an increase of 27,300 mature hires.

COVID-19 Recovery Grant

5.12 Lower- to middle-income employees and SEPs who lost their jobs or experienced significant income losses were initially supported by the Temporary Relief Fund (TRF), COVID-19 Support Grant (CSG) and the Self-Employed Person Income Relief Scheme (SIRS) in 2020.

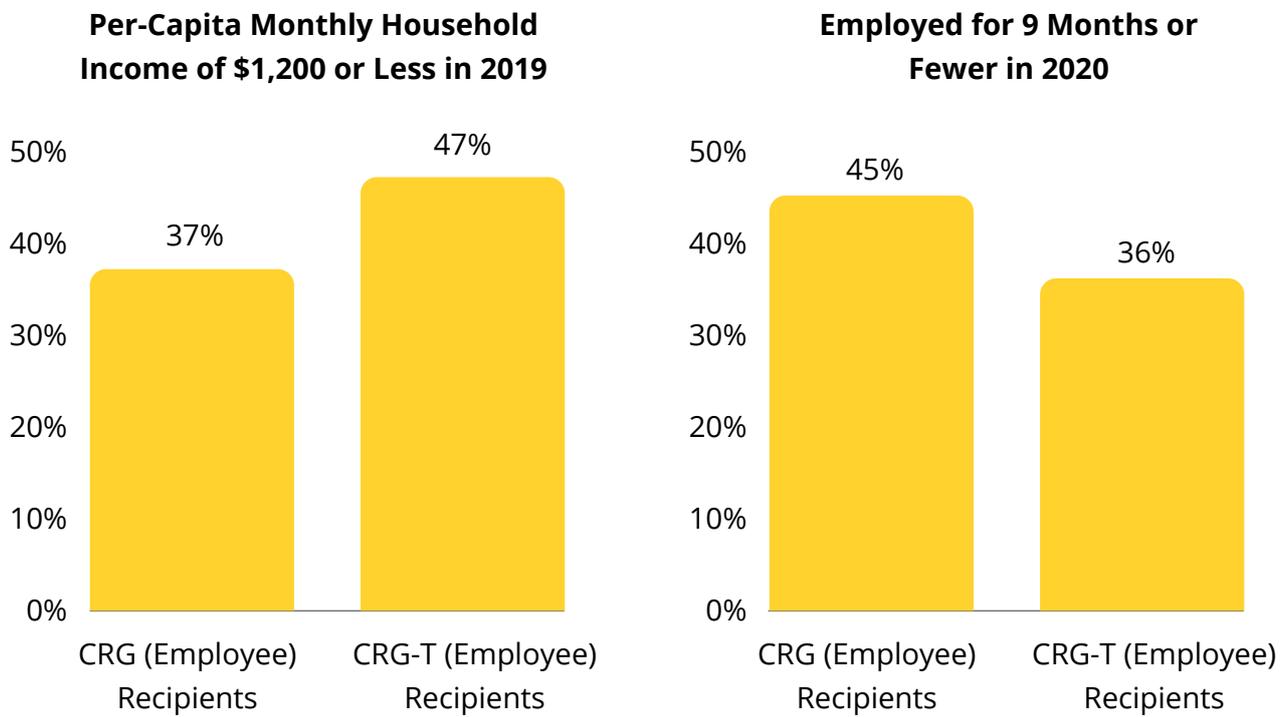
5.13 To streamline financial assistance for lower- to middle-income workers, the COVID-19 Recovery Grant (CRG) scheme was launched in January 2021 to provide targeted support to both employees and SEPs who remain financially impacted by the pandemic, while they actively search for new jobs or training opportunities. Subsequently, the COVID-19 Recovery Grant - Temporary (CRG-T) scheme was made available from 3 June to 31 August 2021 to provide timely support for those who experienced significant abrupt income losses during Phase 2 (Heightened Alert) period but might not qualify for existing COVID-19 financial assistance schemes such as CRG.

5.14 Overall, the CRG and CRG-T provided targeted help to vulnerable groups, such as lower-income individuals and those who were in irregular employment in 2020 ([Figure 24](#)).²¹ More than a third of the support went to recipients with household income of \$1,200 or less. Support provided by these schemes was timely, with around two-thirds of CRG (employee) recipients and more than 90% of CRG-T (employee) recipients receiving assistance within one month of job loss or start of no-pay leave.

²¹ "Per-capita monthly household income of \$1,200 or less" and "Employed for 9 months or fewer" were used as thresholds as around one-fifth of all employees fell under these thresholds each year in 2019 and 2020.

Share of CRG (Employee) and CRG-T (Employee) Recipients by Income and Employment Duration

FIGURE 24



Source: MSF Estimates

Note: Based on employees who received each scheme, up to end-Sep 2021. Groups of recipients receiving each scheme may overlap as individuals may receive assistance from more than one scheme.

CONCLUDING REMARKS

06
—

6.1 This Occasional Paper outlines how Singapore has not only mitigated the short-term impact of the COVID-19 crisis, but also prevented potential longer-term economic scarring. In summary, Singapore has:

- a. Reduced the loss to potential output;
- b. Experienced limited increase in corporate and government debt;
- c. Continued to expand resident employment;
- d. Maintained the job prospects of recent graduates;
- e. Minimised the loss of schooling hours by keeping schools physically open for the most of the period; and
- f. Mitigated the distributional impact of the pandemic across the population.

6.2 The Past Reserves played a critical role in providing a crisis fund to support the temporary and extraordinary measures to combat the macroeconomic and health impacts of COVID-19. Up to \$53.7b was set aside over FY2020 to FY2021 to finance the various schemes. Unlike many other governments, the Singapore Government did not use public debt and therefore did not have to deal with the longer-term effects of elevated debt levels.

6.3 These findings suggest that Singapore has largely avoided longer-term scarring from COVID-19, all whilst keeping the COVID-19 death rate low.

6.4 This crisis is not over. The emergence of the Omicron COVID-19 variant is a timely reminder that Singapore must stay vigilant as we recover from the pandemic. Currently, the focus remains to learn to live with the virus, manage the risks from new variants, and enable a safe reopening of the economy. There is also a need to keep a close watch over the longer-term implications of COVID-19.