# Medium-term Projection Assumptions

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## 2021 Half Year Economic and Fiscal update of the Fiscal Strategy Model (FSM)

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This version of the Fiscal Strategy Model (FSM) uses economic and fiscal forecasts prepared for the 2021 *Half Year Economic and Fiscal Update* (HYEFU). 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

## 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 | 2.1 | 1.0 | 1.2 | 1.3 | 1.4 | 1.2 | 1.2 | 1.1 | 1.0 | 0.9 | ... | 0.6 |
| Unemployment rate[2] | 3.2 | 3.2 | 3.5 | 3.8 | 4.0 | 4.1 | 4.2 | 4.3 | 4.3 | 4.3 | ... | 4.3 |
| Average weekly hours worked[3] | 32.7 | 33.8 | 33.8 | 33.8 | 33.8 | 33.7 | 33.7 | 33.7 | 33.7 | 33.7 | ... | 33.7 |
| Labour productivity growth[4] | 1.6 | 0.4 | 1.4 | 1.3 | 1.2 | 1.1 | 1.1 | 1.0 | 1.0 | 1.0 | ... | 1.0 |
| Real GDP[5] | 0.8 | 4.9 | 2.2 | 2.3 | 2.3 | 2.2 | 2.1 | 2.0 | 2.0 | 1.9 | ... | 1.6 |
| Nominal GDP[6] | 6.8 | 8.6 | 5.3 | 5.1 | 4.8 | 4.4 | 4.2 | 4.0 | 4.1 | 4.0 | ... | 3.7 |
| Consumers Price Index (CPI) (annual percentage change) | 5.1 | 3.2 | 2.7 | 2.4 | 2.2 | 2.1 | 2.0 | 2.0 | 2.0 | 2.0 | ... | 2.0 |
| Government 10-year bonds (average percentage rate) | 2.3 | 2.8 | 3.1 | 3.3 | 3.4 | 3.5 | 3.6 | 3.7 | 3.8 | 3.8 | ... | 4.1 |
| Nominal average hourly wage | 3.8 | 4.5 | 4.6 | 4.5 | 4.3 | 3.2 | 3.1 | 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

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.

Most economic variables such as the unemployment rate, CPI growth, annual labour productivity growth, average weekly hours worked, and nominal average hourly wage growth are close to their assumed long-run trend growth rates or levels by the end of the forecast. Over the early years of the projection period, they are assumed to transition to reach their long run assumed rates by 2028/29. In these cases, the annual convergence rate assumed is based on recent actual and forecast performance. The government 10-year bond annual rate of return rises gradually over the entire decade of projections, reaching 4.1% by 2035/36, which is still not at the level of its long-run assumed value of 4.3%.

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. 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 is 2 per cent per year, which 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

