Half Year Economic and Fiscal Update 2016
Additional Information

The following information forms part of the *Half Year Economic and Fiscal Update 2016 (Half Year Update)* released by the Treasury on 8 December 2016. This information provides further details on the *Half Year Update* and should be read in conjunction with the published document. The additional information includes:

- **Detailed economic forecast information** – tables providing breakdowns of the economic forecasts.
- **Treasury and Inland Revenue tax forecasts** – detailed tax revenue and receipts tables comparing Treasury's forecasts with Inland Revenue's forecasts.
- **Tax Policy changes** – there were no material changes to forecast tax revenue since the *Budget Economic and Fiscal Update 2016 (Budget Update)* as a result of revenue and/or spending initiatives.
- **Additional fiscal indicators** – estimates of the cyclically-adjusted balance and fiscal impulse.
- **Accounting policies** – outline of the specific Crown accounting policies.

Detailed Economic Forecast Information

This section includes tables with additional detail on the economic forecasts in the *Half Year Update.*

The economic numbers and forecasts in this section were finalised on 10 November 2016.

Table 1	Real Gross Domestic Product
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Table 1 – Real Gross Domestic Product

Production based chain volume series expressed in 2009/10 prices

Seasonally adjusted

	$ million	Quarterly % change	Annual % change	Annual average % change
2014Q1	53,811	1.4	3.5	2.8
2014Q2	54,302	0.9	3.6	3.0
2014Q3	54,802	0.9	3.7	3.2
2014Q4	55,262	0.8	4.1	3.7
2015Q1	55,397	0.2	2.9	3.6
2015Q2	55,603	0.4	2.4	3.3
2015Q3	56,043	0.8	2.3	2.9
2015Q4	56,553	0.9	2.3	2.5
2016Q1	57,047	0.9	3.0	2.5
2016Q2	57,584	0.9	3.6	2.8
2016Q3	58,045	0.8	3.6	3.1
2016Q4	58,567	0.9	3.6	3.4
2017Q1	59,142	1.0	3.7	3.6
2017Q2	59,625	0.8	3.5	3.6
2017Q3	60,120	0.8	3.6	3.6
2017Q4	60,653	0.9	3.6	3.6
2018Q1	61,155	0.8	3.4	3.5
2018Q2	61,644	0.8	3.4	3.5
2018Q3	62,091	0.7	3.3	3.4
2018Q4	62,506	0.7	3.1	3.3
2019Q1	62,890	0.6	2.8	3.1
2019Q2	63,266	0.6	2.6	2.9
2019Q3	63,617	0.6	2.5	2.7
2019Q4	63,984	0.6	2.4	2.6
2020Q1	64,363	0.6	2.3	2.4
2020Q2	64,729	0.6	2.3	2.4
2020Q3	65,079	0.5	2.3	2.3
2020Q4	65,429	0.5	2.3	2.3
2021Q1	65,802	0.6	2.2	2.3
2021Q2	66,187	0.6	2.3	2.3

Source: Statistics New Zealand, the Treasury

Table 2 – Consumers Price Index and Exchange Rates

	Consumers Price Index			Exchange rates	
	Index	Quarterly % change	Annual % change	TWI	USD
2014Q1	1192	0.3	1.5	80.0	0.84
2014Q2	1195	0.3	1.6	81.5	0.86
2014Q3	1199	0.3	1.0	80.1	0.84
2014Q4	1197	-0.2	0.8	77.5	0.78
2015Q1	1195	-0.2	0.3	77.9	0.75
2015Q2	1200	0.4	0.4	76.2	0.73
2015Q3	1204	0.3	0.4	69.8	0.65
2015Q4	1198	-0.5	0.1	72.1	0.67
2016Q1	1200	0.2	0.4	72.2	0.66
2016Q2	1205	0.4	0.4	73.6	0.69
2016Q3	1209	0.3	0.4	77.0	0.72
2016Q4	1213	0.3	1.2	77.0	0.72
2017Q1	1217	0.3	1.4	77.0	0.72
2017Q2	1222	0.5	1.5	76.5	0.71
2017Q3	1231	0.7	1.8	75.8	0.70
2017Q4	1232	0.1	1.6	75.3	0.70
2018Q1	1239	0.6	1.9	74.9	0.69
2018Q2	1247	0.6	2.0	74.9	0.69
2018Q3	1256	0.8	2.1	75.0	0.69
2018Q4	1258	0.1	2.1	75.0	0.69
2019Q1	1265	0.5	2.1	75.0	0.69
2019Q2	1273	0.6	2.1	75.0	0.69
2019Q3	1282	0.7	2.1	74.9	0.69
2019Q4	1284	0.1	2.0	74.9	0.69
2020Q1	1291	0.5	2.0	74.8	0.69
2020Q2	1299	0.6	2.0	74.5	0.69
2020Q3	1308	0.7	2.0	74.2	0.68
2020Q4	1310	0.1	2.0	73.8	0.68
2021Q1	1317	0.5	2.0	73.3	0.67
2021Q2	1325	0.6	2.1	72.6	0.67

Source: RBNZ, Statistics New Zealand, the Treasury

Table 3 – Expenditure on Gross Domestic Product and Gross Domestic Product (income) in current prices

Year ended June	2016 Actual			2017 Forecast			2018 Forecast			2019 Forecast			2020 Forecast			2021 Forecast
	$million	%volume	%price	$million	%volume	%price	$million	%volume	%price	$million	%volume	%price	$million	%volume	%price	$million
Consumption:																
- *Private*	144,168	4.0	0.6	150,834	3.7	1.3	158,529	3.3	1.7	166,437	2.8	1.6	173,814	2.2	1.6	180,468
- *Public*	46,864	2.6	1.7	48,908	1.5	2.4	50,847	1.0	2.1	52,449	1.1	2.1	54,138	1.0	2.1	55,841
Gross Fixed Capital Formation:																
- *Residential*	17,944	14.3	6.0	21,726	7.8	3.5	24,224	2.1	2.9	25,446	-1.7	2.8	25,706	-0.2	3.0	26,408
- *Market **	35,528	9.3	-2.1	38,009	6.7	-0.4	40,406	6.2	0.9	43,299	3.9	0.9	45,371	2.3	1.0	46,848
- *Non-market ***	5,251	2.1	2.7	5,506	3.4	2.2	5,816	-4.9	2.4	5,664	0.2	2.4	5,813	2.4	2.4	6,098
- *Total all sectors*	58,709	10.0	0.4	64,855	6.8	1.6	70,355	4.3	1.4	74,372	2.1	1.2	76,875	1.6	1.6	79,348
Change in Stocks	-443			-1,016			106			607			1,056			1,313
Gross National Expenditure	249,823	5.1	0.4	263,580	4.4	1.7	279,836	3.3	1.7	293,865	2.5	1.6	305,883	1.9	1.7	316,970
Exports	70,781	1.4	-1.6	70,612	1.9	3.5	74,492	3.0	2.1	78,335	2.7	1.9	81,990	3.2	3.1	87,231
Imports	68,705	5.7	-4.6	69,320	5.0	2.8	74,860	4.0	1.3	78,810	2.8	1.6	82,371	1.9	3.4	86,795
Expenditure on GDP	251,785	3.7	1.4	264,760	3.5	2.0	279,480	3.0	2.0	293,391	2.4	1.7	305,502	2.3	1.6	317,405
Statistical Discrepancy	1,666			1,666			1,667			1,668			1,669			1,670
Gross Domestic Product	253,451			266,426			281,148			295,060			307,171			319,075
Compensation of employees	110,762			116,542			120,771			125,660			130,760			135,895
Operating Surplus, net:																
- *Agriculture*	3,546			4,698			5,035			5,246			5,378			5,468
- *Other*	68,653			70,882			77,191			82,293			85,593			88,632
- *Total all sectors*	72,199			75,580			82,226			87,539			90,971			94,101
Consumption of fixed capital	35,580			37,359			39,227			41,188			43,247			45,410
Indirect Taxes	34,063			36,099			38,077			39,826			41,346			42,823
Less subsidies	847			847			847			847			847			847
Gross Domestic Product	253,451			266,426			281,148			295,060			307,171			319,075

* Includes Local Government and Non-profit Organisations
** Central Government (includes Crown Entities but not SOEs)
Note: GDP Income measure has been converted from March years to June years by Treasury
Source: Statistics New Zealand, the Treasury

Table 4 – Labour Market Indicators

Annual Average Percentage Change **Year ended June**	**2016** Actual	**2017** Forecast	**2018** Forecast	**2019** Forecast	**2020** Forecast	**2021** Forecast
Real GDP (production basis)	2.8	3.6	3.5	2.9	2.4	2.3
Working Age Population	2.4	2.6	2.0	1.5	1.3	1.2
Labour Force	2.1	4.4	1.5	1.2	1.0	1.0
Employment	2.3	4.8	1.6	1.5	1.1	0.9
Labour Productivity*	-0.2	-1.2	2.0	1.5	1.3	1.4
CPI (annual percentage change)	0.4	1.5	2.0	2.1	2.0	2.1
Average Ordinary Time Hourly Wages	2.2	1.7	2.1	2.5	3.0	3.1
Average Weekly Earnings	2.6	2.0	2.0	2.5	2.9	3.0
Real Wages	1.9	0.6	0.3	0.5	0.9	1.0
Compensation of Employees	4.6	5.2	3.6	4.0	4.1	3.9
Unit Labour Costs (Hours worked basis)	2.5	2.9	0.2	1.1	1.7	1.6
Real Unit Labour Costs	2.1	1.8	-1.6	-1.0	-0.4	-0.4

* Hours worked basis

Number (000's) **As at June Quarter**	**2016** Actual	**2017** Forecast	**2018** Forecast	**2019** Forecast	**2020** Forecast	**2021** Forecast
Total Population	4,693	4,786	4,862	4,923	4,979	5,032
Natural Increase	28	30	31	32	33	33
Net Migration	69	63	44	29	24	20
Annual Change	97	93	76	61	57	53
Working Age Population	3,714	3,799	3,867	3,921	3,970	4,016
Annual Change	99	84	68	54	49	46
Not in the labour force (s.a.)	1,124	1,145	1,177	1,202	1,225	1,244
Annual Change	0	20	32	25	23	19
Labour Force (s.a.)	2,590	2,654	2,690	2,719	2,746	2,772
Annual Change	99	64	36	29	26	27
Total Employment (s.a.)	2,459	2,527	2,567	2,604	2,628	2,652
Annual Change	105	68	40	37	25	23
Unemployment (s.a.)	131	127	124	116	117	121
Annual Change	-6	-4	-4	-8	2	3
Participation Rate (%, s.a.)	69.7	69.9	69.6	69.4	69.2	69.0
Unemployment Rate (%, s.a.)	5.0	4.8	4.6	4.2	4.3	4.3

Source: Statistics New Zealand, the Treasury
s.a. - seasonally adjusted

Table 5 – Exports – SNA basis

Breakdown of Exports

Year ended June	Dairy Products			Meat and Meat Products			Non-Commodity*		
	%volume	%price	$million	%volume	%price	$million	%volume	%price	$million
2013	14.6	-13.1	12,475	14.4	-9.7	5,722	-1.4	-6.4	12,841
2014	-2.9	37.5	16,760	1.7	3.7	6,030	1.4	1.3	13,184
2015	4.4	-23.4	13,380	1.1	10.9	6,768	4.9	-4.0	13,277
2016	4.9	-12.0	12,343	6.8	-0.1	7,227	-1.4	2.8	13,450
2017	0.5	0.0	12,383	-11.4	-9.9	5,757	3.6	-3.6	13,450
2018	0.4	6.6	13,284	1.5	-0.6	5,808	1.3	5.0	14,303
2019	6.5	2.3	14,475	1.4	0.7	5,930	2.6	2.3	15,011
2020	4.6	2.3	15,490	1.7	0.7	6,071	3.3	2.3	15,861
2021	4.5	4.2	16,860	2.0	2.2	6,327	4.6	3.8	17,231

Year ended June	Total Goods**			Services			Total Exports		
	%volume	%price	$million	%volume	%price	$million	%volume	%price	$million
2013	5.3	-7.4	46,086	-3.4	0.5	16,305	3.1	-5.5	62,390
2014	-0.2	12.0	51,536	0.6	1.5	16,654	0.1	9.1	68,190
2015	3.4	-8.7	48,652	13.3	1.2	19,082	5.7	-6.0	67,733
2016	2.9	-1.5	49,278	10.1	2.4	21,503	5.1	-0.6	70,781
2017	1.0	-3.2	48,164	3.0	1.4	22,448	1.4	-1.6	70,612
2018	0.8	4.4	50,694	4.4	1.6	23,802	1.9	3.5	74,492
2019	3.2	2.1	53,441	2.6	2.0	24,897	3.0	2.1	78,335
2020	3.0	1.9	56,119	2.1	1.8	25,875	2.7	1.9	81,990
2021	3.5	3.6	60,144	2.7	2.0	27,091	3.2	3.1	87,231

* Consists of 'Metal Products and Machinery Equipment', 'Chemicals, Rubber and Other Non-Metallic Goods' and 'Textile, Apparel and Leather'
** Note that Statistics NZ withholds data for some components of exports for confidentiality reasons. As a result we have not published the "Wood and Wood Products' and 'Other Goods' components of exports.
Source: Statistics New Zealand, the Treasury

