THE TREASURY
Kaitohutohu Kaupapa Rawa

Half Year Economic and Fiscal Update (HYEFU) 2017 Projection Assumptions out to 2031/32

14 December 2017

The economic and fiscal forecasts, from 2017/18 to 2021/22, are detailed in the 2017 *Half Year Economic and Fiscal Update* (HYEFU). The projection period begins in 2022/23 and extends out a decade to 2031/32. 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 www.treasury.govt.nz/government/fiscalstrategy/model

Economic projections and assumptions

Table 1 – Summary of economic projections[1]

Year ending 30 June	2018	2019	2020	2021	2022	2023	2024	2025	2026	...	2032
	Forecasts					Projections					
Labour force	3.0	1.7	1.3	1.0	1.0	0.8	0.8	0.8	0.8	...	0.6
Unemployment rate[2]	4.6	4.5	4.3	4.0	4.1	4.2	4.3	4.3	4.3	...	4.3
Average weekly hours worked	33.8	33.7	33.6	33.6	33.5	33.5	33.5	33.5	33.5	...	33.5
Average weekly hours paid	33.0	32.9	32.8	32.8	32.7	32.7	32.7	32.7	32.7	...	32.7
Labour productivity growth[3]	(0.7)	2.0	1.7	1.5	1.3	1.5	1.5	1.5	1.5	...	1.5
Real GDP[4]	2.9	3.6	3.0	2.6	2.1	2.2	2.2	2.3	2.3	...	2.1
Nominal GDP[5]	5.0	5.3	5.0	4.8	4.2	4.3	4.3	4.4	4.3	...	4.1
Consumers Price Index (CPI) (annual percentage change)	2.0	1.8	2.1	2.2	2.3	2.1	2.0	2.0	2.0	...	2.0
Government 10-year bonds (average percentage rate)	2.9	3.2	3.8	4.1	4.3	4.5	4.7	4.9	5.1	...	5.3
Nominal average hourly wage	2.6	3.2	3.2	3.3	3.5	3.6	3.5	3.5	3.5	...	3.5

Notes:

1 Annual average percentage change unless otherwise stated

2 Total unemployed as a percentage of the labour force (annual average)

3 Hours worked measure

4 Production measure, 2009/10 base

5 Expenditure measure

Sources: The Treasury, Statistics New Zealand

Forecasts are an attempt to predict future outcomes, 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. They also normally involve no behavioural or other responses to outcomes or trend movements, be they beneficial or adverse.

While most economic variables are at, or very close to, their assumed long-run trend growth rates or levels by the end of the forecast, a few may still need some transition over the early years of projections. In such cases the annual convergence rate assumed is based on recent actual and forecast performance.

In the 2017 Half Year EFU projection, the unemployment rate, growth in the Consumers Price Index (CPI) and the government 10-year bond rate are not at their long-run assumed values by 2022/23, the first projected year. CPI takes one more year (2023/24) to reach its stable growth rate and the unemployment rate reaches its stable level in the same year. The government bond rate takes until 2026/27, which is the fifth year of the projections, to stabilise.

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. The average hours worked grows in line with the average weekly hours paid.

For the 2017 Half Year EFU projections the unemployment rate, the average hours worked and labour productivity annual growth have all reached their assumed stable levels or rates by 2023/24, which is two years into the projection horizon. Beyond this point annual real GDP growth is derived purely from growth in the labour force for that year coupled with the stable long-run annual labour productivity growth assumption of 1.5 per cent.

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 middle of the Policy Targets Agreement band. Nominal GDP growth is used to project many fiscal variables, including tax revenue. Also, nominal GDP is 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

Year ending 30 June	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**...**	**2032**
			Forecasts					**Projections**			
Core Crown revenue	29.6	29.7	29.9	30.1	30.4	30.5	30.5	30.6	30.6	...	30.4
Core Crown expenses	28.5	28.6	28.2	28.0	27.6	27.5	27.6	27.6	27.7	...	28.2
Core Crown residual cash	(0.9)	(1.5)	(0.8)	0.1	0.7	0.7	0.3	0.0	(0.3)	...	(0.8)
Total Crown revenue	37.8	37.8	38.0	38.1	38.2	38.4	38.5	38.5	38.6	...	38.4
Total Crown expenses	36.7	36.7	36.3	36.0	35.5	35.6	35.7	35.7	35.8	...	36.1
Total Crown OBEGAL[1]	0.9	0.9	1.6	2.0	2.5	2.7	2.6	2.7	2.7	...	2.2
Total Crown operating balance[2]	2.1	1.9	2.7	3.1	3.8	3.8	3.8	3.9	4.0	...	3.8
Core Crown GSID[3]	31.9	30.0	28.5	26.0	27.1	25.1	23.6	22.6	22.1	...	22.4
Net core Crown debt[4]	21.7	22.2	21.9	20.8	19.3	17.7	16.7	15.9	15.5	...	15.9
Total Crown net worth	42.8	42.6	43.2	44.4	46.4	48.2	50.0	51.9	53.7	...	62.9
Net worth attributable to the Crown[5]	40.7	40.6	41.4	42.7	44.7	46.6	48.5	50.3	52.2	...	61.6

Notes:

1 Operating balance before gains/(losses)

2 Excludes minority interests

3 Gross sovereign-issued debt (floor set to 20% of GDP)

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 2017 *Pre-Election Economic and Fiscal Update* (PREFU), reflecting changes in the economic and fiscal forecast bases of the projections, as well as changes in policy.

Table 3 – Summary of fiscal assumptions

Tax revenue	Linked to growth in nominal GDP. All tax categories change at a rate of 0.05 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 of GDP. These stable assumptions are based on historical data, taking into account tax rate and policy changes that could affect them. The transitional adjustment is to ensure that tax revenue projections are based on percentages of GDP that are neither higher nor lower than would be expected when the economy is performing at its potential. Once the long-term stable percentages are reached, the tax types remain at them in later projected years. Source deductions (mainly PAYE tax on salary and wages) track towards a stable percentage to nominal GDP of 11.0 per cent. The stable percentage for corporate tax (dominated by company tax) is 4.2 per cent. The assumption for goods and services tax (GST) is 7.4 per cent. Hypothecated transport taxes, used to fund most transport-related operating and capital expenditure, stabilise at 1.3 per cent of GDP and all remaining tax types are aggregated into the Other taxes category, which uses a long-run stable assumption of 4.4 per cent of GDP. The elimination from core Crown tax to total Crown tax applies a long-run stable assumption of 0.3 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 being constrained in legislation to lie between 65 per cent and 72.5 per cent of net average weekly earnings.
Other benefits	Demographically adjusted and linked to inflation.
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	$2.2 billion in 2022/23. Operating Allowances continue to grow at 4.5 per cent per annum from this value in later projected years.
Capital Allowance	$9.5 billion in 2022/23. Capital Allowances continue to grow at 4.5 per cent per annum from this value in later projected years.
NZS Fund	Capital contributions to the NZS Fund begin again in 2017/18, and by 2022/23 are restored to a level consistent with the contribution formulae in the New Zealand Superannuation and Retirement Income Act 2001.