
Budget Economic and Fiscal Update 2019 Additional Information

The following information forms part of the *Budget Economic and Fiscal Update 2019 (Budget Update)* released by the Treasury on 30 May 2019. This information provides further details on the *Budget Update* and should be read in conjunction with the published document. The additional information includes:

- **Detailed economic forecast information** – breakdowns of the economic forecasts.
- **Treasury and Inland Revenue tax forecasts** – detailed tax revenue and receipts tables comparing Treasury's forecasts with IRD's forecasts.
- **Tax Policy changes** – details of material changes to tax revenue since the *Budget Update* as a result of policy initiatives.
- **Additional fiscal indicators** – estimates of the cyclically-adjusted balance and fiscal impulse.
- **Government Finance Statistics (GFS) for central government** – fiscal indicators presented under a GFS presentation framework to help with cross-country comparisons.
- **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 *Budget Economic and Fiscal Update*.

The economic numbers and forecasts in this section were finalised on 11 April 2019.

Table 1	Real Gross Domestic Product
Table 2	Consumers Price Index and exchange rates
Table 3	Expenditure on gross domestic product and gross domestic product (income) in current prices
Table 4	Labour market indicators
Table 5	Exports – SNA basis
Table 6	Imports – SNA basis
Table 7	Balance of payments – Current account

Table 1 – Real Gross Domestic Product

Production based chain volume series expressed in 2009/10 prices

Seasonally adjusted

	Quarterly \$ million	Quarterly % change	Annual % change	Annual average % change
2016Q1	57,765	1.2	3.9	3.6
2016Q2	58,277	0.9	4.0	3.6
2016Q3	58,810	0.9	4.1	3.8
2016Q4	59,051	0.4	3.5	3.9
2017Q1	59,540	0.8	3.1	3.7
2017Q2	60,051	0.9	3.0	3.4
2017Q3	60,566	0.9	3.0	3.1
2017Q4	61,056	0.8	3.4	3.1
2018Q1	61,376	0.5	3.1	3.1
2018Q2	61,952	0.9	3.2	3.2
2018Q3	62,141	0.3	2.6	3.1
2018Q4	62,487	0.6	2.3	2.8
2019Q1	62,862	0.6	2.4	2.6
2019Q2	63,271	0.7	2.1	2.4
2019Q3	63,792	0.8	2.7	2.4
2019Q4	64,314	0.8	2.9	2.5
2020Q1	64,838	0.8	3.1	2.7
2020Q2	65,325	0.8	3.2	3.0
2020Q3	65,773	0.7	3.1	3.1
2020Q4	66,194	0.6	2.9	3.1
2021Q1	66,616	0.6	2.7	3.0
2021Q2	67,037	0.6	2.6	2.8
2021Q3	67,448	0.6	2.5	2.7
2021Q4	67,840	0.6	2.5	2.6
2022Q1	68,225	0.6	2.4	2.5
2022Q2	68,615	0.6	2.4	2.4
2022Q3	69,021	0.6	2.3	2.4
2022Q4	69,433	0.6	2.3	2.4
2023Q1	69,835	0.6	2.4	2.3
2023Q2	70,241	0.6	2.4	2.4

Sources: Stats NZ, the Treasury

Table 2 – Consumers Price Index and Exchange Rates

	Consumers Price Index			Exchange rates	
	Index	Quarterly % change	Annual % change	TWI	USD
2016Q1	979	0.2	0.4	72.2	0.66
2016Q2	983	0.4	0.4	73.6	0.69
2016Q3	986	0.3	0.4	77.0	0.72
2016Q4	990	0.4	1.3	77.6	0.71
2017Q1	1000	1.0	2.2	78.0	0.71
2017Q2	1000	0.0	1.7	76.5	0.70
2017Q3	1005	0.5	1.9	77.1	0.73
2017Q4	1006	0.1	1.6	73.8	0.70
2018Q1	1011	0.5	1.1	74.9	0.73
2018Q2	1015	0.4	1.5	73.8	0.71
2018Q3	1024	0.9	1.9	72.4	0.67
2018Q4	1025	0.1	1.9	73.5	0.67
2019Q1	1027	0.2	1.6	74.0	0.68
2019Q2	1033	0.6	1.8	73.7	0.68
2019Q3	1040	0.7	1.6	73.7	0.68
2019Q4	1042	0.2	1.7	73.7	0.68
2020Q1	1049	0.6	2.1	73.7	0.68
2020Q2	1054	0.5	2.0	73.7	0.68
2020Q3	1061	0.7	2.0	73.7	0.68
2020Q4	1064	0.2	2.1	73.7	0.68
2021Q1	1071	0.6	2.1	73.7	0.68
2021Q2	1076	0.5	2.1	73.8	0.68
2021Q3	1083	0.7	2.1	73.8	0.68
2021Q4	1086	0.2	2.1	73.9	0.68
2022Q1	1093	0.6	2.1	74.0	0.68
2022Q2	1098	0.5	2.0	74.0	0.68
2022Q3	1105	0.7	2.0	74.1	0.68
2022Q4	1108	0.2	2.0	74.1	0.68
2023Q1	1115	0.6	2.0	74.1	0.68
2023Q2	1120	0.5	2.0	74.1	0.68

