

The Treasury

COVID-19 Information Release

April 2020

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[23] 9(2)(a) - to protect the privacy of natural persons, including deceased people

[34] 9(2)(g)(i) - to maintain the effective conduct of public affairs through the free and frank expression of opinions

[39] 9(2)(k) - to prevent the disclosure of official information for improper gain or improper advantage

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Treasury Report: Economic scenarios

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|--------------|---------------|---------------------|------------------------------------------------|
| Date: | 13 April 2020 | Report No: | T2020/973 |
| | | File Number: | BM-3-6-1 (By Economic and Fiscal Update (EFU)) |

Action sought

| | Action sought | Deadline |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------|---------------|
| Hon Grant Robertson Minister of Finance | Note that the Treasury intends to publish this report on its website on Tuesday 14 April. | 14 April 2020 |

Contact for telephone discussion (if required)

| Name | Position | Telephone | 1st Contact |
|----------------|----------------------|-----------|-------------|
| [34] | [23] | [39] | ✓ |
| Peter Gardiner | Manager, Forecasting | | |

Minister's Office actions (if required)

Return the signed report to Treasury.

Note any feedback on the quality of the report

Enclosure: No

Treasury Report: Economic scenarios

Executive Summary

The COVID-19 pandemic is a ‘**once in a century**’ public health shock that is also having a profound impact on economic and financial systems around the world and in New Zealand.

The impact of COVID-19 and related response measures on the New Zealand economy is highly uncertain. **To reflect this uncertainty this report considers several alternative paths** that the economy may take. These paths vary based on different assumptions about the time spent at different COVID-19 Alert Levels.

The first five scenarios assume no additional fiscal support measures beyond the approximate **\$20 billion of direct support that has already been announced**. We also consider the economic outlook if the world economy is weaker and takes longer to recover. Key results include:

- Falls in annual GDP are greatest in the **year to March 2021**, and vary from a **decline of around 13%** in Scenario 1, the least restrictive of the scenarios considered, to closer to one third in Scenario 3 which involves tight restrictions throughout the year.
- **Peaks in the unemployment rate vary from around 13%** in Scenario 1 **to nearly 26%** in Scenario 3.
- **Inflation remains below the 2.0%** mid-point of the target range throughout the forecast period, and monetary conditions are supportive throughout.

In addition to domestic conditions, the world outlook is also highly uncertain. The international trend has been towards longer periods of public health interventions to limit physical interactions. This implies some risk not only to activity in the affected countries, but also to the trade and financial linkages between countries, which are critical to a global economic recovery.

Should global economic recovery be slowed further by measures to combat the spread of COVID-19, we might expect the weaker world economy to have a greater impact over the medium term recovery. Weaker world demand weighs on New Zealand’s income growth, with reduced exports and domestic investment demand.

Finally, we look at **scenarios that include additional fiscal support**, which support businesses and cushion the fall in income and employment for households. These scenarios and associated nature and levels of fiscal support assumed are highly stylised and intended to be illustrative of orders of magnitude in the macroeconomic variables of interest. The timing and delivery mechanisms through which support is provided will be important in determining the overall economic impact.

Compared to Scenario 1, **an additional \$20 billion in fiscal support** (\$40 billion in total) cushions the decline in output and lowers the unemployment rate. In Scenario 2a, **additional direct fiscal support is increased by \$40 billion** (\$60 billion in total). Relative to Scenario 2, GDP growth is higher and the unemployment rate is lower by around 6 percentage points in the June 2021 quarter.

Recommended Action

We recommend that you:

- a **Note** that this Treasury Report will be released publicly on the Treasury website on Tuesday 14 April

Peter Gardiner
Manager, Forecasting, Modelling and Research

Hon Grant Robertson
Minister of Finance

Treasury Report: Economic scenarios

Purpose of Report

1. This report provides information on the economic outlook to support consideration of the direction of medium-term policy.
2. The Treasury intends to publicly release this report on 14th April 2020 to increase the transparency of the Treasury's analysis of the economic outlook and to provide context for the Government's public health considerations, Budget 2020 and the Fiscal Strategy Statement 2020.