Table 6 – Imports – SNA basis

Breakdown of Imports

Year ended June	Capital Goods (Value for Duty)			Mineral Fuel* (VFD)			Intermediate Goods** (VFD)			Consumption Goods (VFD)		
	%volume	%price	$million	%volume	%price	$million	%volume	%price	$million	%volume	%price	$million
2013	2.8	-6.9	7,992	4.8	-5.3	8,439	2.9	-3.3	17,638	3.3	-2.1	11,783
2014	26.3	-6.0	9,485	-0.9	-2.8	8,128	8.1	-2.9	18,505	7.3	-2.9	12,272
2015	15.7	-3.7	10,578	5.0	-20.7	6,702	5.4	0.5	19,608	7.5	0.0	13,202
2016	-4.3	8.2	10,945	-2.0	-29.5	4,585	3.7	3.4	21,020	6.4	6.3	14,923
2017	12.0	-7.3	11,368	-0.3	4.1	4,842	4.2	-5.2	20,778	5.8	-4.9	15,015
2018	1.7	-0.3	11,526	4.0	5.8	5,326	6.1	3.4	22,813	6.6	2.2	16,371
2019	3.8	-1.6	11,775	2.0	4.4	5,672	4.4	1.9	24,260	4.4	0.9	17,247
2020	2.5	-1.6	11,876	0.2	6.4	6,051	2.9	2.1	25,498	4.5	1.1	18,225
2021	2.6	-0.3	12,148	-1.3	9.9	6,561	1.6	3.8	26,907	3.9	2.9	19,474

Year ended June	Total Goods (VFD)			Services			Total Imports		
	%volume	%price	$million	%volume	%price	$million	%volume	%price	$million
2013	3.1	-3.7	45,919	1.2	-1.5	15,268	2.6	-3.1	61,188
2014	9.6	-3.8	48,456	7.1	-4.0	15,692	9.0	-3.8	64,147
2015	7.8	-4.1	50,110	2.7	1.5	16,368	6.6	-2.8	66,478
2016	2.0	0.9	51,541	-1.3	6.3	17,164	1.2	2.2	68,705
2017	6.2	-4.9	52,031	4.1	-3.0	17,329	5.7	-4.6	69,320
2018	5.0	2.6	56,064	5.2	3.5	18,865	5.0	2.8	74,860
2019	4.1	1.1	58,982	3.5	2.0	19,917	4.0	1.3	78,810
2020	3.0	1.5	61,678	2.2	2.1	20,783	2.8	1.6	82,371
2021	2.2	3.3	65,118	1.0	3.6	21,745	1.9	3.4	86,795

* Consists of 'Fuels and Lubricants' and 'Petrol and Aviation Gas'
** Consists of 'Intermediate Goods' excluding 'Fuels and Lubricants' and 'Passenger Cars'
Source: Statistics New Zealand, the Treasury

Table 7 – Balance of Payments – Current Account

$ millions **Year ended June**	**2016** Actual	**2017** Forecast	**2018** Forecast	**2019** Forecast	**2020** Forecast	**2021** Forecast
Exports Goods	49,278	48,164	50,694	53,441	56,119	60,144
annual % change	*1.3*	*-2.3*	*5.3*	*5.4*	*5.0*	*7.2*
Imports Goods	51,541	52,031	56,064	58,982	61,678	65,118
annual % change	*2.9*	*1.0*	*7.8*	*5.2*	*4.6*	*5.6*
Balance on Goods	-2,263	-3,867	-5,370	-5,540	-5,559	-4,974
% of nominal GDP	*-0.9*	*-1.5*	*-1.9*	*-1.9*	*-1.8*	*-1.6*
Exports Services	21,503	22,448	23,802	24,897	25,875	27,091
annual % change	*12.7*	*4.4*	*6.0*	*4.6*	*3.9*	*4.7*
Imports Services	17,164	17,329	18,865	19,917	20,783	21,745
annual % change	*4.9*	*1.0*	*8.9*	*5.6*	*4.4*	*4.6*
Balance on services	4,339	5,119	4,937	4,981	5,092	5,346
% of nominal GDP	*1.7*	*1.9*	*1.8*	*1.7*	*1.7*	*1.7*
Balance on goods & services	2,076	1,251	-433	-560	-467	372
% of nominal GDP	*0.8*	*0.5*	*-0.2*	*-0.2*	*-0.2*	*0.1*
Primary and secondary income balance	-9,408	-9,317	-10,306	-11,561	-13,044	-14,233
% of nominal GDP	*-3.7*	*-3.5*	*-3.7*	*-3.9*	*-4.3*	*-4.5*
Current account balance	**-7,331**	**-8,066**	**-10,738**	**-12,121**	**-13,511**	**-13,861**
% of nominal GDP	***-2.9***	***-3.0***	***-3.8***	***-4.1***	***-4.4***	***-4.4***

Source: Statistics New Zealand, the Treasury

Treasury and Inland Revenue Tax Forecasts

In line with established practice, Inland Revenue has also prepared a set of tax forecasts, which, like the Treasury's tax forecasts, were based on the Treasury's macroeconomic forecasts. The two sets of forecasts differ from each other because of the different modelling approaches used by the two agencies and the various assumptions and judgements made by the forecasting teams in producing their forecasts.

In total, the two agencies' forecasts are similar to each other, with the differences between the total tax forecasts in any given year all being under 0.5%. However, there are noteworthy differences within some of the tax types, including:

- Corporate tax, in which the Treasury's forecast is lower than Inland Revenue's in every year of the forecast period, by amounts up to around $0.3 billion, owing to different judgements made around the current degree of underlying strength in corporate tax; and
- Owing to different forecasting model structure, parameters and assumptions, the Treasury's forecast of withholding tax on resident interest (RWT) grows at a faster rate than Inland Revenue's forecast to be $0.3 billion higher by the end of the forecast period.

In total, the Treasury's tax forecast is initially (2016/17) lower than Inland Revenue's, but grows at a faster rate on average over the forecast period, to be slightly (less than 0.1%) higher than Inland Revenue's forecast by 2020/21, mainly as a result of differences in the interest RWT forecasts.

The following two tables detail the respective forecasts by the Treasury and Inland Revenue for tax revenue and receipts across each of the various sources:

Table 8 Treasury and Inland Revenue forecasts of tax revenue (accrual)

Table 9 Treasury and Inland Revenue forecasts of tax receipts (cash)

Table 8 – Treasury and Inland Revenue forecasts of tax revenue (accrual)

$ million	2015/16 Actual	2016/17 Forecast Treasury	2016/17 Forecast IRD	2016/17 Difference	2017/18 Forecast Treasury	2017/18 Forecast IRD	2017/18 Difference	2018/19 Forecast Treasury	2018/19 Forecast IRD	2018/19 Difference	2019/20 Forecast Treasury	2019/20 Forecast IRD	2019/20 Difference	2020/21 Forecast Treasury	2020/21 Forecast IRD	2020/21 Difference
Direct tax																
Individuals																
Source deductions	27,499	28,879	28,950	(71)	30,085	30,110	(25)	31,528	31,524	4	33,112	33,125	(13)	34,754	34,779	(25)
Other persons tax	5,786	6,275	6,250	25	6,622	6,547	75	6,947	6,821	126	7,084	6,973	111	7,228	7,234	(6)
Refunds	(1,739)	(1,635)	(1,709)	74	(1,665)	(1,704)	39	(1,655)	(1,706)	51	(1,664)	(1,699)	35	(1,694)	(1,692)	(2)
Fringe benefit tax	502	528	526	2	548	543	5	571	558	13	595	572	23	618	582	36
Subtotal: Individuals	**32,048**	**34,047**	**34,017**	**30**	**35,590**	**35,496**	**94**	**37,391**	**37,197**	**194**	**39,127**	**38,971**	**156**	**40,906**	**40,903**	**3**
Company tax (net)	**11,532**	**12,416**	**12,589**	**(173)**	**13,108**	**13,258**	**(150)**	**13,899**	**14,074**	**(175)**	**14,556**	**14,860**	**(304)**	**15,171**	**15,530**	**(359)**
Withholding taxes on:																
Resident interest income	1,667	1,433	1,439	(6)	1,409	1,338	71	1,557	1,322	235	2,009	1,753	256	2,721	2,416	305
Non-resident income	734	528	612	(84)	615	604	11	662	655	7	731	719	12	798	770	28
Foreign-source dividends	(8)	(10)	(9)	(1)	..	1	(1)	..	1	(1)	..	1	(1)	..	1	(1)
Resident dividend income	626	716	750	(34)	726	747	(21)	751	762	(11)	780	772	8	809	782	27
Subtotal: Withholding tax	**3,019**	**2,667**	**2,792**	**(125)**	**2,750**	**2,690**	**60**	**2,970**	**2,740**	**230**	**3,520**	**3,245**	**275**	**4,328**	**3,969**	**359**
Total direct tax	**46,599**	**49,130**	**49,398**	**(268)**	**51,448**	**51,444**	**4**	**54,260**	**54,011**	**249**	**57,203**	**57,076**	**127**	**60,405**	**60,402**	**3**
Indirect tax																
GST (net)	**24,902**	**26,706**	**26,843**	**(137)**	**28,043**	**28,185**	**(142)**	**29,265**	**29,322**	**(57)**	**30,310**	**30,200**	**110**	**31,254**	**31,218**	**36**
Excise duties on:																
Alcoholic drinks	671	678	680	(2)	702	700	2	725	720	5	750	750	..	771	770	1
Tobacco products	362	358	351	7	366	365	1	379	375	4	393	390	3	407	401	6
Petroleum fuels	1,185	1,232	1,190	42	1,254	1,195	59	1,267	1,200	67	1,274	1,205	69	1,279	1,208	71
Subtotal: excise duties	**2,218**	**2,268**	**2,221**	**47**	**2,322**	**2,260**	**62**	**2,371**	**2,295**	**76**	**2,417**	**2,345**	**72**	**2,457**	**2,379**	**78**
Other indirect tax																
Customs duty	2,442	2,436	2,365	71	2,481	2,420	61	2,551	2,500	51	2,622	2,550	72	2,688	2,610	78
Road user charges	1,381	1,432	1,430	2	1,469	1,510	(41)	1,520	1,590	(70)	1,565	1,655	(90)	1,603	1,725	(122)
Gaming duties	275	283	287	(4)	285	289	(4)	287	290	(3)	289	292	(3)	291	294	(3)
Motor vehicle fees	214	240	207	33	226	214	12	229	220	9	232	225	7	235	230	5
Exhaustible resource levy	28	31	28	3	30	28	2	30	27	3	30	27	3	30	26	4
Approved issuer levy, cheque duty & other	86	95	98	(3)	98	101	(3)	107	113	(6)	115	121	(6)	115	124	(9)
Subtotal: Other indirect tax	**4,426**	**4,517**	**4,415**	**102**	**4,589**	**4,562**	**27**	**4,724**	**4,740**	**(16)**	**4,853**	**4,870**	**(17)**	**4,962**	**5,009**	**(47)**
Total indirect tax	**31,546**	**33,491**	**33,479**	**12**	**34,955**	**35,007**	**(52)**	**36,361**	**36,357**	**4**	**37,581**	**37,415**	**166**	**38,673**	**38,606**	**66**
Total tax	**78,145**	**82,621**	**82,877**	**(256)**	**86,403**	**86,451**	**(48)**	**90,621**	**90,369**	**252**	**94,784**	**94,491**	**292**	**99,078**	**99,008**	**69**
Total tax (% of GDP)	31.0%	31.2%	31.3%	-0.1%	30.9%	30.9%	0.0%	30.9%	30.8%	0.1%	31.0%	30.9%	0.1%	31.2%	31.2%	0.0%
less **Core Crown tax eliminations**																
Core Crown income tax	512	870	870		683	683		732	732		785	785		841	841	
GST on Crown expenses and departmental outputs	6,694	7,026	7,026		7,176	7,176		7,398	7,398		7,654	7,654		7,799	7,799	
Crown ESCT	452	447	447		461	461		466	466		470	470		472	472	
Crown AIL	44	55	55		55	55		55	55		55	55		55	55	
Core Crown taxation	**70,443**	**74,224**	**74,480**	**(256)**	**78,028**	**78,076**	**(48)**	**81,970**	**81,718**	**252**	**85,820**	**85,528**	**292**	**89,910**	**89,841**	**69**
Core Crown tax (% of GDP)	28.0%	28.0%	28.1%	-0.1%	27.9%	27.9%	0.0%	27.9%	27.9%	0.1%	28.1%	28.0%	0.1%	28.3%	28.3%	0.0%
less **Total Crown tax eliminations**																
Income tax from SOEs and CEs	692	578	578		597	597		662	662		670	670		592	592	
Other Crown GST	..	..	..		..	..		..	..		..	..		..	..	
ESCT from SOEs and CEs	28	26	26		26	26		26	26		26	26		26	26	
Lottery duty	55	53	53		54	54		55	55		56	56		57	57	
Total Crown taxation	**69,668**	**73,567**	**73,824**	**(256)**	**77,351**	**77,399**	**(48)**	**81,227**	**80,975**	**252**	**85,068**	**84,775**	**292**	**89,234**	**89,165**	**69**
Total Crown tax (% of GDP)	27.7%	27.8%	27.9%	-0.1%	27.7%	27.7%	0.0%	27.7%	27.6%	0.1%	27.8%	27.7%	0.1%	28.1%	28.1%	0.0%
Nominal expenditure GDP	251,785	264,760	264,760		279,480	279,480		293,391	293,391		305,502	305,502		317,405	317,405	

