Medium-term Projection Assumptions

2022 Budget Economic and Fiscal Update of the Fiscal Strategy Model (FSM)

19 May 2022

This version of the Fiscal Strategy Model (FSM) uses economic and fiscal forecasts prepared for the 2022 *Budget Economic and Fiscal Update (BEFU)*. The projection period begins in 2026/27 and extends a decade to 2035/36. These post-forecast fiscal projections are based on the long-run technical and policy assumptions outlined below.

The Fiscal Strategy Model (FSM) that produces the projections can be found on the Treasury website at https://treasury.govt.nz/government/fiscalstrategy/model

Forecasts attempt to predict future outcomes by using wide-ranging resources, comprehensive modelling and expert opinion and knowledge. Projections, which arise from and are heavily influenced by their forecast base, are potential paths. These paths are based on trend or long-run averages for growth rates or levels of key economic, fiscal and demographic variables, and generally assume no policy changes beyond those built into their forecast base.

Economic projections and assumptions

Table 1 – Summary of economic projections[1]

Year ending 30 June	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	…..	2036
			Forecasts						Projections			
Labour force	1.8	0.9	1.0	1.3	1.5	1.2	1.2	1.1	1.0	0.9	...	0.6
Unemployment rate[2]	3.2	3.1	4.0	4.7	4.8	4.5	4.3	4.3	4.3	4.3	...	4.3
Average weekly hours worked[3]	32.6	33.8	33.7	33.7	33.7	33.7	33.7	33.7	33.7	33.7	...	33.7
Labour productivity growth[4]	2.8	-0.5	0.9	1.2	1.1	1.0	1.0	1.0	1.0	1.0	...	1.0
Real GDP[5]	1.7	4.2	0.7	1.6	2.5	2.6	2.5	2.1	2.0	2.0	...	1.6
Nominal GDP[6]	5.8	10.8	4.9	4.8	5.1	4.8	4.5	4.1	4.1	4.0	...	3.7
Consumers Price Index (CPI) (annual percentage change)	6.7	5.2	3.6	2.7	2.2	2.1	2.0	2.0	2.0	2.0	...	2.0
Government 10-year bonds (average percentage rate)	2.5	3.4	3.7	4.0	4.1	4.2	4.2	4.3	4.3	4.3	...	4.3
Nominal average hourly wage	4.0	5.6	6.2	5.7	4.9	3.2	3.0	3.0	3.0	3.0	...	3.0

Notes:

1   Annual average percentage change unless otherwise stated
2   Total unemployed as a percentage of the labour force (annual average)
3   Average weekly hours worked (total hours worked ÷ total employed labour force)
4   Hours worked measure
5   Production measure, 2009/10 base
6   Expenditure measure

Sources: The Treasury, Statistics New Zealand

Most economic variables are close to their assumed long-run trend growth rates or levels by the end of the forecast. If they differ from this assumption by the final forecast year, then they are transitioned to attain it over the early projected years. The annual convergence rate assumed is based on recent actual and forecast performance. The five economic variables for which stable assumptions are made and the projected year in which they attain these in the 2022 BEFU FSM are displayed below.

Table 2 – Economic variables with long-run stable assumptions and year of attainment

Economic variable	Stable assumption	End-of-forecast value	Projected year attained
Unemployment rate	4.25%	4.80%	2027/28
Average weekly hours worked	33.7	33.7	2026/27
Labour productivity annual growth	1.0%	1.1%	2027/28
Consumers Price Index (CPI) annual growth (inflation measure)	2.0%	2.2%	2027/28
Government 10-year bond annual return rate	4.3%	4.1%	2029/30

Source: The Treasury

Projected real GDP grows from its forecast base via the annual combined change in the size of the employed labour force, the average hours they work and their productivity. Once the latter two variables, as well as the unemployment rate, stabilise in projected years the only variation in projected real GDP arises from that of the labour force. Statistics New Zealand's population and labour force projections are used in projecting out the labour force's size and annual growth.

Growth in nominal GDP in each projected year is achieved by adding CPI-based inflation to the real GDP growth. The long-run stable assumption for CPI inflation of 2 per cent per year matches the midpoint of the band set in remit for the Monetary Policy Committee. Nominal GDP growth is used to project many fiscal variables, including tax revenue. It is also the denominator for most major fiscal indicators, such as net core Crown debt to GDP.

Fiscal projections and assumptions

Fiscal projections have changed from those published as part of the 2021 *Half Year Economic and Fiscal Update* (HYEFU) version of FSM. This reflects changes in the economic and fiscal forecast bases of the projections.

Further changes have been made to this 2022 BEFU version of the FSM because the structure of the fiscal forecasts has changed in order to produce the new net debt measure, which includes Crown entity borrowings, advances and New Zealand Superannuation Fund (NZSF) assets. This has required some modelling changes to the FSM so that it can project out this new debt measure. This has made, for the majority of fiscal variables in the model, no difference relative to how they had been projected in the FSM prior to these changes. In a few cases there have been very small changes to projected values, in the range of a 0.1 per cent difference, or even less, by the final projected year. These small differences in the projections have arisen because of forecast data related to the NZSF's financial assets and liabilities being divided up differently now to match components of the new net debt measure. This, in turn, has required some changes to the way in which these NZSF assets and liabilities are projected, although the overall closing balance of the NZSF has not altered due to these modelling adaptations. Incorporating the new net debt variable, and fiscal variables related to it, has also led to some changes in the layout of the main modelling worksheet.