Context

3. The COVID-19 pandemic is a '**once in a century**' public health shock that is also having a profound impact on economic and financial systems around the world and in New Zealand.
4. The international economic outlook has worsened significantly as COVID-19 has spread. The initial impact was felt primarily in China, but has quickly spread to most countries and regions in the world, and is widely recognised as a shock greater than the global financial crisis of 2007/08.
5. The world's major economies have announced, to various degrees, "lockdowns" to contain the virus. Economic activity has fallen precipitously. The global shock is evident in financial markets. Equity prices have fallen abruptly, and corporate bond spreads have widened. Central banks have responded to stresses in the financial markets with a wide range of measures to restore liquidity and confidence.
6. Oil prices have been volatile, declining more than 50% in the last 3 months, reflecting a sudden and deep drop in demand and a lack of agreement on how to address the resulting excess supply. Negotiations between major producers to reduce output is underway.
7. In contrast, prices of New Zealand's key commodity exports have remained relatively resilient to date. This likely reflects the food-based nature of many of our exports. Forestry exports have been materially affected by lower demand in China as a result of constrained activity, compounded by a surge in supply from other regions. The New Zealand dollar is 6% lower on a trade weighted basis than at the start of the year.
8. In response to the COVID-19 outbreak, governments around the world have implemented very large health system and economic support measures. The latter are helping sustain businesses and households through a period of unprecedented shut-downs. These policies have included direct payments to households, wage subsidies to employers, tax deferrals and business loan guarantees. Monetary policy has also responded with measures to reduce interest costs to firms and households, increase liquidity and support financial system stability.
9. The New Zealand economy enters this challenging time on a solid footing. Government net debt is modest, net worth is strong and the external liability position much improved in recent years. Macroeconomic and fiscal institutions are strong and enable swift adjustment to shocks. This foundation underpins the resilience of employment and activity in the scenarios used here.

10. The New Zealand Government has acted decisively to contain the virus and avoid the extreme human and economic costs of an uncontrolled outbreak. Nonetheless, necessary public health measures are having a large negative impact on the economy, compounded by containment actions taken internationally and changed behaviour of households, firms and investors in the face of large uncertainties. Both the demand and supply sides of the economy are impacted, through trade, confidence, labour and financial market channels. With the country under Alert Level 4, the usual economic activity indicators are difficult to interpret – some industries (e.g. tourism, hospitality and much of retail) have essentially zero output.
11. The path the economy takes from here is extremely uncertain. The magnitude and duration of the downturn and the subsequent pace of the recovery depends on many unknown factors, including the course of the virus, how long activity restrictions are in place, how quickly the global economy will recover, how behaviours and production might change, and how successful government policies will be in supporting households and firms.
12. The extreme uncertainty surrounding the outlook means that economic forecasting becomes less about predicting likely outcomes, and more about illustrating salient possibilities. It remains the case, nonetheless, that the analysis of the outlook is geared towards helping you to weigh up the implications of fiscal and regulatory policy decisions. The next section presents a range of scenarios to consider when determining Budget strategy and formulating potential fiscal, economic and other policy responses.

Scenarios

13. The scenarios all begin with a deep contraction in activity in the present June quarter. Exactly how large that proves to be is highly uncertain. Much depends on the success of measures to contain the virus and how quickly Alert Levels are reduced.
14. When the public health risks diminish, and the containment measures here and internationally de-escalate, the global and domestic economy will begin to recover, supported by the large fiscal packages and the significant easing in monetary policy that has taken place. The timing and pace at which this happens is unclear, and may be very different domestically versus internationally.
15. The scenarios illustrate the sensitivity of the outlook to different assumptions around the incidence and duration of various Alert Levels in New Zealand's four level alert system. For the purposes of modelling we make assumptions about the extent to which activity is directly affected at each Alert Level using assumptions about the proportion of essential services in each industry and the extent of activity that is able to be conducted at home.¹
16. We distinguish the scenarios based on the cumulative amount of time spent in different alert states, rather than the precise timing of changes between different levels. For example, in Scenario 2, it is plausible we have 6 weeks at Level 4 now and then another 6 weeks in September 2020. The possibility that the pattern of oscillation between Alert Levels may be economically significant is a further source of uncertainty.
17. It needs to be emphasised that any economic modelling of the consequences of the COVID-19 event, including our own, must be highly stylised. The modelled macroeconomic responses and dynamics are based on empirical economic

¹ MBIE estimates that the essential workforce numbers around 640,000, with 510,000 of those not able to work from home, while the number of non-essential workers that are unable to work from home is around 1.1 million people, or 49% of the workforce

relationships observed in the data, but the data contain little or no precedent for the speed and magnitude of the current economic slowdown and policy responses being observed both domestically and globally. We therefore need to be additionally cautious about how much past observed economic relationships can tell us.

18. How the international economy develops is also highly uncertain. The international trend has been towards longer periods of public health interventions to limit physical interactions. This implies some risk not only to activity in the affected countries, but also to the trade and financial linkages between countries, which are critical to global economic performance. To illustrate this possibility, we consider a scenario where the world economy is weaker and global demand is lower.
19. Finally, it is not possible to quantify precisely in advance how effective policy support measures will be, or how business and consumer sentiment will evolve. What is clear is that whatever path the global and domestic economies follow, the effects of this recession will be severe and long lasting. Activity levels in some sectors, notably international tourism, may take many years to recover. Substantial amounts of income will be irretrievably lost for many businesses and households, and for the economy as a whole.
20. **All scenarios presented include the approximately \$20 billion of fiscal support** measures that have been announced to date including wage subsidies and a range of business support initiatives.
21. Two further scenarios are included that **increase fiscal support by \$20 billion and \$40 billion**, which mitigate the falls in activity and employment to some extent. As with other elements in our modelling, the fiscal support assumed is a highly aggregated and stylised representation of what, in practice, would be implemented in the form of detailed and specific programmes and measures.