Table 9 – Treasury and Inland Revenue forecasts of tax receipts (cash)

$ million	2015/16 Actual	2016/17 Forecast Treasury	2016/17 Forecast IRD	2016/17 Difference	2017/18 Forecast Treasury	2017/18 Forecast IRD	2017/18 Difference	2018/19 Forecast Treasury	2018/19 Forecast IRD	2018/19 Difference	2019/20 Forecast Treasury	2019/20 Forecast IRD	2019/20 Difference	2020/21 Forecast Treasury	2020/21 Forecast IRD	2020/21 Difference
Direct tax																
Individuals																
Source deductions	27,321	28,756	28,821	(65)	29,959	29,967	(8)	31,396	31,393	3	32,980	32,993	(13)	34,622	34,647	(25)
Other persons tax	6,170	6,709	6,675	34	7,134	6,979	155	7,524	7,300	224	7,617	7,467	150	7,677	7,675	2
Refunds	(2,540)	(2,509)	(2,560)	51	(2,534)	(2,527)	(7)	(2,586)	(2,529)	(57)	(2,589)	(2,527)	(62)	(2,537)	(2,525)	(12)
Fringe benefit tax	506	527	525	2	547	542	5	570	557	13	594	571	23	617	581	36
Subtotal: Individuals	**31,457**	**33,483**	**33,461**	**22**	**35,106**	**34,961**	**145**	**36,904**	**36,721**	**183**	**38,602**	**38,504**	**98**	**40,379**	**40,378**	**1**
Company tax (net)	**10,974**	**12,358**	**12,280**	**78**	**12,369**	**12,539**	**(170)**	**13,668**	**13,850**	**(182)**	**14,285**	**14,607**	**(322)**	**14,854**	**15,248**	**(394)**
Withholding taxes on:																
Resident interest income	1,727	1,432	1,438	(6)	1,408	1,337	71	1,556	1,321	235	2,008	1,752	256	2,720	2,415	305
Non-resident income	636	571	612	(41)	615	604	11	662	655	7	731	719	12	798	770	28
Foreign-source dividends	(5)	3	(2)	5	..	1	(1)	..	1	(1)	..	1	(1)	..	1	(1)
Resident dividend income	620	716	750	(34)	726	747	(21)	751	762	(11)	780	772	8	809	782	27
Subtotal: Withholding tax	**2,978**	**2,722**	**2,798**	**(76)**	**2,749**	**2,689**	**60**	**2,969**	**2,739**	**230**	**3,519**	**3,244**	**275**	**4,327**	**3,968**	**359**
Total direct tax	**45,409**	**48,563**	**48,539**	**24**	**50,224**	**50,189**	**36**	**53,541**	**53,310**	**231**	**56,406**	**56,355**	**51**	**59,560**	**59,594**	**(34)**
Indirect tax																
GST (net)	**24,736**	**26,305**	**26,513**	**(207)**	**27,687**	**27,878**	**(191)**	**28,913**	**29,005**	**(92)**	**29,968**	**29,890**	**78**	**30,917**	**30,861**	**56**
Excise duties on:																
Alcoholic drinks	667	678	680	(2)	702	700	2	725	720	5	750	750	..	771	770	1
Tobacco products	370	358	351	7	366	365	1	379	375	4	393	390	3	407	401	6
Petroleum fuels	1,187	1,232	1,190	42	1,254	1,195	59	1,267	1,200	67	1,274	1,205	69	1,279	1,208	71
Subtotal: Excise duties	**2,224**	**2,268**	**2,221**	**47**	**2,322**	**2,260**	**62**	**2,371**	**2,295**	**76**	**2,417**	**2,345**	**72**	**2,457**	**2,379**	**78**
Other indirect tax																
Customs duty	2,553	2,443	2,365	78	2,470	2,420	50	2,545	2,500	45	2,616	2,550	66	2,683	2,610	73
Road user charges	1,382	1,432	1,430	2	1,469	1,510	(41)	1,520	1,590	(70)	1,565	1,655	(90)	1,603	1,725	(122)
Gaming duties	276	282	287	(5)	285	289	(4)	287	290	(3)	289	292	(3)	291	294	(3)
Motor vehicle fees	240	240	207	33	226	214	12	229	220	9	232	225	7	235	230	5
Exhaustible resource levy	28	31	28	3	30	28	2	30	27	3	30	27	3	30	26	4
Approved issuer levy, cheque duty & other	91	95	99	(4)	98	102	(4)	107	114	(7)	115	122	(7)	115	125	(10)
Subtotal: Other indirect tax	**4,570**	**4,523**	**4,416**	**107**	**4,578**	**4,563**	**15**	**4,718**	**4,741**	**(23)**	**4,847**	**4,871**	**(24)**	**4,957**	**5,010**	**(53)**
Total indirect tax	**31,530**	**33,096**	**33,150**	**(54)**	**34,588**	**34,701**	**(114)**	**36,003**	**36,041**	**(38)**	**37,233**	**37,106**	**126**	**38,331**	**38,250**	**80**
Total tax	**76,939**	**81,659**	**81,689**	**(30)**	**84,812**	**84,890**	**(78)**	**89,544**	**89,351**	**193**	**93,639**	**93,461**	**177**	**97,891**	**97,844**	**47**
Total tax (% of GDP)	30.6%	30.8%	30.9%	0.0%	30.3%	30.4%	0.0%	30.5%	30.5%	0.1%	30.7%	30.6%	0.1%	30.8%	30.8%	0.0%
***less* Core Crown tax eliminations**																
Core Crown income tax	(37)	896	896		689	689		722	722		774	774		830	830	
GST on Crown expenses and departmental outputs	6,698	6,965	6,965		7,167	7,167		7,401	7,401		7,656	7,656		7,798	7,798	
Crown ESCT	446	445	445		458	458		463	463		468	468		469	469	
Crown AIL	44	55	55		55	55		55	55		55	55		55	55	
Core Crown taxation	**69,788**	**73,298**	**73,328**	**(30)**	**76,442**	**76,520**	**(78)**	**80,902**	**80,709**	**193**	**84,686**	**84,509**	**177**	**88,738**	**88,692**	**47**
Core Crown tax (% of GDP)	27.7%	27.7%	27.7%	0.0%	27.4%	27.4%	0.0%	27.6%	27.5%	0.1%	27.7%	27.7%	0.1%	28.0%	27.9%	0.0%
***less* Total Crown tax eliminations**																
Income tax from SOEs and CEs	623	573	573		574	574		623	623		639	639		466	466	
Other Crown GST	49	20	20		(1)	(1)		(2)	(2)		(6)	(6)		0	0	
ESCT from SOEs and CEs	24	16	16		16	16		16	16		16	16		16	16	
Lottery duty	56	53	53		54	54		55	55		56	56		57	57	
Total Crown taxation	**69,036**	**72,638**	**72,668**	**(30)**	**75,799**	**75,878**	**(78)**	**80,211**	**80,018**	**193**	**83,981**	**83,804**	**177**	**88,199**	**88,153**	**47**
Total Crown tax (% of GDP)	27.4%	27.4%	27.4%	0.0%	27.1%	27.1%	0.0%	27.3%	27.3%	0.1%	27.5%	27.4%	0.1%	27.8%	27.8%	0.0%

Tax Policy Changes

There were no material changes to forecast tax revenue since the *Budget Update* as a result of revenue and/or spending initiatives.

Additional Fiscal Indicators

The Treasury calculates two summary fiscal indicators: the cyclically-adjusted balance (CAB) and the fiscal impulse indicator. This part of the Additional Information chapter discusses these estimates.

The first section discusses the Treasury's central estimates of the CAB and fiscal impulse. This is followed by the sensitivity analysis and terms of trade adjustment. Detailed tables of data can be found at the end of the Additional Fiscal Indicators section.

Further information on the methodology, interpretation and limitations behind the indicators can be found in Treasury Working Papers 02/30 and 10/08.[1]

Central estimates

Cyclically-adjusted balance (CAB)

The CAB is an estimate of the OBEGAL adjusted for fluctuations of actual GDP around potential GDP. When the economy is operating above its potential level, automatic stabilisers raise the budget balance that is, tax receipts are higher and unemployment expenses are lower than they otherwise would be. When the economy is operating below its potential level, the opposite is true. The CAB provides an estimate of what the budget balance would be without the effect of these automatic stabilisers. Current forecasts show the economy is estimated to be operating just below its potential level until 2018 and slightly above potential for the remainder of the forecast period. As a result, the CAB will be higher than the OBEGAL until 2018, and slightly lower thereafter.

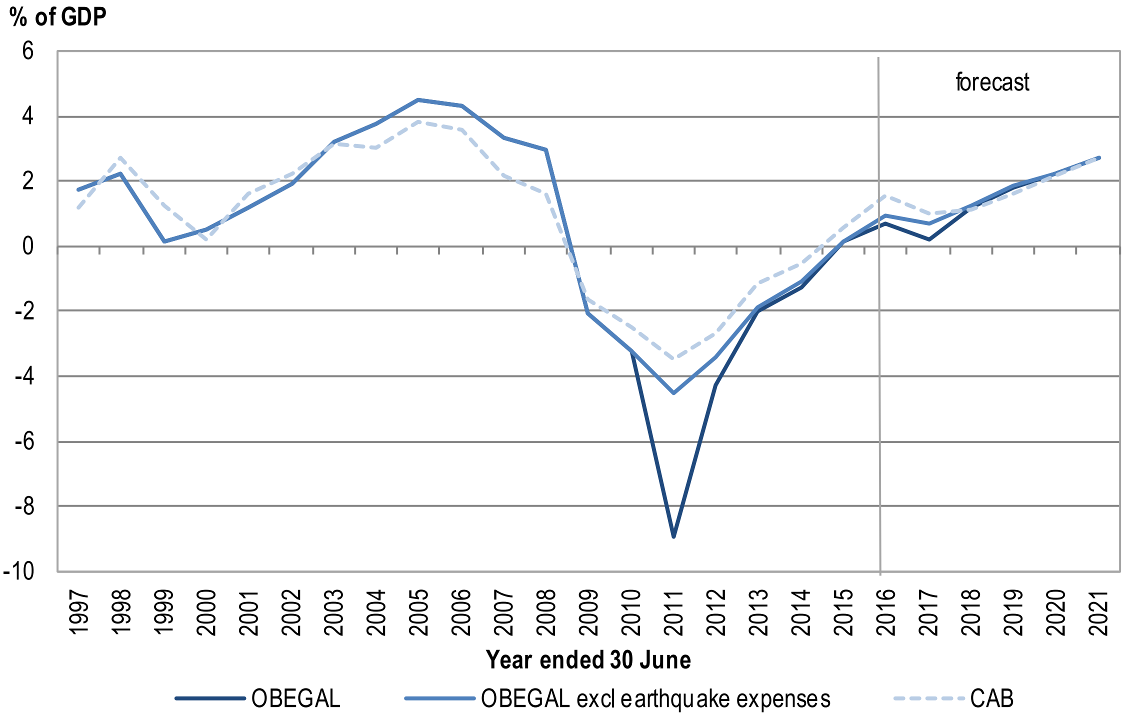
The CAB is subject to uncertainty because it uses estimated variables and is sensitive to new information, particularly regarding the output gap (the difference between actual and potential output). Significant "one-off" impacts on expenses from the Canterbury and Kaikoura earthquakes are removed from estimates of the CAB. This is to give a better indication of underlying fiscal performance.

Figure 1 shows the operating balance (before gains and losses) and the CAB. The OBEGAL is in surplus across the forecast period with a smaller surplus in 2016/17 before rising rapidly from 2017/18 onwards. The economy is forecast to be operating below its potential level until 2018 before achieving a small positive output gap. As a result, the CAB is higher than the OBEGAL in the first two years of the forecasts and then falls just below thereafter. This implies that the surpluses in the OBEGAL are structural surpluses and not a result of temporary economic conditions. These cyclically-adjusted surpluses increase over the forecast period with a surplus of 1.0% of GDP in 2016/17, growing to 2.7% of GDP in 2020/21. As mentioned above, the impacts of the Kaikoura earthquakes have been excluded from the CAB. This causes the slightly larger difference between the CAB and the OBEGAL in 2017 compared to the rest of the forecast period.

1 Renee Philip and John Janssen (2002) "Indicators of Fiscal Impulse for New Zealand" New Zealand Treasury Working Paper 02/30, December 2002 http://www.treasury.govt.nz/publications/research-policy/wp/2002/02-30/

Oscar Parkyn (2010) "Estimating New Zealand's Structural Budget Balance" New Zealand Treasury Working Paper 10/08, December 2010 http://www.treasury.govt.nz/publications/research-policy/wp/2010/10-08/

Figure 1 – Cyclically-adjusted balance



Source: The Treasury

Fiscal impulse

The fiscal impulse is an estimate of discretionary changes in the fiscal position that have an impact on aggregate demand in the economy. It is calculated as the change in a cash-based version of the fiscal balance (a cyclically-adjusted primary balance supplemented by capital expenditure). Capital expenditure on defence, KiwiSaver subsidies and Deposit Guarantee Scheme payments are excluded from the measure since these are expected to have limited direct impact on aggregate demand. Purchases and sales of investments are also excluded from the measure.