***Table 2*** – Summary of fiscal projections, as percentages of nominal GDP

| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year ended 30 June | Forecasts | | | | | Projections | | | | | | | | | |
| Core Crown revenue | 30.5 | 31.0 | 31.2 | 31.4 | 31.6 | 31.5 | 31.4 | 31.3 | 31.2 | 31.1 | 31.0 | 30.9 | 30.8 | 30.8 | 30.7 |
| Core Crown expenses | 35.3 | 30.5 | 30.1 | 29.5 | 29.3 | 29.2 | 29.2 | 29.3 | 29.3 | 29.3 | 29.2 | 29.1 | 29.1 | 29.0 | 29.0 |
| Core Crown residual cash | -9.4 | -5.5 | -1.9 | 3.3 | 2.7 | -0.1 | -0.1 | -0.1 | 0.0 | 0.0 | 0.1 | 0.1 | 0.2 | 0.2 | 0.3 |
| Total Crown revenue | 37.0 | 37.5 | 37.8 | 38.0 | 38.0 | 38.0 | 37.9 | 37.9 | 37.8 | 37.7 | 37.6 | 37.5 | 37.5 | 37.4 | 37.3 |
| Total Crown expenses | 42.8 | 37.7 | 37.2 | 36.5 | 36.1 | 36.2 | 36.4 | 36.5 | 36.6 | 36.8 | 36.8 | 36.8 | 36.9 | 36.9 | 36.9 |
| Total Crown OBEGAL[1] | -5.7 | -0.2 | 0.5 | 1.4 | 1.8 | 1.7 | 1.5 | 1.3 | 1.1 | 0.8 | 0.8 | 0.6 | 0.5 | 0.4 | 0.2 |
| Total Crown operating balance[2] | -6.6 | 1.0 | 1.9 | 2.8 | 3.2 | 3.2 | 3.0 | 2.8 | 2.7 | 2.5 | 2.4 | 2.4 | 2.3 | 2.2 | 2.1 |
| Core Crown GSID[3] | 44.5 | 46.4 | 45.7 | 40.1 | 35.5 | 34.3 | 33.2 | 32.2 | 31.1 | 30.1 | 29.0 | 28.0 | 26.9 | 25.9 | 24.8 |
| Net core Crown debt[4] | 37.6 | 40.1 | 39.9 | 34.6 | 30.2 | 29.0 | 27.8 | 26.7 | 25.6 | 24.6 | 23.5 | 22.4 | 21.4 | 20.3 | 19.3 |
| Total Crown net worth | 36.6 | 34.7 | 34.9 | 36.0 | 37.7 | 39.3 | 40.7 | 42.0 | 43.1 | 43.9 | 44.7 | 45.4 | 46.0 | 46.5 | 46.9 |
| Net worth attributable to the Crown[5] | 35.1 | 33.4 | 33.6 | 34.8 | 36.4 | 38.0 | 39.4 | 40.7 | 41.8 | 42.6 | 43.4 | 44.1 | 44.7 | 45.3 | 45.7 |

Notes:

1 Operating balance before gains/(losses)

2 Excludes minority interests

3 Gross sovereign-issued debt

4 Excludes financial assets of the NZS Fund and core Crown advances

5 Excludes assets and liabilities belonging to minority interests

Source: The Treasury

Fiscal projections have changed from those published as part of the 2021 *Budget Economic and Fiscal Update* (BEFU) version of FSM. This reflects changes in the economic and fiscal forecast bases of the projections. We have also updated the transition rate, for tax types to move from their end-of-forecast percentages of nominal GDP to their long-run assumed percentages of GDP, from 0.05 percentage points (ppts) of GDP to 0.02 ppts. Overall core Crown tax to GDP is rising across the 2021 HYEFU forecast horizon, reaching 29.5% of GDP by the last forecast year. Because this is well above the long-run assumption of 27.6% of GDP, the transition rate has been reduced to provide a more gradually reducing path of tax-to-GDP in the projected years. The long-run assumption for the nominal annual return rate of the government 10-year bond has also been updated, from 4.8% to 4.3%. More detail can be found about the reasons for this in the Background Paper *Long-term projections of the New Zealand Government's interest rate*, available at https://www.treasury.govt.nz/publications/background/ltfs21-bg-long-term-projections-nz-governments-interest-rate

*Table 3* – 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.<br>• Source deductions (mainly PAYE tax on salary and wages) track towards a stable percentage to nominal GDP of 11.3 per cent.<br>• The stable percentage for corporate tax (dominated by company tax) is 4.5 per cent.<br>• The assumption for goods and services tax (GST) is 7.2 per cent.<br>• Hypothecated transport taxes, used to fund most transport-related operating and capital expenditure, stabilise at 1.0 per cent of GDP.<br>• 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.<br>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. |
| Finance costs | A function of debt levels and interest rates. |
| Operating allowance | $2.75 billion in 2026/27. Operating Allowances continue to grow at 2 per cent per annum from this value in later projected years. |
| Capital allowance | $8 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 2021 HYEFU economic and fiscal forecast inputs. |