Assumptions:

22. Table 1 summarises the key assumptions about Alert Level durations made for each scenario. We have chosen the Alert Level assumptions to span a reasonable range of possibilities for the evolution of containment measures from here. The assumptions have been informed by discussions with the All-of-Government officials and the previously released public health modelling of the course of the virus.

Table 1: Key assumptions

| Scenario | COVID-19 Alert Level | Other |
|-------------------|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Scenario 1 | Level 4 – 1 month Level 3 – 1 month Level 1/2 – 10 months | Borders assumed closed to foreign visitors for up to 12 months. World annual average real GDP growth is lower than HYEPU by 6% in calendar 2020. |
| Scenario 2 | Level 4 – 3 months Level 1/2 – 9 Month | May be interpreted as a number of shorter periods at Level 4 linked by periods at Level 1 and 2. |
| Scenario 3 | Level 4 – 6 months Level 3 – 6 months | |
| Scenario 4 | Level 4 – 3 months Level 3 – 3 months Level 1/2 – 6 months | May be interpreted as a number of shorter periods at Level 4 and/or Level 3 linked by periods at Level 1 and 2. |
| Scenario 5 | As in Scenario One | World annual average real GDP growth is lower than Scenario One by 3% in calendar 2020 and 4% in 2021 |

23. To construct the scenarios, the Treasury has mapped New Zealand's four level COVID-19 alert system onto assumptions about the extent to which activity is directly curtailed. The assumptions reflect our high-level analysis of the way the operations of different industries are impacted by the movement restrictions and distancing measures imposed under each Alert Level. For example, under Alert Level 4, we make assumptions about the proportion of essential services in each industry and the extent of activity that is able to be conducted at home.² Confounding this assessment, the definitions of what constitutes safe economic activity in each level is evolving as further health and safety and risk mitigation measures are put in place. Clearly, the margin of error surrounding these estimates is large.
24. In each case we assume that activity declines for as long as the Alert Level lasts. Specifically:
- Alert Level 1 reduces output by 5-10% from normal
 - Alert Level 2 reduces output by 10-15% from normal
 - Alert Level 3 reduces output by 25% from normal
 - Alert Level 4 reduces output by 40% from normal

² MBIE estimates that the essential workforce numbers around 640,000, with 510,000 of those not able to work from home, while the number of non-essential workers that are unable to work from home is around 1.1 million people, or 49% of the workforce

25. The baseline for comparison of the macroeconomic results shown in the scenarios is the economic outlook published in the Treasury's *Half Year Economic and Fiscal Update 2019 (HYEFU)*. Table 2 summarises the results.

Scenarios 1 to 5 – no additional fiscal response

Table 2: Summary of Scenarios 1 to 5

| Year to June | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 5yr difference* |
|------------------------------------|------|------|------|------|------|------|-----------------|
| Real GDP (AAPC) | | | | | | | |
| HYEFU 2019 | 2½ | 2 | 3 | 2½ | 2½ | 2½ | |
| Scenario 1 | 3 | -4½ | -2½ | 10 | 5½ | 4 | |
| Scenario 2 | 3 | -8 | -3 | 13 | 5½ | 4 | |
| Scenario 3 | 3 | -8 | -23½ | 30 | 13 | 6½ | |
| Scenario 4 | 3 | -8 | -14 | 23 | 8½ | 5½ | |
| Scenario 5 | 3 | -4½ | -5½ | 7½ | 6½ | 5½ | |
| Unemployment rate (Jun qtr) | | | | | | | |
| HYEFU 2019 | 4 | 4½ | 4 | 4 | 4½ | 4½ | |
| Scenario 1 | 4 | 13½ | 8½ | 6 | 5 | 4½ | |
| Scenario 2 | 4 | 17½ | 9½ | 6 | 5½ | 4½ | |
| Scenario 3 | 4 | 17½ | 22 | 11 | 7 | 5 | |
| Scenario 4 | 4 | 17½ | 14½ | 8 | 6 | 4½ | |
| Scenario 5 | 4 | 13½ | 10½ | 9½ | 7½ | 6 | |
| CPI inflation (APC) | | | | | | | |
| HYEFU 2019 | 1¾ | 1¾ | 2 | 2 | 2 | 2 | |
| Scenario 1 | 1¾ | 1 | ¼ | ¾ | 1¼ | 1¾ | |
| Scenario 2 | 1¾ | 1¼ | ¼ | ¾ | 1¼ | 1½ | |
| Scenario 3 | 1¾ | 1 | -¾ | ½ | 1 | 1½ | |
| Scenario 4 | 1¾ | 1¼ | -¾ | -¼ | ¼ | 1 | |
| Scenario 5 | 1¾ | 1 | -¼ | ¼ | ¾ | 1¼ | |
| Nominal GDP (\$billion) | | | | | | | |
| HYEFU 2019 | 300 | 315 | 332 | 349 | 366 | 384 | 0 |
| Scenario 1 | 303 | 294 | 287 | 323 | 348 | 370 | -124 |
| Scenario 2 | 303 | 284 | 277 | 320 | 344 | 366 | -155 |
| Scenario 3 | 303 | 283 | 219 | 287 | 329 | 358 | -270 |
| Scenario 4 | 303 | 284 | 246 | 304 | 332 | 355 | -224 |
| Scenario 5 | 303 | 293 | 271 | 296 | 323 | 349 | -214 |