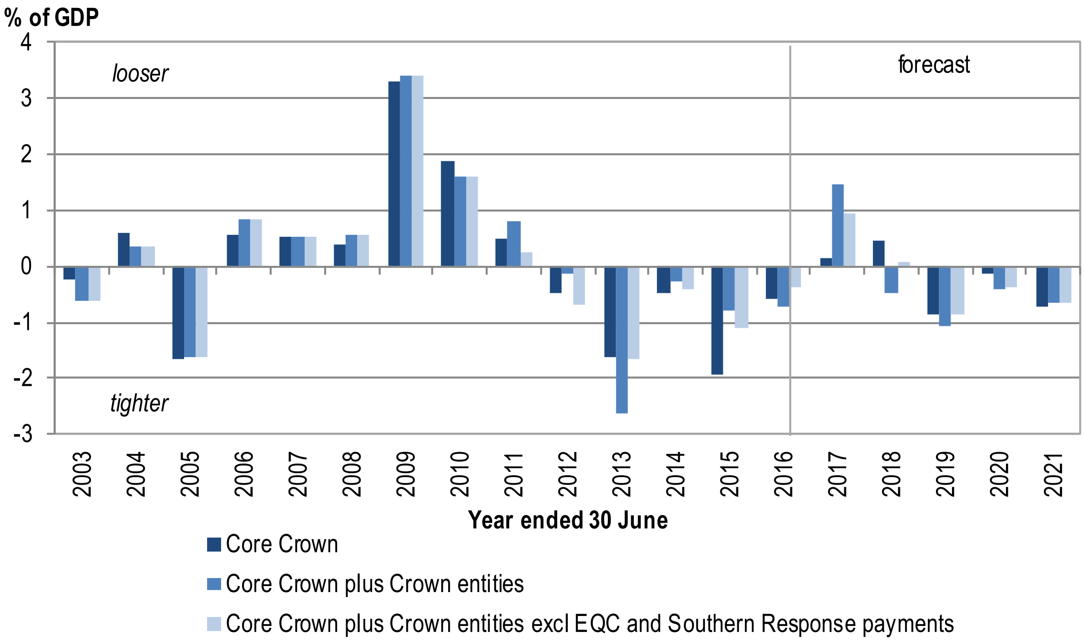
The fiscal impulse is shown for both the core Crown and combined core Crown and Crown entity segments. The core Crown indicator mostly reflects changes in receipts and expenditure impacted by Budget decisions, whereas the core Crown plus Crown entity indicator provides a better indication of the total impact of central government activities (ie, excluding State-owned enterprises). A measure of the fiscal impulse that excludes Canterbury and Kaikoura related financial transactions is also shown, which adjusts for Earthquake Commission (EQC) and Southern Response payments and receipts. These measure is shown as EQC and Southern Response payments and receipts account for much of the difference between the core Crown fiscal impulse and for the core Crown plus Crown entities fiscal impulse measures. The core Crown plus Crown entity (excluding EQC and Southern Response) is used by the Treasury as the headline estimate of the fiscal impulse.

The fiscal impulse does not take account of the composition of fiscal policy changes or of how a change in fiscal policy will be transmitted through the economy. Treasury research using time series statistical analysis indicates that spending and taxes have different effects on New Zealand GDP.[2] Therefore the fiscal impulse indicator only provides an imprecise guide to the impact of fiscal policy on the economy.

Estimates of the fiscal impulse shown in figure 2 show that fiscal policy is expected to have a broadly neutral impact on aggregate demand on average over the five years to June 2021. The positive fiscal impulses in 2016/17 and 2017/18 reflect cash receipts growing more slowly than GDP and increases in capital spending. The negative fiscal impulses from 2018/19 to 2020/21 reflect ongoing reductions in operating spending (relative to GDP), and a decline in capital spending. The most contractionary impulse across the forecast period occurs in 2018/19, reflecting operating and capital expenditure both falling as a percentage of GDP during this period.

Compared with the Budget Update, the sign of the headline fiscal impulse in each forecast year is unchanged, with the exception of 2017/18 which has changed from a small negative impulse at the Budget Update to a small positive impulse in the Half Year Update. This shift partly reflects the increased in the capital allowances for Budget 2017 and onwards. The estimated impulse for 2015/16 has also reversed but from a small positive impulse to a small negative impulse. This predominantly reflects the larger than expected tax take in this year. The impulse in 2016/17 is more stimulatory than was forecast at the Budget Update. The main driver of this change has been the higher capital spending in this year as well as an unwinding in the previous strength of tax receipts. Overall the changes since the Budget Update have made the average impulse less contractionary over the forecast period.

Figure 2 – Estimates of the fiscal impulse



Source: The Treasury

2 Parkyn and Vehbi (2013) "The Effects of Fiscal Policy in New Zealand: Evidence from a VAR Model with Debt Constraints" New Zealand Treasury Working Paper 13/02. http://www.treasury.govt.nz/publications/research-policy/wp/2013/13-02/

Sensitivity analysis

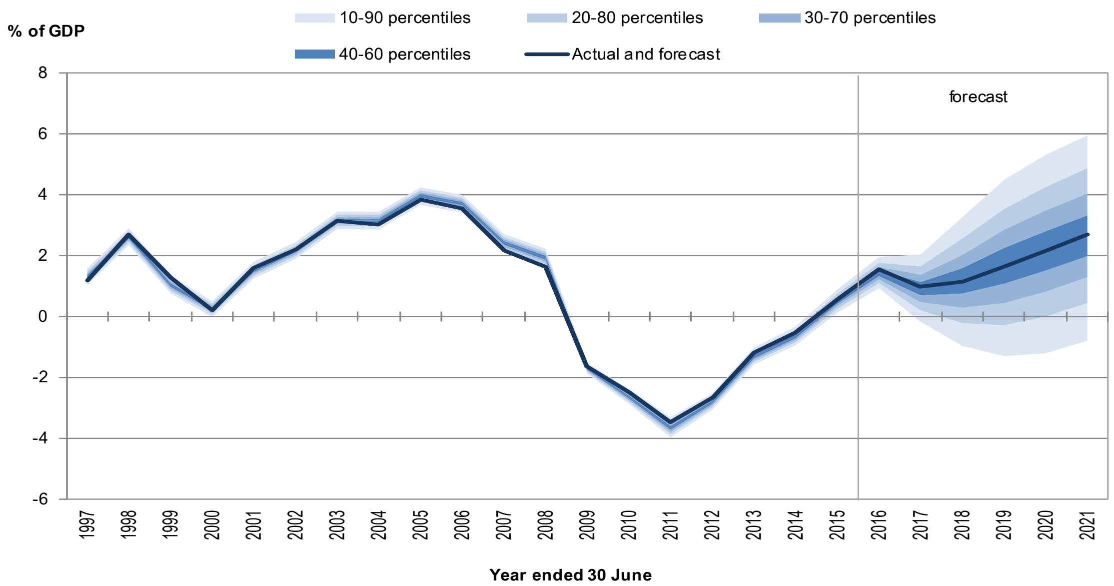
There is much uncertainty about the summary indicator estimates. There are two broad sources of uncertainty that can lead to revisions in the indicator estimates over time:

- estimation uncertainty of the key model parameters (ie, the output gap and the elasticity of tax revenues to changes in the output gap), and
- forecast uncertainty relating to future fiscal and economic developments.

Sensitivity analysis is performed by calculating the indicators using alternative output gap estimates (from the RBNZ, IMF and OECD) and values for the elasticity of tax revenues with respect to the output gap that are half and twice the magnitude of the baseline estimate. The range of alternative estimates is plotted in figures 5 and 6 (with data reported in tables 15 and 16).These estimates show little difference across the forecast horizon.

An alternative means of illustrating uncertainty is to show a probability distribution around the central forecast. A probability distribution requires assumptions about future forecast errors based on historical forecast errors of observable economic and fiscal variables and historical revisions to the Treasury's output gap estimates. Figure 3 provides a fan chart of the cyclically-adjusted balance indicator. The probability intervals calculated are conditional on current policy and reflect historical revisions to the Treasury's official output gap estimate, rather than the full uncertainty implied by different estimation techniques. Details of the methodology and parameter values for the confidence intervals are reported in Treasury Working Paper 10/08.[3] This analysis shows that while the central estimate of the cyclically-adjusted balance is expected to achieve a surplus each year over the forecast period, there is considerable forecast uncertainty around this.

Figure 3 – Fan chart for cyclically-adjusted balance



Source: The Treasury

Note: the bands represent sequential deciles such that the difference between the 10th and 90th percentiles represents an 80% confidence interval.

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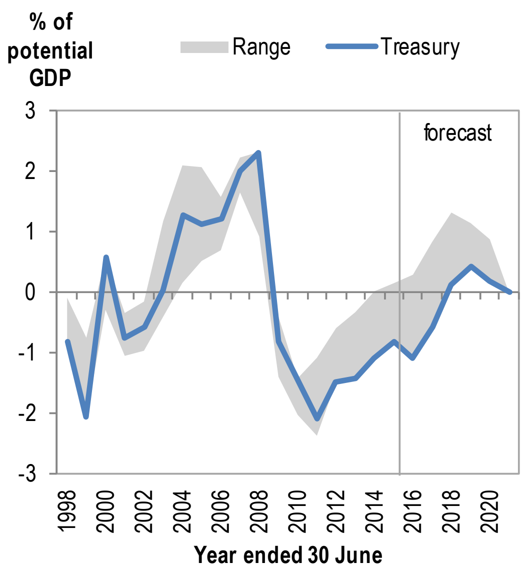
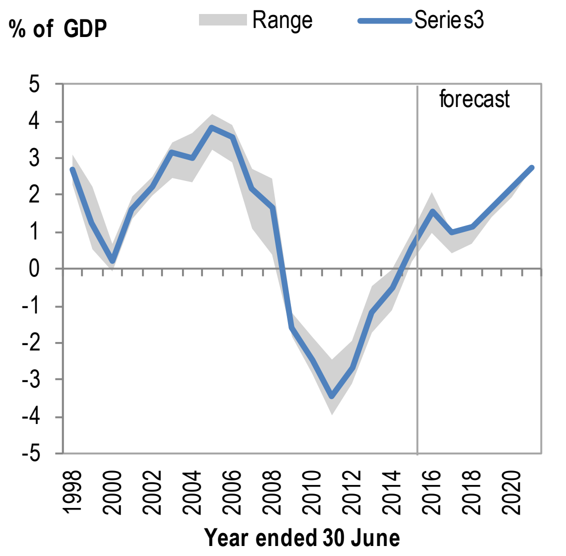
3 Oscar Parkyn (2010) "Estimating New Zealand's Structural Budget Balance." New Zealand Treasury Working Paper 10/08 http://www.treasury.govt.nz/publications/research-policy/wp/2010/10-08/.

Figure 4 – Output gap range



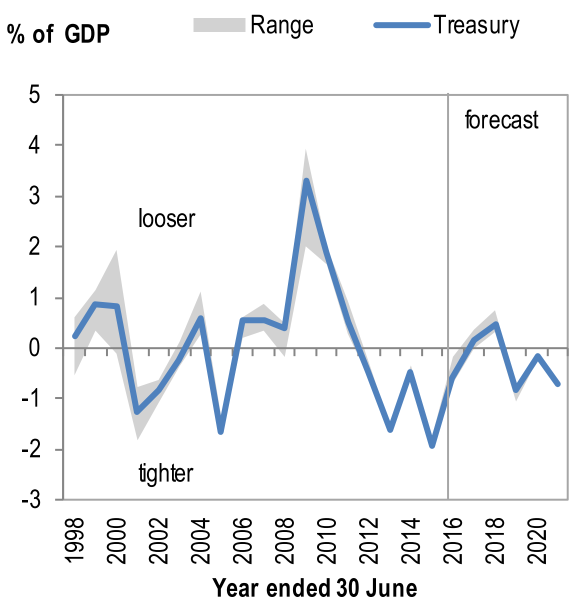
Source: The Treasury

Figure 5 – Cyclically-adjusted balance range



Source: The Treasury

Figure 6 – Core Crown fiscal impulse range



Source: The Treasury

Terms of trade adjustment

The Treasury produces regular estimates of the effects of movements of terms of trade on the budget balance following the methodology outlined in Treasury Working Paper 10/08.[4]

Estimating these terms of trade effects involves calculating the approximate amount of tax revenue that is associated with deviations in the terms of trade from some specified structural, or long-run, level. A terms of trade adjustment helps show what the underlying fiscal position may be under different assumptions (ie, scenarios) about the long-run level of the terms of trade. The purpose is to produce information that helps to make judgements about the fiscal position from a medium-term perspective, without compromising the forecasts' role of presenting the most likely near-term outcome.

Although, the terms of trade has fallen from a 40-year high, it remains above long-term historical averages. The Treasury's central forecast is for a gradual rise in the terms of trade over the medium term and is higher than forecast in the Budget Update, reflecting stronger export commodity prices, particularly for dairy. The terms of trade is approximately 20% higher than the 30-year average throughout the forecast period.