Table 3 – Summary of fiscal projections, as percentages of nominal GDP

Year ending 30 June	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	…..	2036
			Forecasts					Projections				
Core Crown revenue	31.2	31.3	31.5	31.8	32.2	32.1	32.0	31.9	31.8	31.7	...	31.2
Core Crown expenses	35.4	31.6	31.1	30.4	29.8	29.7	29.7	29.7	29.7	29.7	...	29.5
Core Crown residual cash	−8.8	−7.3	−2.2	1.8	3.8	0.2	0.4	0.4	0.4	0.4	...	0.7
Total Crown revenue	37.5	37.9	38.3	38.7	39.8	39.8	39.7	39.7	39.6	39.5	...	39.0
Total Crown expenses	42.7	39.5	38.8	38.0	38.2	38.3	38.3	38.5	38.6	38.8	...	39.1
Total Crown OBEGAL[1]	−5.2	−1.7	−0.6	0.6	1.5	1.5	1.3	1.1	0.8	0.5	...	−0.1
Total Crown operating balance[2]	−7.7	−0.4	0.8	2.1	3.0	3.0	2.9	2.7	2.5	2.2	...	1.7
Net debt[3]	16.9	18.7	19.9	17.3	15.0	13.0	10.9	9.0	7.2	5.4	...	−3.1
Net core Crown debt[4]	36.9	40.8	41.2	37.5	31.9	30.1	28.4	26.8	25.2	23.8	...	16.7
Total Crown net worth	36.0	32.1	31.5	32.1	33.6	35.0	36.4	37.6	38.6	39.3	...	41.6
Net worth attributable to the Crown[5]	34.2	30.5	29.9	30.6	32.1	33.5	34.9	36.1	37.1	37.8	...	40.1

Notes:
1   Operating balance before gains/(losses)
2   Excludes minority interests
3   Includes Crown entity borrowings and financial assets of the NZS Fund and core Crown advances
4   Excludes financial assets of the NZS Fund and core Crown advances and excludes Crown entity borrowings
5   Excludes assets and liabilities belonging to minority interests

Table 4 – Summary of fiscal assumptions

Tax revenue	Linked to growth in nominal GDP. The overall stable long-run core Crown tax to GDP ratio assumed is 27.6% of GDP. All tax categories change at a rate of 0.02 percentage points of GDP per annum from their end-of-forecast percentage of GDP, either upward or downward, until they reach a long-run stable percentage. These stable assumptions are based on historical data, taking into account tax rate and policy changes that could affect them. • Source deductions (mainly PAYE tax on salary and wages) track towards a stable percentage to nominal GDP of 11.3 per cent. • The stable percentage for corporate tax (dominated by company tax) is 4.5 per cent. • The assumption for goods and services tax (GST) is 7.2 per cent. • Hypothecated transport taxes, used to fund most transport-related operating and capital expenditure, stabilise at 1.0 per cent of GDP. • All remaining tax types are aggregated into the other taxes category, which uses a long-run stable assumption of 3.4 per cent of GDP. The elimination from core Crown tax to total Crown tax applies a long-run stable assumption of 0.2 per cent of GDP.
New Zealand Superannuation (NZS)	Demographically adjusted and linked to net wage growth, via the "wage floor". The latter refers to the net (after-tax) weekly NZS rate for a couple as set in legislation to lie between 66 per cent and 72.5 per cent of net (after tax) average ordinary time weekly earnings.
Jobseeker Support, Supported Living Payment and Sole Parent Support	These three main working-age benefits are grown via demographic adjustment of recipient numbers and net average wage growth for payment rate indexation. Modelling is incorporated to reduce or increase recipient growth in early projected years if recipient numbers are considered to be unusually high or low at the end of the forecast period.
Other benefits	Demographically adjusted and linked to inflation for payment rate indexation. Modelling is incorporated to reduce or increase recipient growth in early projected years if recipient numbers are considered to be unusually high or low at the end of the forecast period.
Health and education	Held constant at the end-of-forecast values, because their growth is assumed to come from a share of the projected Operating Allowance annual increment.
Other expenditure	Held constant at the end-of-forecast values, because their growth is assumed to come from a share of the projected Operating Allowance annual increment. Environmental protection services projections do include future projected amounts related to the Climate Emergency Response Fund
Finance costs	A function of debt levels and interest rates.
Operating allowance	$3.0 billion in 2026/27. Operating Allowances continue to grow at 2 per cent per annum from this value in later projected years.
Capital allowance	$7.0 billion in 2026/27. Capital Allowances continue to grow at 2 per cent per annum from this value in later projected years.
New Zealand Superannuation Fund (NZSF)	Contributions to the NZSF follow the Government's planned track until 2021/22, after which they revert to values determined by the legislated formula and calculated by the Treasury's NZSF model using the 2022 BEFU economic and fiscal forecast inputs.