*relative to HYEFU 2019

GDP growth and Unemployment rate rounded to nearest half percent

CPI inflation rounded to nearest quarter percent

- 26. **In Scenario 1**, Alert Level 4 is in place for 4 weeks, Alert Level 3 for 4 weeks and then a mix of Alert Levels 1 and 2 for the next 10 months. Under this scenario, and in all scenarios, the borders are closed to inbound foreign visitors and services exports fall to around one-third of their previous levels, a loss of around \$16 billion over the year ending March 2021. The world economic outlook is also markedly weaker than in the HYEFU, in keeping with forecasts of other analysts, that global growth will contract this year.
- 27. Our assumptions on the activity effects of operating under this scenario are shown in Figure 1. GDP falls by around 25% in the June quarter, followed by a 20% rise in the September quarter as the lower Alert Levels enable a greater range of economic activities to resume. Deactivation of the alert level system by the June 2021 quarter leads to a further pickup in activity as confidence improves and international visitors begin to return.
- 28. Despite the steady forecast recovery, quarterly real GDP is 5% lower than our HYEFU 2019 forecast for the June quarter 2021, and the total loss in output over the March 2021 year is approximately 15% relative to HYEFU 2019 (Figure 1). Activity continues to recover over the forecast horizon and returns to its previous path in the June 2024 quarter. Over the entire forecast period, real GDP is approximately 6% lower than in HYEFU 2019. The protracted recovery reflects the deep and widespread disruption caused to the economy. Deep falls in international tourism, for example, are assumed to lead to services exports still being around 10% below previously forecast levels at the end of our forecast period.

Figure 1: Real GDP – Scenarios 1-3

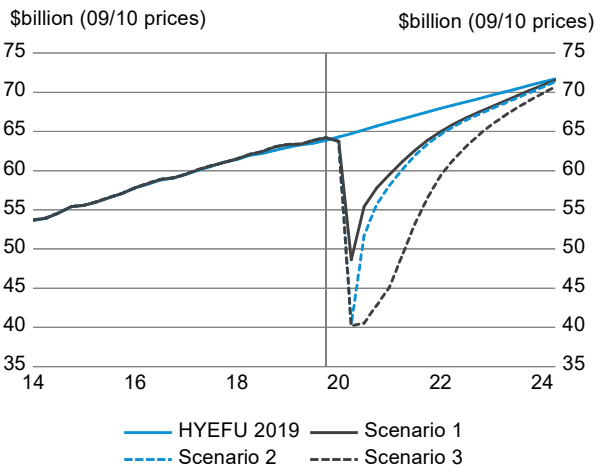
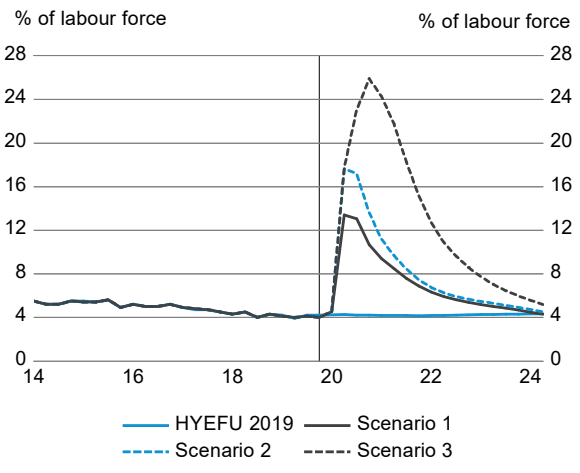


Figure 2: Unemployment rate – Scenarios 1-3



- 29. The modelling of monetary policy is not straightforward with the Official Cash Rate remaining at 0.25% for the next 12 months and quantitative easing (QE) being introduced in New Zealand. QE policies will further increase the stimulus provided by moving the Official Cash Rate to 0.25%. For simplicity, each scenario has the same level of monetary support and this is proxied by a negative interest rate in our forecast model. The trade-weighted exchange rate (TWI) is assumed to fall 6% over the June and September 2020 quarters, and to recover gradually thereafter. This is much the same in all scenarios, but we allow the pace of subsequent exchange rate appreciation to vary in line with differences in the broader economic recovery. The terms of trade are assumed to remain relatively resilient.
- 30. In the labour market, the unemployment rate rises sharply, to 13% in the June 2020 quarter before gradually easing as alert levels are lowered and more activity occurs

(Figure 2). The rise in unemployment is mitigated by existing fiscal support and slower labour supply growth, as both net migration inflows and labour force participation fall.