Figure 7 shows New Zealand's terms of trade with historical average levels (50-, 30- and 20-year averages) and a time-varying trend using a statistical filter.[5] The historical average and trend estimates are used as estimates of the structural level of the terms of trade. Using the statistical filter runs the risk of interpreting long cycles as structural shifts in real time, whereas using a historical average suffers from the opposite risk.

A terms of trade adjustment, for each alternative assumption, is reported in Table 17. The CAB with a terms of trade adjustment, using the 30-year average is plotted in Figure 8. This analysis suggests that if the terms of trade fell to the 30-year average, this would subtract 2.5% of GDP from structural tax revenues in 2016/17. This implies a structural budget deficit of 1.5% of GDP with the terms of trade adjustment. Alternatively, a terms of trade adjustment using a statistical filter, which smoothes out fluctuations around a time-varying trend, adds 0.3% of GDP to the structural budget balance in 2015/16, falling to 0.0% of GDP to 2016/17.

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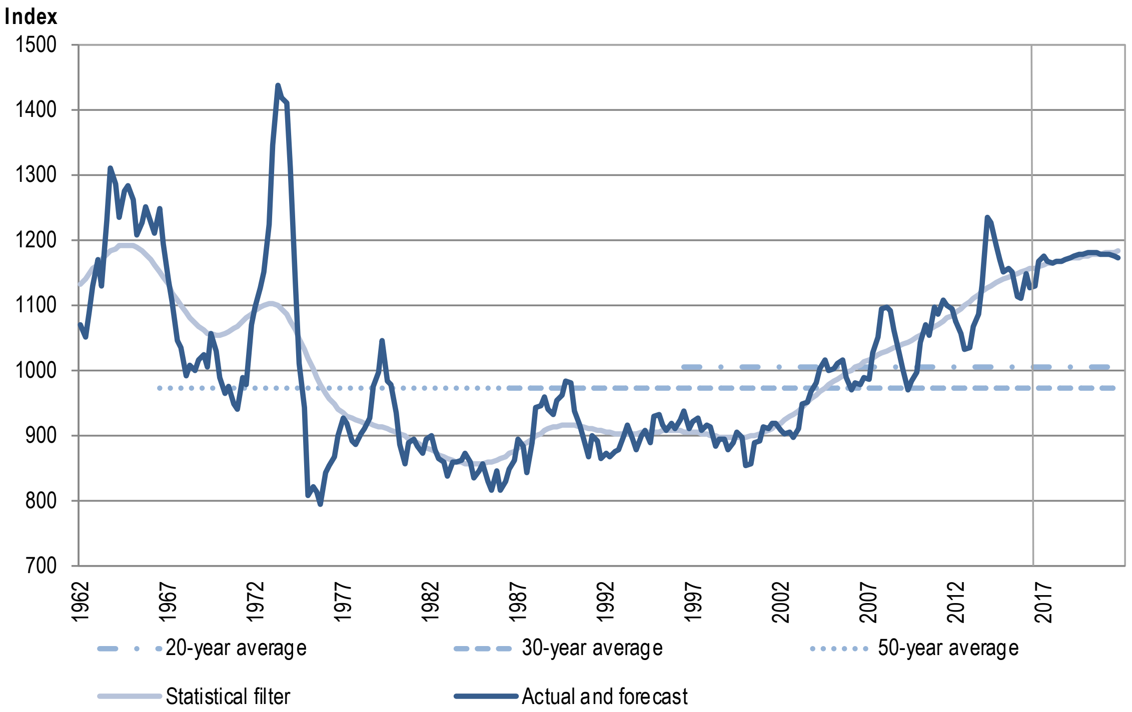
4 Oscar Parkyn (2010) "Estimating New Zealand's Structural Budget Balance." New Zealand Treasury Working Paper 10/08 http://www.treasury.govt.nz/publications/research-policy/wp/2010/10-08/.

5 A Hodrick-Prescott filter is used on quarterly data with a smoothing parameter of 1600.

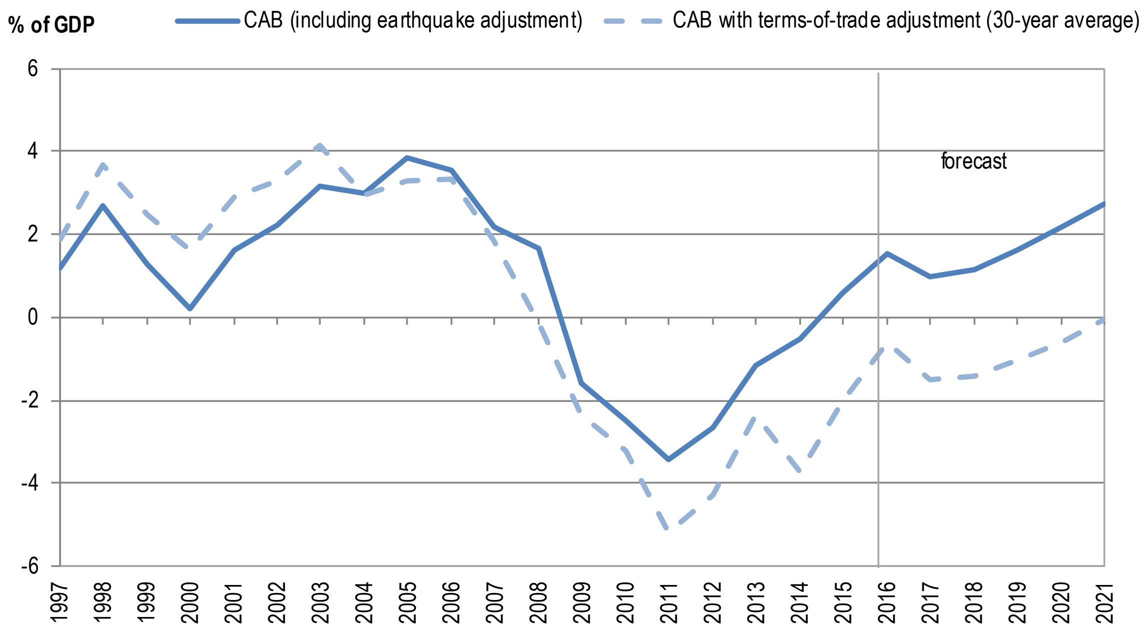
Figure 7 – Terms of trade with historical average and time-varying trend



Sources: Statistics New Zealand, the Treasury

Note: Due to data availability, this uses the goods and services terms of trade spliced with the goods terms of trade for the period prior to 1987.

Figure 8 – Cyclically-adjusted balance with terms of trade adjustment



Source: The Treasury

Data tables for summary fiscal indicators

Table 10 – Central estimates of output gap, cyclically-adjusted balance and fiscal impulse (% of GDP)

June year	Output gap	OBEGAL	OBEGAL excl earthquake expenses	CAB	Fiscal impulse (core Crown)	Fiscal impulse (core Crown plus Crown entity)	Fiscal impulse (core Crown plus CE) excluding EQC & Southern Response payouts
1997	1.0	1.8		1.2	2.3		
1998	-0.8	2.2		2.7	0.2		
1999	-2.1	0.1		1.3	0.9		
2000	0.6	0.5		0.2	0.8		
2001	-0.8	1.2		1.6	-1.3		
2002	-0.6	1.9		2.2	-0.8		
2003	0.0	3.2		3.2	-0.2	-0.6	-0.6
2004	1.3	3.8		3.0	0.6	0.3	0.3
2005	1.1	4.5		3.8	-1.7	-1.6	-1.6
2006	1.2	4.3		3.6	0.6	0.8	0.8
2007	2.0	3.3		2.2	0.5	0.5	0.5
2008	2.3	3.0		1.6	0.4	0.6	0.6
2009	-0.8	-2.1		-1.6	3.3	3.4	3.4
2010	-1.4	-3.2		-2.5	1.9	1.6	1.6
2011	-2.1	-8.9	-4.5	-3.4	0.5	0.8	0.2
2012	-1.5	-4.3	-3.4	-2.7	-0.5	-0.1	-0.7
2013	-1.4	-2.0	-1.9	-1.2	-1.6	-2.6	-1.6
2014	-1.1	-1.2	-1.1	-0.5	-0.5	-0.3	-0.4
2015	-0.8	0.2	0.1	0.6	-1.9	-0.8	-1.1
2016	-1.1	0.7	1.0	1.6	-0.6	-0.7	-0.4
2017	-0.6	0.2	0.7	1.0	0.2	1.5	0.9
2018	0.1	1.2	1.2	1.2	0.5	-0.5	0.1
2019	0.4	1.8	1.9	1.6	-0.8	-1.1	-0.9
2020	0.2	2.2	2.3	2.2	-0.1	-0.4	-0.4
2021	0.0	2.7	2.7	2.7	-0.7	-0.6	-0.6

Source: The Treasury

Table 11 – Sources for alternative output gaps

Institution	Source	Publication date
The Treasury	*Half Year Economic and Fiscal Update*	December 2016
RBNZ	*Monetary Policy Statement*	November 2016
IMF	*World Economic Outlook*	October 2016
OECD	*Economic Outlook*	June 2016

Table 12 – Elasticity values used in sensitivity analysis

Elasticities	Base case	Previous	Low	High
Individual income tax	1.2	0.9	0.6	2.5
Company tax	2.4	1.4	1.2	4.8
GST	1.0	1.0	0.5	2.0
Excise duties	1.3	1.0	0.7	2.6
Other indirect tax	1.0	1.0	0.5	2.0
Interest, profits and dividends	0.0	0.0	0.0	0.0
Other receipts	1.0	1.0	0.5	2.0

Source: The Treasury

Table 13 – Output gap estimates used in sensitivity analysis (% of potential GDP)

June year	The Treasury	RBNZ	IMF	OECD
1997	1.0		1.7	1.3
1998	-0.8		-0.3	-0.1
1999	-2.1		-1.2	-0.7
2000	0.6	0.4	-0.3	0.0
2001	-0.8	-1.0	-0.7	-0.3
2002	-0.6	-0.5	-1.0	-0.1
2003	0.0	0.5	-0.4	1.2
2004	1.3	1.9	0.2	2.1
2005	1.1	1.6	0.5	2.1
2006	1.2	1.6	0.7	1.5
2007	2.0	2.2	1.7	1.8
2008	2.3	2.1	1.6	0.9
2009	-0.8	-1.4	-0.4	-1.2
2010	-1.4	-2.0	-1.5	-1.7
2011	-2.1	-2.4	-1.1	-1.6
2012	-1.5	-1.3	-0.6	-1.2
2013	-1.4	-1.1	-0.3	-1.1
2014	-1.1	-0.6	0.0	-1.0
2015	-0.8	0.0	0.2	-0.3
2016	-1.1	0.0	0.0	0.3
2017	-0.6	0.8	0.1	0.6
2018	0.1	1.3		
2019	0.4	1.2		
2020	0.2	0.9		
2021	0.0			

Sources: The Treasury, RBNZ, OECD

Table 14 – Cyclically-adjusted balance with alternative output gap and elasticity values (% of GDP)

June year	OBEGAL	Baseline CAB	CAB using alternative output gaps			CAB using alternative elasticities	
			RBNZ	IMF	OECD	Low	High
1997	1.8	1.2		0.8	1.0	1.4	0.8
1998	2.2	2.7		2.4	2.3	2.5	3.1
1999	0.1	1.3		0.8	0.5	0.8	2.2
2000	0.5	0.2	0.3	0.7	0.5	0.3	-0.1
2001	1.2	1.6	1.8	1.6	1.4	1.4	2.0
2002	1.9	2.2	2.2	2.5	2.0	2.1	2.5
2003	3.2	3.2	2.9	3.4	2.5	3.2	3.1
2004	3.8	3.0	2.6	3.7	2.5	3.3	2.3
2005	4.5	3.8	3.5	4.2	3.3	4.1	3.2
2006	4.3	3.6	3.4	3.9	3.4	3.9	2.9
2007	3.3	2.2	2.0	2.4	2.3	2.7	1.1
2008	3.0	1.6	1.8	2.0	2.4	2.3	0.4
2009	-2.1	-1.6	-1.3	-1.8	-1.4	-1.8	-1.2
2010	-3.2	-2.5	-2.2	-2.5	-2.3	-2.8	-1.8
2011	-8.9	-3.4	-3.3	-4.0	-3.7	-3.9	-2.5
2012	-4.3	-2.7	-2.7	-3.1	-2.8	-3.0	-1.9
2013	-2.0	-1.2	-1.3	-1.7	-1.3	-1.5	-0.5
2014	-1.2	-0.5	-0.8	-1.1	-0.6	-0.8	0.0
2015	0.2	0.6	0.3	0.2	0.5	0.4	1.0
2016	0.7	1.6	1.2	1.2	1.0	1.3	2.1
2017	0.2	1.0	0.4	0.8	0.6	0.5	0.9
2018	1.2	1.2	0.7			1.2	1.1
2019	1.8	1.6	1.4			1.7	1.4
2020	2.2	2.2	1.9			2.2	2.1
2021	2.7	2.7				2.7	2.7

Source: The Treasury

Table 15 – Core Crown fiscal impulse with alternative output gap and elasticity values (% of GDP)

June year	Fiscal impulse	Fiscal impulse using alternative output gaps			Fiscal impulse using alternative elasticities	
		RBNZ	IMF	OECD	Low	High
1997	2.3		1.9	2.8	2.2	2.4
1998	0.2		0.1	0.4	0.6	-0.5
1999	0.9		1.0	1.1	1.1	0.3
2000	0.8		-0.1	-0.1	0.3	1.9
2001	-1.3		-0.8	-0.8	-1.0	-1.8
2002	-0.8	-0.6	-1.1	-0.8	-0.9	-0.7
2003	-0.2	-0.1	-0.3	0.1	-0.4	0.0
2004	0.6	0.7	0.3	0.4	0.3	1.1
2005	-1.7	-1.7	-1.4	-1.6	-1.6	-1.7
2006	0.6	0.5	0.6	0.2	0.5	0.6
2007	0.5	0.5	0.6	0.3	0.4	0.9
2008	0.4	0.2	0.2	-0.2	0.3	0.5
2009	3.3	3.2	3.8	3.8	3.9	2.0
2010	1.9	1.9	1.7	1.9	2.0	1.7
2011	0.5	0.6	0.9	0.8	0.6	0.3
2012	-0.5	-0.3	-0.5	-0.6	-0.6	-0.3
2013	-1.6	-1.6	-1.5	-1.6	-1.6	-1.6
2014	-0.5	-0.4	-0.4	-0.6	-0.5	-0.3
2015	-1.9	-1.8	-2.0	-1.8	-2.0	-1.9
2016	-0.6	-0.5	-0.5	-0.2	-0.5	-0.7
2017	0.2	0.4	0.0	0.1	0.1	0.4
2018	0.5	0.3			0.3	0.7
2019	-0.8	-1.1			-0.9	-0.7
2020	-0.1	-0.2			-0.1	-0.2
2021	-0.7				-0.7	-0.8

Source: The Treasury

Table 16 – Terms of trade adjustment to the cyclically-adjusted balance (% of GDP)

June year	Baseline CAB	Terms-of-trade adjustment (impact on CAB)				CAB with terms-of-trade adjustment			
		50-year average	30-year average	20-year average	Statistical filter	50-year average	30-year average	20-year average	Statistical filter
1997	1.2	0.7	0.7	1.1	-0.3	1.9	1.9	2.3	0.9
1998	2.7	1.0	1.0	1.4	-0.1	3.7	3.7	4.1	2.6
1999	1.3	1.2	1.2	1.6	0.1	2.5	2.5	2.9	1.4
2000	0.2	1.4	1.4	1.8	0.3	1.6	1.6	2.0	0.5
2001	1.6	1.3	1.3	1.8	0.1	2.9	2.9	3.4	1.7
2002	2.2	1.1	1.1	1.6	0.1	3.3	3.3	3.8	2.3
2003	3.2	1.0	1.0	1.5	0.4	4.1	4.1	4.6	3.5
2004	3.0	0.0	0.0	0.4	-0.3	3.0	3.0	3.4	2.7
2005	3.8	-0.5	-0.5	0.0	-0.4	3.3	3.3	3.8	3.4
2006	3.6	-0.2	-0.2	0.3	0.1	3.3	3.3	3.8	3.7
2007	2.2	-0.3	-0.3	0.2	0.3	1.8	1.8	2.3	2.5
2008	1.6	-1.8	-1.8	-1.2	-0.8	-0.1	-0.1	0.4	0.8
2009	-1.6	-0.8	-0.7	-0.2	0.4	-2.4	-2.4	-1.8	-1.2
2010	-2.5	-0.7	-0.7	-0.3	0.4	-3.2	-3.2	-2.8	-2.1
2011	-3.4	-1.8	-1.8	-1.2	-0.3	-5.2	-5.2	-4.7	-3.7
2012	-2.7	-1.6	-1.6	-1.1	0.1	-4.3	-4.3	-3.7	-2.6
2013	-1.2	-1.2	-1.2	-0.7	0.7	-2.4	-2.4	-1.9	-0.5
2014	-0.5	-3.2	-3.2	-2.6	-0.9	-3.7	-3.7	-3.2	-1.4
2015	0.6	-2.6	-2.6	-2.1	-0.2	-2.0	-2.0	-1.5	0.4
2016	1.6	-2.2	-2.2	-1.6	0.3	-0.6	-0.6	-0.1	1.9
2017	1.0	-2.5	-2.5	-2.0	0.0	-1.5	-1.5	-1.0	1.0
2018	1.2	-2.6	-2.6	-2.1	0.0	-1.4	-1.4	-0.9	1.2
2019	1.6	-2.7	-2.7	-2.2	0.0	-1.0	-1.0	-0.5	1.6
2020	2.2	-2.7	-2.7	-2.2	0.0	-0.6	-0.6	-0.1	2.1
2021	2.7	-2.8	-2.8	-2.3	0.1	-0.1	-0.1	0.5	2.8

Source: The Treasury

Accounting Policies

The forecast financial statements contained in the published *Half Year Economic and Fiscal Update 2016* are based on the following accounting policies:

Statement of compliance

These forecast financial statements have been prepared in accordance with the Public Finance Act 1989 and with New Zealand Generally Accepted Accounting Practice (NZ GAAP) as defined in the Financial Reporting Act 2013.

These forecasts have been prepared in accordance with Public Sector PBE Accounting Standards (PBE Standards) – Tier 1. These standards are based on International Public Sector Accounting Standards (IPSAS). The forecast financial statements comply with PBE FRS-42: Prospective Financial Statements and NZ GAAP as it relates to prospective financial statements.

For the purposes of these financial statements, the Government reporting entity has been designated as a public benefit entity (PBE). Public benefit entities (PBEs) are reporting entities whose primary objective is to provide goods or services for community or social benefit and where any equity has been provided with a view to supporting that primary objective rather than for a financial return to equity holders.

The use of public resources by the Government is primarily governed by the Public Finance Act 1989, the State Sector Act 1988, the Crown Entities Act 2004 and the State-owned Enterprises Act 1986.

Reporting and forecast period

The reporting periods for these financial statements are the years ended 30 June 2017 to 30 June 2021.

The "2016 Actual" figures reported in the statements are the audited results reported in the Financial Statements of Government for the year ended 30 June 2016. The "2017 Previous Budget" figures are the original forecasts to 30 June 2017 as presented in the 2016 Budget.

Where necessary, the financial information for State-owned Enterprises and Crown entities that have a balance date other than 30 June has been adjusted for any transactions or events that have occurred since their most recent balance date and that are significant for the Financial Statements of the Government. Such entities are primarily in the education sector.

Basis of preparation

These forecast financial statements have been prepared on the basis of historic cost modified by the revaluation of certain assets and liabilities, and prepared on an accrual basis, unless otherwise specified (for example, the Statement of Cash Flows).

The forecast financial statements are presented in New Zealand dollars rounded to the nearest million, unless separately identified.

Judgements and estimations

The preparation of these financial statements requires judgements, estimates and assumptions that affect the application of policies and reported amounts of assets and liabilities, revenue and expenses. For example, the present value of large cash flows that are predicted to occur a long time into the future, as with the settlement of ACC outstanding claim obligations and Government superannuation retirement benefits, depends critically on judgements regarding future cash flows, including inflation assumptions and the risk-free discount rate used to calculate present values.

These forecasts include budget adjustments for new unallocated spending during the year (both operating and capital) and top-down adjustments which reduce the bias for forecast expenditure by departments to reflect maximum spending limits instead of mid-point estimates. The estimates and associated assumptions are based on historical experience and various other factors that are believed to be reasonable under the circumstances. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimate is revised, if the revision affects only that period, or in the period of the revision and future periods if the revision affects both current and future periods.

Where these judgements significantly affect the amounts recognised in the forecast financial statements they are described below.

Reporting entity

The Government reporting entity as defined in section 2(1) of the Public Finance Act 1989 means:

- the Sovereign in right of New Zealand, and
- the legislative, executive, and judicial branches of the Government of New Zealand.

The description “Consolidated Financial Statements of the Government reporting entity” and the description “Financial Statements of the Government” have the same meaning and can be used interchangeably.

Basis of combination

These forecast financial statements combine the following entities using the acquisition method of combination:

Core Crown entities

- Ministers of the Crown
- Government departments
- Offices of Parliament
- the Reserve Bank of New Zealand
- New Zealand Superannuation Fund

Other entities

- State-owned Enterprises
- Crown entities (excluding tertiary education institutions)
- Air New Zealand Limited
- Regenerate Christchurch
- Education Council of Aoteroa New Zealand
- Organisations listed in Schedule 4 and 4A (Non-listed companies in which the Crown is majority or sole shareholder) of the Public Finance Act 1989
- Organisations listed in Schedule 5 (Mixed ownership model companies) of the Public Finance Act 1989
- Legal entities listed in Schedule 6 (Legal entities created by Treaty of Waitangi settlement Acts) of the Public Finance Act 1989

The Crown has a full residual interest in all the above entities with the exception of Air New Zealand Limited, Tāmaki Redevelopment Company Limited (listed in Schedule 4A of the Public Finance Act 1989), Regenerate Christchurch and the entities listed in Schedule 5 of the Public Finance Act 1989 (Mixed Ownership Model Companies).

Corresponding assets, liabilities, revenue and expenses, are added together line by line. Transactions and balances between these sub-entities are eliminated on combination. Where necessary, adjustments are made to the financial statements of controlled entities to bring the accounting policies into line with those used by the Government reporting entity.

Tertiary education institutions are equity-accounted for the reasons explained in the note to the Government's financial statements for the period ended 30 June 2016. This treatment recognises these entities' net assets, including asset revaluation movements, surpluses and deficits.

The basis of combination for a joint venture depends on the form of the joint venture.

Significant Accounting Policies

The accounting policies set out below have been applied consistently to all periods in the *Half Year Update*.

Revenue

Taxation revenue levied through the Crown's sovereign power

The Government provides many services and benefits that do not give rise to revenue. Further, payment of tax does not of itself entitle a taxpayer to an equivalent value of services or benefits, since there is no relationship between paying tax and receiving Crown services and transfers. Such revenue is received through the exercise of the sovereign power of the Crown in Parliament.

Tax revenue is recognised when a taxable event has occurred and the tax revenue can be reliably measured. The taxable event is defined as follows:

Revenue type	*Revenue recognition point*
Source deductions	When an individual earns income that is subject to PAYE
Resident withholding tax (RWT)	When an individual is paid interest or dividends subject to deduction at source
Fringe benefit tax (FBT)	When benefits are provided that give rise to FBT
Income tax	The earning of assessable income during the taxation period by the taxpayer
Goods and services tax (GST)	When the purchase or sale of taxable goods and services occurs during the taxation period
Customs and excise duty	When goods become subject to duty
Road user charges and motor vehicle fees	When payment of the fee or charge is made
Other indirect taxes	When the debt to the Crown arises
ACC levies	The levy revenue is earned evenly over the levy period
Other levies	When the obligation to pay the levy is incurred

The New Zealand tax system is predicated on self-assessment where taxpayers are expected to understand the tax laws and comply with them. Inland Revenue has implemented systems and controls (eg, performing audits of taxpayer records) in order to detect and correct situations where taxpayers are not complying with the various acts it administers.

Revenue earned through operations

Revenue from the supply of goods and services to third parties is measured at the fair value of consideration received. Revenue from the supply of goods is recognised when the significant risks and rewards of ownership have been transferred to the buyer. Revenue from the supply of services is recognised on a straight-line basis over the specified period for the services unless an alternative method better represents the stage of completion of the transaction.

Interest revenue

Interest revenue is accrued using the effective interest method.

The effective interest rate exactly discounts estimated future cash receipts through the expected life of the financial asset to that asset's net carrying amount. The method applies this rate to the principal outstanding to determine interest revenue each period.

Dividend revenue

Dividend revenue from investments is recognised when the Government's rights as a shareholder to receive payment have been established.

Rental revenue

Rental revenue is recognised in the statement of financial performance on a straight-line basis over the term of the lease. Lease incentives granted are recognised evenly over the term of the lease as a reduction in total rental revenue.

Donated or subsidised assets

Where an asset is acquired for nil or nominal consideration, the fair value of the asset received is recognised as revenue in the statement of financial performance.

If control of the donated assets is conditional on the satisfaction of performance obligations, the revenue is deferred and recognised when the conditions are satisfied.

Gains

Gains may be reported in the Statement of Financial Performance when assets are revalued or liabilities are devalued in certain circumstances as described in the accounting policies for those assets and liabilities. For the purposes of reporting the operating balance before gains and losses (OBEGAL) these gains are excluded from total revenue and presented elsewhere in the Statement of Financial Performance.

Expenses

General

Expenses are recognised in the period to which they relate.

Welfare benefits and entitlements

Welfare benefits and entitlements, including New Zealand Superannuation, are recognised in the period when an application for a benefit has been received and the eligibility criteria have been met.

Grants and subsidies

Where grants and subsidies are at the government's discretion until payment, the expense is recognised when the payment is made. Otherwise, the expense is recognised when the specified criteria for the grant or subsidy have been fulfilled and notice has been given to the government.

Interest expense

Interest expense is accrued using the effective interest method.

The effective interest rate exactly discounts estimated future cash payments through the expected life of the financial liability to that liability's net carrying amount. The method applies this rate to the principal outstanding to determine interest expense each period.

Losses

Losses may be reported in the Statement of Financial Performance when assets are devalued or liabilities are revalued in certain circumstances as described in the accounting policies for those assets and liabilities. For the purposes of reporting the operating balance before gains and losses (OBEGAL) these losses are excluded from total expenses and presented elsewhere in the Statement of Financial Performance.