31. The negative effects on household income flow through to asset prices, including house prices, which weighs on household spending over the medium-term. Similarly, business investment is restrained by lower profits and the weaker demand outlook. Negative confidence effects or impediments to the flow of credit, which we do not model explicitly, may result in even weaker outcomes.
32. In the short-term, the sharp fall in crude oil prices lowers inflation (and provides some support to households, although this is initially limited by travel restrictions). Over the medium-term, weak domestic demand and weak global inflationary pressures keep annual consumers price index (CPI) inflation subdued for some time.
33. The weak outlook for economic activity, export prices and inflation results in very significantly lower levels of nominal GDP, which implies very large downgrades to government tax revenues.
34. Table 2 shows nominal GDP is over \$120 billion (6%) lower cumulatively over the next five years than in the *HYEFU*. This reflects the effect on the level of prices stemming from the period of weaker inflation and weaker economic activity.
35. There are **scenarios where growth is stronger** and the loss in GDP is less than outlined in the scenarios detailed here. The world economy could improve faster than expected, vaccines could be made available earlier than anticipated, and international tourism could resume sooner than estimated. New Zealand's growth outlook would be stronger if economic activity under different alert levels is greater than assumed, for example, strict safety protocols may enable a wider net of 'safe economic activities' as alert levels decline. We estimate that replacing **Scenarios One's Alert Level 3 with a lower alert level reduces lost output by almost 2%** over the year ending March 2021. In addition, while we have kept the monetary policy response constant, a lower effective interest rate and/or a lower exchange rate could stabilise output further.
36. **In Scenario 2**, a longer period of time is spent at Alert Level 4 (3 months), with the remaining months of the 12-month period in Levels 1 and 2. The extension to Alert Level 4 is lumped into a 3 month block, but in practice, might cover several shorter periods. The fall in June quarter GDP is considerably larger (around 40%), followed by a much larger rise in the September quarter.
37. Despite the strong bounce back, Figure 1 shows that this causes a larger loss in output. The difference between Scenario 1 and 2 represents an additional loss in real output of around 6% points over the year to March 2021, taking the real GDP in that year approximately 21% below *HYEFU* 2019. For the forecast period as a whole, real GDP is a little over 7% below *HYEFU* 2019. The rise in unemployment is also much sharper, reaching 18% in the June 2020 quarter, before falling back to 10% in the June 2021 quarter and continuing to fall steadily thereafter (Figure 2).
38. The weakness of demand that underpins the lower real GDP profile is reflected in lower CPI inflation and a reduction in nominal GDP of around \$31 billion over the forecast period compared to Scenario 1 (or \$155 billion compared to *HYEFU* 2019). Most of this additional loss occurs in the first year (see Table 2).
39. **In Scenario 3**, Alert Level 4 lasts a total of 6 months, as does Alert Level 3. This produces the worst GDP and unemployment outcomes of the scenarios we consider. However, it should not be considered a "worst case" scenario, not least because it does not account for the range of possible public health outcomes.
40. **Scenario 3** limits the ability of the economy to recover in the September quarter and enables only a partial recovery in the following two quarters. Consequently, the

additional loss in output is very large. Compared to HYEFU 2019, real GDP in the year to March 2021 is estimated to be approximately 35% lower, with the difference over the entire forecast period around 14%. The unemployment rate rises to a peak of around 25% by the end of 2020, before easing slightly in the June 2021 quarter when restrictions on activity are removed.

41. The extreme weakness of domestic demand drives annual inflation to $-3\frac{3}{4}\%$ in the June 2021 quarter and reduces nominal GDP relative to HYEFU 2019 by \$270 billion.
42. **Scenario 4** is an intermediate case, sitting between Scenarios 2 and 3 in terms of the length of time spent at Alert Levels 3 and 4. Scenario 4 might be interpreted as a scenario where the Alert Level initially de-escalates, but is later re-escalated. Table 2 shows that over the year ending June 2021, the impacts on output, employment, and nominal GDP are considerably less negative than Scenario 3, but more negative than Scenario 2.

Figure 3: Real GDP levels – Scenarios 4&5

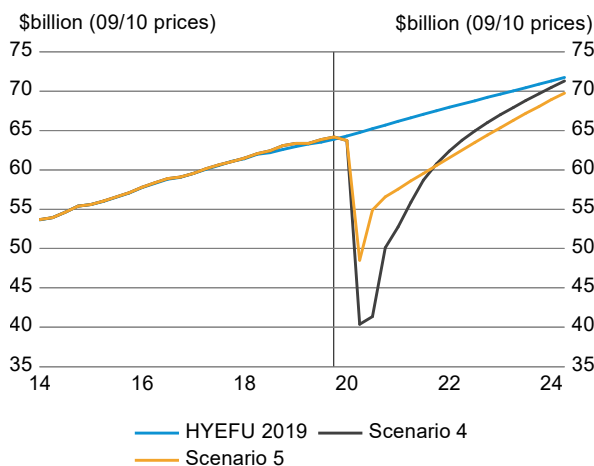
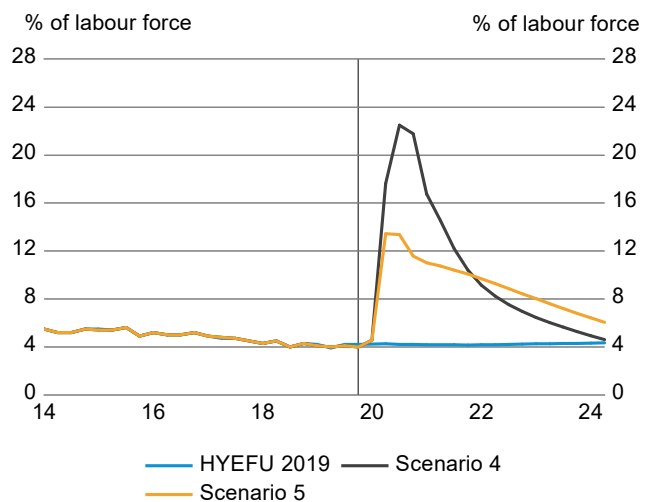


Figure 4: Unemployment rates – Scenarios 4&5



43. Inflation is weaker than in Scenario 3, reflecting the reduction in investment under Scenario 3's protracted period of highly restricted activity. As a result in Scenario 4, the supply side is stronger than in Scenario 3, which flows through to greater excess supply and weaker inflation.
44. **Scenario 5** uses the same Alert Level assumptions as Scenario 1 but assumes a larger contraction in world output and a more gradual recovery. This would be consistent with more stringent or protracted international public health interventions than assumed in Scenarios 1 to 4 to contain the virus, with more persistent scarring effects on businesses, labour markets and households.
45. In contrast to the earlier scenarios, the weaker world has a greater impact over the medium term. Weaker world demand weighs on New Zealand's income growth, with reduced exports and domestic investment demand. The decline in unemployment is more gradual. Nominal GDP is reduced by \$90 billion relative to Scenario 1 taking the difference relative to HYEFU 2019 to \$214 billion.

Fiscal policy responses: Scenarios 1a and 2a

Table 3: Summary of Scenarios 1a and 2a

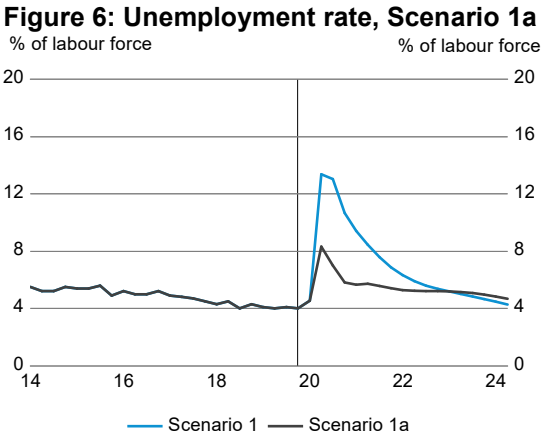
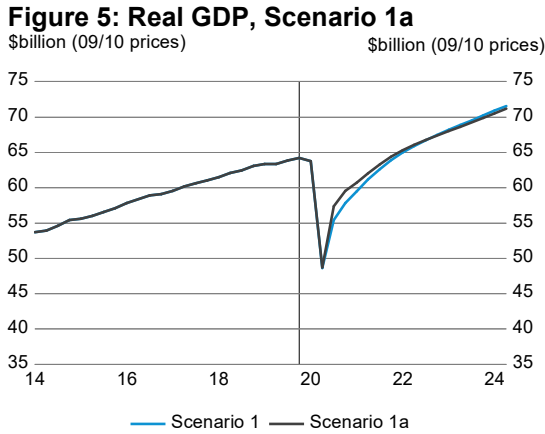
| Year to June | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 5yr difference* |
|------------------------------------|------|------|------|------|------|------|-----------------|
| Real GDP (AAPC) | | | | | | | |
| Scenario 1 | 3 | -4½ | -2½ | 10 | 5½ | 4 | |
| Scenario 1a - extra fiscal (\$20b) | 3 | -4½ | -½ | 8 | 4½ | 3½ | |
| Scenario 2 | 3 | -8 | -3 | 13 | 5½ | 4 | |
| Scenario 2a - extra fiscal (\$40b) | 3 | -8 | 1 | 10½ | 4½ | 3½ | |
| Unemployment rate (Jun qtr) | | | | | | | |
| Scenario 1 | 4 | 13½ | 8½ | 6 | 5 | 4½ | |
| Scenario 1a - extra fiscal (\$20b) | 4 | 8½ | 5½ | 5 | 5 | 4½ | |
| Scenario 2 | 4 | 17½ | 9½ | 6 | 5½ | 4½ | |
| Scenario 2a - extra fiscal (\$40b) | 4 | 9½ | 6 | 5½ | 5½ | 5 | |
| CPI inflation (APC) | | | | | | | |
| Scenario 1 | 1¾ | 1 | ¼ | ¾ | 1¼ | 1¾ | |
| Scenario 1a - extra fiscal (\$20b) | 1¾ | 1¼ | 1¼ | 1¼ | 1½ | 2 | |
| Scenario 2 | 1¾ | 1¼ | ¼ | ¾ | 1¼ | 1½ | |
| Scenario 2a - extra fiscal (\$40b) | 1¾ | 1¼ | 1 | 1¼ | 1½ | 1¾ | |
| Nominal GDP (\$billion) | | | | | | | |
| Scenario 1 | 303 | 294 | 287 | 323 | 348 | 370 | |
| Scenario 1a - extra fiscal (\$20b) | 303 | 294 | 297 | 330 | 353 | 375 | 26 |
| Scenario 2 | 303 | 284 | 277 | 320 | 344 | 366 | |
| Scenario 2a - extra fiscal (\$40b) | 303 | 283 | 289 | 326 | 349 | 370 | 27 |