Foreign currency

Transactions in foreign currencies are initially translated at the foreign exchange rate at the date of the transaction. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at year-end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognised in the statement of financial performance, except when recognised in the statement of comprehensive revenue and expense when hedge accounting is applied.

Non-monetary assets and liabilities measured at historical cost in a foreign currency are translated using the exchange rate at the date of the transaction. Non-monetary assets and liabilities denominated in foreign currencies and measured at fair value are translated into New Zealand dollars at the exchange rate applicable at the fair value date. The associated foreign exchange gains or losses follow the fair value gains or losses to either the statement of financial performance or the statement of comprehensive revenue and expense.

Foreign exchange gains and losses arising from translating monetary items that form part of the net investment in a foreign operation are reported in a translation reserve in net worth and recognised in the statement of comprehensive revenue and expense.

Sovereign receivables and taxes repayable

Receivables from taxes, levies and fines (and any penalties associated with these activities) as well as social benefit receivables which do not arise out of a contract are collectively referred to as sovereign receivables.

Receivables arising from sovereign revenue will be initially recognised at fair value. These receivables are subsequently adjusted for penalties and interest as they are charged, and tested for impairment. Interest and penalties charged on tax receivables are presented as tax revenue in the statement of financial performance.

Taxes repayable represent refunds due to taxpayers and are recognised at their nominal value. They are subsequently adjusted for interest once account and refund reviews are complete.

Financial Instruments – forecasting policies

For forecasting purposes, financial instruments held at the forecast preparation date are assumed to be held until they mature. Additional gains and losses on financial assets measured at fair value are based on long-run rate of return assumptions appropriate to the forecast portfolio mix, after adjusting for interest revenue and dividend revenue which are reported separately. Gains and losses on financial liabilities measured at fair value are assumed to unwind over the period to maturity, as they are assumed to be redeemed at par value.

Forecast sales and purchases of financial instruments are assumed to be issued at par value, with no premiums or discounts forecast. The exceptions are interest-free assets with long maturities, such as student loans, where a write-down to fair value is recognised when the loan or receivable is issued.

Derivatives held for trading are measured at fair value, which is nil when initially entered into. That is, fair value changes are only recognised after the derivative is created and as a result of changes in underlying variables such as exchange rates. Hence, forecasts for derivatives expected to be entered into over the forecast period are assumed to have a nil balance. Forward margins on forward-exchange contracts existing at the forecast preparation date are amortised over the period of the contract on a straight line basis.

Gains and losses are not forecast for financial assets measured at amortised cost.

Financial instruments – accounting policies

Non-derivative financial assets

Financial assets are designated into the following categories: loans and receivables at amortised cost, financial assets available-for-sale, financial assets held-for-trading and financial assets designated as fair value through the operating balance. This designation is made by reference to the purpose of the financial instruments, policies and practices for their management, their relationship with other instruments and the reporting costs and benefits associated with each designation.

The maximum loss due to default on any financial asset is the carrying value reported in the statement of financial position.

Major financial asset type	*Designation*
Trade and other receivables	All designated as loans and receivables at amortised cost
Student loans	All designated as loans and receivables at amortised cost
Kiwibank mortgages	All designated as loans and receivables at amortised cost
Other advances	Generally designated as loans and receivables at amortised cost
IMF financial assets	All designated as loans and receivables at amortised cost
Share investments	Generally designated as fair value through the operating balance
Marketable securities	Generally designated as fair value through the operating balance
Long-term deposits	Generally designated as loans and receivables at amortised cost

Loans and receivables are recognised initially at fair value plus transaction costs and subsequently measured at amortised cost using the effective interest method (refer interest revenue policy). Loans and receivables issued with durations of less than 12 months are recognised at their nominal value, unless the effect of discounting is material. Allowances for estimated irrecoverable amounts are recognised when there is objective evidence that the asset is impaired. Interest, impairment losses and foreign exchange gains and losses are recognised in the statement of financial performance.

Financial assets held-for-trading and financial assets designated at fair value through the operating balance are recorded at fair value with any realised and unrealised gains or losses recognised in the statement of financial performance.

A financial asset is designated at fair value through the operating balance if acquired principally for the purpose of trading in the short term. It may also be designated into this category if the accounting treatment results in more relevant information because it either significantly reduces an accounting mismatch with related liabilities or is part of a group of financial assets that is managed and evaluated on a fair value basis, such as with the NZ Superannuation Fund. Gains or losses from interest, foreign exchange and other fair value movements are separately reported in the statement of financial performance. Transaction costs are expensed as they are incurred.

Available-for-sale financial assets are initially recorded at fair value plus transaction costs. They are subsequently recorded at fair value with any resultant fair value gains or losses recognised in the statement of comprehensive revenue and expense, with some exceptions. Those exceptions are for impairment losses, any interest calculated using the effective interest method and, in the case of monetary items (such as debt securities), foreign exchange gains and losses resulting from translation differences due to changes in amortised cost of the asset. These latter items are recognised in the statement of financial performance. For non-monetary available-for-sale financial assets (eg, some unlisted equity instruments) the fair value movements recognised in the statement of comprehensive revenue and expense include any related foreign exchange component. At derecognition, the cumulative fair value gain or loss previously recognised in the statement of comprehensive revenue and expense, is recognised in the statement of financial performance.

Cash and cash equivalents include cash on hand, cash in transit, bank accounts and deposits with an original maturity of no more than three months.

Fair values of quoted investments are based on market prices. Regular way purchases and sales of all financial assets are accounted for at trade date. If the market for a financial asset is not active, fair values for initial recognition and, where appropriate, subsequent measurement are established by using valuation techniques, as set out in the notes to the financial statements. At each balance date an assessment is made whether there is objective evidence that a financial asset or group of financial assets is impaired.

Non-derivative financial liabilities

Financial liabilities are designated into the following categories: amortised cost, financial liabilities held-for-trading and financial liabilities designated as fair value through the operating balance. This designation is made by reference to the purpose of the financial instruments, policies and practices for their management, their relationship with other instruments and the reporting costs and benefits associated with each designation.

Major financial liability type	*Designation*
Accounts payable	All designated at amortised cost
Government stock	Generally designated at amortised cost
Treasury bills	Generally designated at amortised cost
Government retail stock	All designated at amortised cost
Settlement deposits with Reserve Bank	All designated at amortised cost
Issued currency	Not designated: Recognised at face value

Financial liabilities held-for-trading and financial liabilities designated at fair value through the operating balance are recorded at fair value with any realised and unrealised gains or losses recognised in the statement of financial performance. A financial liability is designated at fair value through the operating balance if acquired principally for the purpose of trading in the short term. It may also be designated into this category if the accounting treatment results in more relevant information because it either eliminates or significantly reduces an accounting mismatch with related assets or is part of a group of financial liabilities that is managed and evaluated on a fair value basis. Gains or losses from interest, foreign exchange and other fair value movements are separately reported in the statement of financial performance. Transaction costs are expensed as they are incurred.

Other financial liabilities are recognised initially at fair value less transaction costs and are subsequently measured at amortised cost using the effective interest method. Financial liabilities entered into with durations of less than 12 months are recognised at their nominal value. Amortisation and, in the case of monetary items, foreign exchange gains and losses, are recognised in the statement of financial performance as is any gain or loss when the liability is derecognised.

Currency issued for circulation, including demonetised currency after 1 July 2004, is recognised at face value. Currency issued represents a liability in favour of the holder.

Derivative financial instruments

Derivative financial instruments are recognised both initially and subsequently at fair value. They are reported as either assets or liabilities depending on whether the derivative is in a net gain or net loss position respectively. Recognition of the movements in the value of derivatives depends on whether the derivative is designated as a hedging instrument and, if so, the nature of the item being hedged (see Hedging section below).

Derivatives that are not designated for hedge accounting are classified as held-for-trading financial instruments with fair value gains or losses recognised in the statement of financial performance. Such derivatives may be entered into for risk management purposes, although not formally designated for hedge accounting, or for tactical trading.

Hedging

Individual entities consolidated within the Government reporting entity apply hedge accounting after considering the costs and benefits of adopting hedge accounting, including:

- whether an economic hedge exists and the effectiveness of that hedge
- whether the hedge accounting qualifications could be met, and
- the extent to which it would improve the relevance of reported results.

(a) Cash flow hedge

Where a derivative qualifies as a hedge of variability in asset or liability cash flows (cash flow hedge), the effective portion of any gain or loss on the derivative is recognised in the statement of comprehensive revenue and expense and the ineffective portion is recognised in the statement of financial performance. Where the hedge of a forecast transaction subsequently results in the recognition of a non-financial asset or non-financial liability (eg, where the hedge relates to the purchase of an asset in a foreign currency), the amount recognised in the statement of comprehensive revenue and expense is included in the initial cost of the asset or liability. Otherwise, gains or losses recognised in the statement of comprehensive revenue and expense transfer to the statement of financial performance in the same period as when the hedged item affects the statement of financial performance (eg, when the forecast sale occurs). Effective portions of the hedge are recognised in the same area of the statement of financial performance as the hedged item.

When a hedging instrument expires or is sold, or when a hedge no longer meets the criteria for hedge accounting, any cumulative gain or loss existing in net worth at that time remains in net worth and is recognised when the forecast transaction is ultimately recognised in the statement of financial performance. When a forecast transaction is no longer expected to occur, the cumulative gain or loss that was reported in the statement of comprehensive revenue and expense is transferred to the statement of financial performance.

(b) Fair value hedge

Where a derivative qualifies as a hedge of the exposure to changes in fair value of an asset or liability (fair value hedge) any gain or loss on the derivative is recognised in the statement of financial performance together with any changes in the fair value of the hedged asset or liability. The carrying amount of the hedged item is adjusted by the fair value gain or loss on the hedged item in respect of the risk being hedged.

Inventories

Inventories are recorded at the lower of cost (calculated using a weighted average method) and net realisable value. Inventories held for distribution for public benefit purposes are recorded at cost adjusted where applicable for any loss of service potential. Where inventories are acquired at no cost, or for nominal consideration, their cost is deemed to be fair value, usually determined through an assessment of current replacement cost at the date of acquisition.

Inventories include unissued currency and harvested agricultural produce (eg, logs, wool). The cost of harvested agricultural produce is measured at fair value less estimated costs to sell at the point of harvest.

Property, plant and equipment – forecasting policy

Forecasts of the value of property, plant and equipment (PPE) (including state highways and rail infrastructure) use the valuations recorded in the Financial Statements of the Government for the prior year and any additional valuations that have occurred up to the forecast preparation date. As a consequence, no further realised or unrealised gains or losses are forecast for the entire forecast period.

Property, plant and equipment – accounting policies

Measurement on initial recognition

Items of PPE are initially recorded at cost. Cost may include transfers from net worth of any gains or losses on qualifying cash flow hedges of foreign currency purchases of PPE. Where an asset is acquired for nil or nominal consideration the asset is recognised initially at fair value, where fair value can be reliably determined, as revenue in the statement of financial performance.

Capitalisation of borrowing costs

Generally, Government borrowings are not directly attributable to individual assets. Therefore, borrowing costs incurred during the period, including any that could be allocated as a cost of completing and preparing assets for their intended use are expensed rather than capitalised.

Subsequent measurement

Subsequent to initial recognition, classes of PPE are accounted for as set out below.

Revaluations are carried out for a number of classes of PPE to reflect the service potential or economic benefit obtained through control of the asset. Revaluation is based on the fair value of the asset, with changes reported by class of asset.

Class of PPE	*Accounting policy*
Land and buildings	Land and buildings are recorded at fair value and, for buildings, less depreciation accumulated since the assets were last revalued. Land associated with the rail network and state highways is valued using an estimate based on adjacent use, as an approximation to fair value. Valuations undertaken in accordance with standards issued by the New Zealand Property Institute are used where applicable. Otherwise, valuations conducted in accordance with the Rating Valuation Act 1998, may be used if they have been confirmed as appropriate by an independent valuer. When revaluing buildings, there must be componentisation to the level required to ensure adequate representation of the material components of the buildings. At a minimum, this requires componentisation to three levels: structure, building services and fit-out.
Specialist military equipment	Specialist military equipment is recorded on a depreciated replacement cost basis less depreciation accumulated since the assets were last revalued. Valuations are obtained through specialist assessment by New Zealand Defence Force advisers, and the basis for the valuation is confirmed as appropriate by an independent valuer.
State highways	State highways are recorded on a depreciated replacement cost basis less depreciation accumulated since the assets were last revalued.
Rail network	Rail infrastructure used for freight services (freight only and dual use lines required for freight operations) are recorded at fair value less depreciation accumulated since the assets were last revalued. Rail infrastructure not required for freight operations and used for metro services is recorded on a depreciated replacement cost basis less depreciation accumulated since the assets were last revalued.
Aircraft	Aircraft (excluding specialised military equipment) are recorded at fair value less depreciation accumulated since the assets were last revalued.
Electricity distribution	Electricity distribution network assets are recorded at cost, less depreciation and impairment losses accumulated since the assets were purchased.
Electricity generation	Electricity generation assets are recorded at fair value less depreciation accumulated since the assets were last revalued.
Specified cultural and heritage assets	Specified cultural and heritage assets comprise national parks, conservation areas and related recreational facilities, as well as National Archives holdings and the collections of the National Library, Parliamentary Library and Te Papa. Of these, non-land assets are recorded at fair value less subsequent impairment losses. Assets are not reported with a financial value in cases where they are not realistically able to be reproduced or replaced, and where no market exists to provide a valuation. For example, Crown research institutes own various collections, library resources and databases that are an integral part of the research work they undertake. These collections are highly specialised and there is no reliable basis for establishing a valuation. They have therefore not been valued for financial reporting purposes.
Other plant and equipment	Other plant and equipment, which includes motor vehicles and office equipment, are recorded at cost less depreciation and impairment losses accumulated since the assets were purchased.