*relative to above scenario

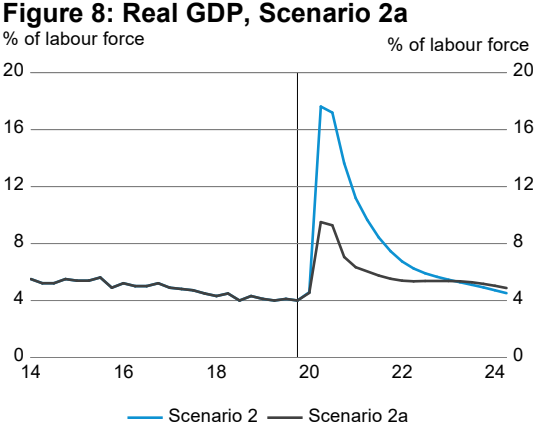
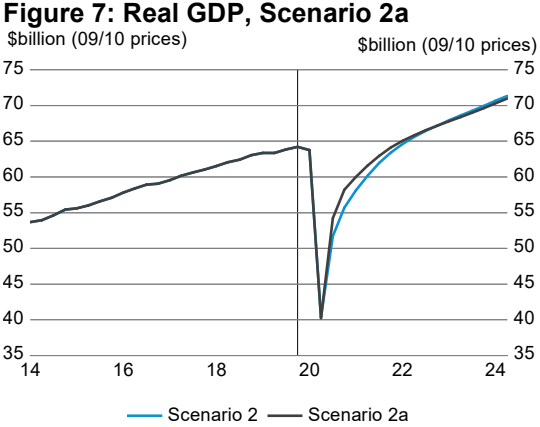
GDP growth and Unemployment rate rounded to nearest half percent

CPI inflation rounded to nearest quarter percent

46. **In Scenarios 1a and 2a** we include the impact of additional fiscal policy measures beyond the near \$20 billion in support already announced. This additional support flows to activity, income and employment. In particular, Scenario 1a assumes an additional \$20 billion in fiscal spending directed to households and businesses. However, with activity restrained under the alert system, the short-term effects on activity are limited (Figure 5). Nonetheless, the package limits the rise in unemployment to less than 10% (Figure 6), and reduces the loss in nominal GDP by around \$20 billion (Table 3).
47. If there was further fiscal support, in addition to that already included in scenario 1a, activity would pick up more strongly from the September quarter and unemployment would decline more quickly during 2020.



48. Scenario 2a adds an extra \$40 billion in fiscal support measures to Scenario 2. Figure 8 shows the rise in unemployment is limited to 10% or so, while Table 3 shows nominal GDP is around \$30 billion higher. Less additional fiscal support will see the economy recover more slowly. The unemployment rate would still likely peak around 10% in the September quarter, although as activity is not as strong over the remainder of the year, unemployment will remain at a higher level for longer than in Scenario 1a.



49. **Annex 2: Scenarios 1 to 5, March years**

| Year to March | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 5yr difference* |
|------------------------------------|------|------|------|------|------|------|--------------------|
| Real GDP (AAPC) | | | | | | | |
| HYEFU 2019 | 2½ | 2 | 2½ | 3 | 2½ | 2½ | |
| Scenario 1 | 3 | 1½ | -13½ | 14 | 6 | 4 | |
| Scenario 2 | 3 | 1½ | -19½ | 21½ | 7 | 4 | |
| Scenario 3 | 3 | 1½ | -34 | 29½ | 16½ | 7½ | |
| Scenario 4 | 3 | 1½ | -27½ | 29 | 10 | 6 | |
| Scenario 5 | 3 | 1½ | -15 | 10½ | 6½ | 5½ | |
| Unemployment rate (Mar qtr) | | | | | | | |
| HYEFU 2019 | 4 | 4 | 4 | 4 | 4 | 4½ | |
| Scenario 1 | 4 | 4½ | 9½ | 6½ | 5 | 4½ | |
| Scenario 2 | 4 | 4½ | 11 | 6½ | 5½ | 4½ | |
| Scenario 3 | 4 | 4½ | 24½ | 12½ | 7½ | 5½ | |
| Scenario 4 | 4 | 4½ | 16½ | 9 | 6½ | 5 | |
| Scenario 5 | 4 | 4½ | 11 | 9½ | 8 | 6½ | |
| CPI inflation (APC) | | | | | | | |
| HYEFU 2019 | 1½ | 2 | 1¾ | 2 | 2 | 2 | |
| Scenario 1 | 1½ | 2 | 0 | ¾ | 1¼ | 1¾ | |
| Scenario 2 | 1½ | 2 | 0 | ½ | 1 | 1½ | |
| Scenario 3 | 1½ | 2 | -¾ | 0 | 1 | 1½ | |
| Scenario 4 | 1½ | 2 | -¾ | -½ | ¼ | 1 | |
| Scenario 5 | 1½ | 2 | -½ | ¼ | ½ | 1¼ | |
| Nominal GDP (\$billion) | | | | | | | |
| HYEFU 2019 | 297 | 312 | 327 | 345 | 362 | 379 | 0 |
| Scenario 1 | 300 | 314 | 269 | 316 | 342 | 364 | -121 |
| Scenario 2 | 300 | 314 | 249 | 312 | 339 | 361 | -150 |
| Scenario 3 | 300 | 314 | 205 | 271 | 321 | 351 | -263 |
| Scenario 4 | 300 | 314 | 224 | 294 | 326 | 350 | -217 |
| Scenario 5 | 300 | 314 | 257 | 289 | 316 | 343 | -206 |

*relative to Scenario HYEFU 2019

GDP growth and Unemployment rate rounded to nearest half percent

CPI inflation rounded to nearest quarter percent

Annex 3: Scenarios 1a and 2a, March years

| Year to March | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 5yr difference* |
|------------------------------------|-------|-------|---------|--------|-------|-------|--------------------|
| Real GDP (AAPC) | | | | | | | |
| Scenario 1 | 3 | 1 1/2 | -13 1/2 | 14 | 6 | 4 | |
| Scenario 1 + extra fiscal | 3 | 1 1/2 | -11 1/2 | 12 1/2 | 5 | 3 1/2 | |
| Scenario 2 | 3 | 1 1/2 | -19 1/2 | 21 1/2 | 7 | 4 | |
| Scenario 2 + extra fiscal | 3 | 1 1/2 | -16 1/2 | 19 1/2 | 5 1/2 | 4 | |
| Unemployment rate (Jun qtr) | | | | | | | |
| Scenario 1 | 4 | 4 1/2 | 9 1/2 | 6 1/2 | 5 | 4 1/2 | |
| Scenario 1 + extra fiscal | 4 | 4 1/2 | 5 1/2 | 5 1/2 | 5 | 5 | |
| Scenario 2 | 4 | 4 1/2 | 11 | 6 1/2 | 5 1/2 | 4 1/2 | |
| Scenario 2 + extra fiscal | 4 | 4 1/2 | 6 1/2 | 5 1/2 | 5 1/2 | 5 | |
| CPI inflation (APC) | | | | | | | |
| Scenario 1 | 1 2/4 | 2 | -0 | 3/4 | 1 1/4 | 1 3/4 | |
| Scenario 1 + extra fiscal | 1 2/4 | 2 | 1 | 1 1/4 | 1 2/4 | 1 3/4 | |
| Scenario 2 | 1 2/4 | 2 | -0 | 2/4 | 1 | 1 2/4 | |
| Scenario 2 + extra fiscal | 1 2/4 | 2 | 2/4 | 1 1/4 | 1 1/4 | 1 2/4 | |
| Nominal GDP (\$billion) | | | | | | | |
| Scenario 1 | 300 | 314 | 269 | 316 | 342 | 364 | |
| Scenario 1 + extra fiscal | 300 | 314 | 276 | 322 | 347 | 369 | 25 |
| Scenario 2 | 300 | 314 | 249 | 312 | 339 | 361 | -30 |
| Scenario 2 + extra fiscal | 300 | 314 | 259 | 319 | 344 | 365 | -4 |

*difference relative to Scenario 1