Revaluation

Classes of PPE that are revalued are revalued at least every five years or whenever the carrying amount differs materially to fair value.

Items of PPE are revalued to fair value for the highest and best use of the item on the basis of the market value of the item, or on the basis of market evidence, such as discounted cash flow calculations. If no market evidence of fair value exists, an optimised depreciated replacement cost approach is used as the best proxy for fair value. Where an item of PPE is recorded at its optimised depreciated replacement cost, this cost is based on the estimated present cost of constructing the existing item of PPE by the most appropriate method of construction, less allowances for physical deterioration and optimisation for obsolescence and relevant surplus capacity. Where an item of PPE is recorded at its optimised depreciated replacement cost, the cost does not include any borrowing costs.

When an item of property, plant and equipment is revalued, any accumulated depreciation at the date of revaluation is eliminated against the gross carrying amount of the asset and the net amount restated to the revalued amount of the asset.

Unrealised gains and losses arising from changes in the value of PPE are recognised as at balance date. To the extent that a gain reverses a loss previously charged to the statement of financial performance for the asset class, the gain is credited to the statement of financial performance. Otherwise, gains are added to an asset revaluation reserve for that class of asset. To the extent that there is a balance in the asset revaluation reserve for the asset class, any loss is deducted from that reserve. Otherwise, losses are reported in the statement of financial performance.

Depreciation

Depreciation is charged on a straight-line basis at rates calculated to allocate the cost or valuation of an item of PPE, less any estimated residual value, over its remaining useful life.

Typically, the estimated useful lives of different classes of PPE are as follows:

Class of PPE	*Estimated useful lives*
Buildings	25 to 150 years
Specialist military equipment (SME)	5 to 55 years
State highways:	
Pavement (surfacing)	7 years
Pavement (other)	50 years
Bridges	70 to 105 years
Rail Network:	
Track and ballast	40 to 50 years
Tunnels and bridges	75 to 200 years
Overhead traction and signalling	15 to 80 years
Aircraft (excluding SME)	10 to 20 years
Electricity distribution network	2 to 80 years
Electricity generation assets	25 to 100 years
Other plant and equipment	3 to 30 years

Specified heritage and cultural assets are generally not depreciated.

Impairment

For assets held at cost, where an asset's recoverable amount is less than its carrying amount, it is reported at its recoverable amount and an impairment loss is recognised. The main reason for holding some assets (for example, electricity generation assets) is to generate cash. For these assets the recoverable amount is the higher of the amount that could be recovered by sale (after deducting the costs of sale) or the amount that will be generated by using the asset through its useful life. Some assets do not generate cash (for example, state highways) and for those assets, depreciated replacement cost is used. Losses resulting from impairment are reported in the statement of financial performance, unless the asset is carried at a revalued amount in which case any impairment loss is treated as a revaluation decrease.

Disposal

Realised gains and losses arising from disposal of PPE are generally recognised in the statement of financial performance when the significant risks and rewards of ownership of the asset have transferred to the acquirer. Any balance attributable to the disposed asset in the asset revaluation reserve is transferred to taxpayer funds.

Public private partnerships

A public private partnership (also known as a service concession arrangement) is an arrangement between the Government and a private sector partner in which the private sector partner uses specified assets to supply a public service on behalf of the Government for a specified period of time and is compensated for its services over the period of the arrangement. The costs of the specified assets are financed by the private sector partner, except where existing assets of the Government (generally land) are allocated to the arrangement. Payments made by the Government to a private sector partner over the period of a service concession arrangement cover the costs of the provision of services, interest expenses and repayment of the liability incurred to acquire the specified assets.

The assets in a public private partnership are recognised as assets of the Government. If the assets are progressively constructed, the Government progressively recognises work-in-progress at cost and a financial liability of the same value is also recognised. When the assets are fully constructed, the total asset cost and the matching financial liability reflect the value of the future compensation to be provided to the private-sector partner for the assets.

Subsequent to initial recognition:

- the assets are accounted for in accordance with the accounting policy applicable to the classes of property, plant and equipment that the specified assets comprise, and
- the financial liabilities are measured at amortised cost.

Equity accounted investments

NZ GAAP determines the combination bases for entities that make up the Government reporting entity and is used by public benefit entities to determine whether they control another entity.

However, NZ GAAP is not clear about how the definitions of control and significant influence should be applied in some circumstances in the public sector, for example, where legislation provides public sector entities with statutory autonomy and independence, in particular with Tertiary Education Institutions. Treasury's view is that because the Government cannot determine their operating and financing policies, but does have a number of powers in relation to these entities, it is appropriate to treat them as associates.

Biological assets

Biological assets (eg, trees and sheep) managed for harvesting into agricultural produce (eg, logs and wool) or for transforming into additional biological assets are measured at fair value less estimated costs to sell, with any realised and unrealised gains or losses reported in the statement of financial performance. Where fair value cannot be reliably determined, the asset is recorded at cost less accumulated depreciation and accumulated impairment losses. For commercial forests, fair value takes into account age, quality of timber and the forest management plan.

Biological assets managed for harvesting into agricultural produce, or being transformed into additional biological assets are reported as other assets. Other biological assets are recorded as other property, plant and equipment in accordance with the policies for property, plant and equipment.

Intangible assets

Intangible assets are initially recorded at cost.

The cost of an internally generated intangible asset represents expenditure incurred in the development phase of the asset only. The development phase occurs after the following can be demonstrated: technical feasibility; ability to complete the asset; intention and ability to sell or use; and development expenditure can be reliably measured. Research is "original and planned investigation undertaken with the prospect of gaining new scientific or technical knowledge and understanding". Expenditure incurred on the research phase of an internally generated intangible asset is expensed when it is incurred. Where the research phase cannot be distinguished from the development phase, the expenditure is expensed when incurred.

Where an intangible asset with a market value is internally generated for nil or nominal consideration it is initially reported at cost, which by definition is nil/nominal.

The Government's holdings of assigned amount units arising from the Kyoto protocol are reported at fair value. Other intangible assets with finite lives are subsequently recorded at cost less any amortisation and impairment losses. Amortisation is charged to the statement of financial performance on a straight-line basis over the useful life of the asset. Typically, the estimated useful life of computer software is three to five years.

Intangible assets with indefinite useful lives are not amortised, but are tested at least annually for impairment.

Realised gains and losses arising from disposal of intangible assets are recognised in the statement of financial performance when the significant risks and rewards of ownership have transferred to the acquirer.

Intangible assets with finite lives are reviewed at least annually to determine if there is any indication of impairment. Where an intangible asset's recoverable amount is less than its carrying amount, it is reported at its recoverable amount and an impairment loss is recognised. Losses resulting from impairment are reported in the statement of financial performance.

Goodwill is tested for impairment annually.

Non-current assets held for sale and discontinued operations

Non-current assets or disposal groups are separately classified where their carrying amount will be recovered through a sale transaction rather than continuing use; that is, where such assets are available for immediate sale and where sale is highly probable. Non-current assets held for sale, or disposal groups, are recorded at the lower of their carrying amount and fair value less costs to sell.

Investment property

Investment property is property held primarily to earn rentals or for capital appreciation or both. It does not include property held primarily for strategic purposes or to provide a social service (eg, affordable housing) even though such property may earn rentals or appreciate in value – such property is reported as property, plant and equipment.

Investment properties are measured at fair value. Gains or losses arising from fair value changes are included in the statement of financial performance. Valuations are undertaken in accordance with standards issued by the New Zealand Property Institute.

Employee benefits

Pension liabilities

Obligations for contributions to defined contribution retirement plans are recognised in the statement of financial performance as they fall due. Obligations for defined benefit retirement plans are recorded at the latest actuarial value of the Crown liability. All movements in the liability, including actuarial gains and losses, are recognised in full in the statement of financial performance in the period in which they occur.

Other employee entitlements

Employee entitlements to salaries and wages, annual leave, long service leave, retiring leave and other similar benefits are recognised in the statement of financial performance when they accrue to employees. Employee entitlements to be settled within 12 months are reported at the amount expected to be paid. The liability for long-term employee entitlements is reported as the present value of the estimated future cash outflows.

Termination benefits

Termination benefits are recognised in the statement of financial performance only when there is a demonstrable commitment to either terminate employment prior to normal retirement date or to provide such benefits as a result of an offer to encourage voluntary redundancy. Termination benefits settled within 12 months are reported at the amount expected to be paid, otherwise they are reported as the present value of the estimated future cash outflows.

Insurance contracts

The future cost of outstanding insurance claims liabilities are valued based on the latest actuarial information. The estimate includes estimated payments associated with claims reported and accepted, claims incurred but not reported, claims that may be re-opened, and the costs of managing these claims. Movements of the claims liabilities are reflected in the statement of financial performance. Financial assets backing these liabilities are designated at fair value through the operating balance.

Reinsurance

Premiums paid to reinsurers are recognised as reinsurance expense in the statement of financial performance. Premiums are measured from the attachment date over the period of indemnity of the reinsurance contract, in accordance with the expected pattern of the incidence of risk. Prepaid reinsurance premiums are included in prepayments in the statement of financial position.

Reinsurance and other recoveries receivable

Reinsurance and other recoveries receivable on paid claims and outstanding claims, are recognised as revenue in the statement of financial performance.

Recoveries receivable are assessed in a manner similar to the assessment of outstanding claims and are measured as the present value of the expected future receipts.

Leases

Finance leases transfer, to the Crown as lessee, substantially all the risks and rewards incident on the ownership of a leased asset. Initial recognition of a finance lease results in an asset and liability being recognised at amounts equal to the lower of the fair value of the leased property or the present value of the minimum lease payments. The capitalised values are amortised over the period in which the Crown expects to receive benefits from their use.

Operating leases, where the lessor substantially retains the risks and rewards of ownership, are recognised in a systematic manner over the term of the lease. Leasehold improvements are capitalised and the cost is amortised over the unexpired period of the lease or the estimated useful life of the improvements, whichever is shorter. Lease incentives received are recognised evenly over the term of the lease as a reduction in rental expense.

Other liabilities and provisions

Other liabilities and provisions are recorded at the best estimate of the expenditure required to settle the obligation. Liabilities and provisions to be settled beyond 12 months are recorded at the present value of their estimated future cash outflows.

Contingent liabilities and contingent assets

Contingent liabilities and contingent assets are reported at the point at which the contingency is evident or when a present liability is unable to be measured with sufficient reliability to be recorded in the financial statements (unquantifiable liability). Contingent liabilities, including unquantifiable liabilities, are disclosed if the possibility that they will crystallise is more than remote. Contingent assets are disclosed if it is probable that the benefits will be realised.

Commitments

Commitments are future expenses and liabilities to be incurred on contracts that have been entered into at balance date.

Commitments are classified as:

- Capital commitments: aggregate amount of capital expenditure contracted for but not recognised as paid or provided for at balance date.
- Lease commitments: non-cancellable operating leases with a lease term exceeding one year.

Cancellable commitments that have penalty or exit costs explicit in the agreement on exercising the option to cancel are reported at the value of those penalty or exit costs (ie, the minimum future payments).

Interest commitments on debts, commitments for funding, and commitments relating to employment contracts are not separately reported as commitments.

Comparatives

When presentation or classification of items in the financial statements is amended or accounting policies are changed voluntarily, comparative figures have been restated to ensure consistency with the current period unless it is impracticable to do so.

Comparatives referred to as Previous Budget were forecasts published in the 2016 Budget Economic and Fiscal Update.

Segment analysis

The Government reporting entity is not required to provide segment reporting as it is a public benefit entity. Nevertheless, information is presented for material institutional components and major economic activities within or undertaken by the Government reporting entity. The three major institutional components of the Crown are:

- Core Crown: This group, which includes Ministers, government departments, Offices of Parliament, the Reserve Bank of New Zealand and the New Zealand Superannuation Fund most closely represents the budget sector and provides information that is useful for fiscal analysis purposes. Investments in Crown entities and SOEs are reported at historic cost with no impairment. This ensures losses in those entities are reflected in the appropriate segment.
- Crown entities: This group includes entities governed by the Crown Entities Act 2004. These entities have separate legal form and specified governance frameworks (including the degree to which each Crown entity is required to give effect to, or be independent of, government policy).
- State-owned Enterprises: This group includes entities governed by the State-owned Enterprises Act 1986, and (for the purposes of these statements) also includes Air New Zealand, Mighty River Power (now Mercury NZ Limited), Meridian Energy and Genesis Energy. This group represents entities that undertake commercial activity.

Functional analysis is also provided of a number of financial statements items. This functional analysis is drawn from the Classification of the Functions of Government as developed by the Organisation for Economic Co-operation and Development (OECD).