Sources: RBNZ, Stats NZ, the Treasury

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

Year ended June	2018			2019			2020			2021			2022			2023			
	Actual \$million	%volume	%price	Forecast \$million	%volume	%price	Forecast \$million	%volume	%price	Forecast \$million	%volume	%price	Forecast \$million	%volume	%price	Forecast \$million	%volume	%price	
Total consumption:	218,029	3.2	1.9	229,355	3.2	2.5	242,703	2.6	2.7	255,663	2.3	2.3	267,559	2.3	2.3	279,925	2.3	2.3	
Gross Fixed Capital Formation:																			
- Residential	21,796	3.4	3.4	23,303	5.2	2.8	25,202	5.4	3.5	27,495	3.4	3.6	29,463	2.0	3.3	31,049	2.0	3.3	
- Business *	45,493	0.7	1.7	48,579	3.8	0.7	48,690	3.6	0.4	50,638	2.4	0.7	52,221	2.1	1.0	53,864	2.1	1.0	
- Total all sectors	67,289	1.4	2.4	69,882	4.2	1.5	73,892	4.1	1.6	78,133	2.7	1.8	81,684	2.1	1.8	84,913	2.1	1.8	
Change in Stocks	1,791			385			440			316			300			337			
Gross National Expenditure	287,136	2.7	1.7	299,828	3.2	2.3	317,035	3.1	2.3	334,112	2.4	2.2	349,543	2.3	2.1	365,175	2.3	2.1	
Exports	79,872	2.7	4.1	85,368	3.1	0.8	88,723	2.8	0.6	91,762	2.6	1.0	95,039	2.5	1.3	98,670	2.5	1.3	
Imports	78,352	2.1	6.5	85,091	3.9	0.4	88,801	3.4	0.1	91,864	2.3	0.4	94,372	2.2	0.8	97,277	2.2	0.8	
Expenditure on GDP	288,812	2.5	1.2	299,713	3.1	2.5	316,957	2.9	2.4	334,009	2.5	2.3	350,210	2.4	2.2	366,568	2.4	2.2	
Statistical Discrepancy	-326			-459			-306			-19			-1			0			
Gross Domestic Product	288,486			299,254			316,652			333,990			350,208			366,568			
Compensation of employees	124,107			130,306			136,936			143,980			150,788			158,040			
Operating Surplus, net:																			
- Agriculture	6,968			6,880			7,031			7,247			7,402			7,684			
- Other	78,991			79,491			85,511			90,884			95,550			99,651			
- Total all sectors	85,959			86,371			92,542			98,131			102,951			107,336			
Consumption of fixed capital	40,517			42,543			44,670			46,904			49,249			51,711			
Indirect Taxes	38,852			40,931			43,401			45,872			48,118			50,378			
Less subsidies	949			897			897			897			897			897			
Gross Domestic Product	288,486			299,254			316,652			333,990			350,208			366,568			

* Central government investment data is currently suppressed in the national accounts. Therefore the usual distinction between market and non-market investment cannot be made.

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	2018	2019	2020	2021	2022	2023
	Actual	Forecast	Forecast	Forecast	Forecast	Forecast
Real GDP (production basis)	3.2	2.4	3.0	2.8	2.4	2.4
Working Age Population	2.2	2.0	1.6	1.5	1.4	1.3
Labour Force	3.1	2.0	1.8	1.7	1.5	1.4
Employment	3.7	2.3	1.9	1.7	1.4	1.3
Labour Productivity*	-1.2	1.4	0.4	1.2	1.2	1.2
CPI (annual percentage change)	1.5	1.8	2.0	2.1	2.0	2.0
Average Ordinary Time Hourly Wages	3.0	3.0	3.2	3.5	3.4	3.6
Average Weekly Earnings	3.2	3.1	3.0	3.4	3.4	3.5
Real Wages	1.4	1.2	1.3	1.4	1.4	1.6
Compensation of Employees	5.8	5.0	5.1	5.1	4.7	4.8
Unit Labour Costs (Hours worked basis)	4.2	1.6	2.8	2.2	2.2	2.4
Real Unit Labour Costs	2.6	-0.2	0.9	0.2	0.2	0.4

* Hours worked basis

Number (000's)						
As at June Quarter	2018	2019	2020	2021	2022	2023
	Actual	Forecast	Forecast	Forecast	Forecast	Forecast
Total Population	4,886	4,962	5,029	5,090	5,149	5,208
Natural Increase	41	34	33	34	34	34
Net Migration	50	42	34	28	25	25
Annual Change	92	76	67	62	59	59
Working Age Population	3,884	3,955	4,016	4,072	4,127	4,181
Annual Change	82	71	61	56	54	54
Not in the labour force (s.a.)	1,129	1,151	1,158	1,168	1,181	1,195
Annual Change	-8	22	8	10	13	14
Labour Force (s.a.)	2,756	2,804	2,857	2,904	2,945	2,985
Annual Change	90	48	54	46	42	40
Total Employment (s.a.)	2,634	2,688	2,743	2,785	2,821	2,858
Annual Change	94	54	54	42	36	37
Unemployment (s.a.)	122	116	115	119	124	128
Annual Change	-3	-6	-1	4	6	3
Participation Rate (% , s.a.)	71.0	70.9	71.2	71.3	71.4	71.4
Unemployment Rate (% , s.a.)	4.4	4.1	4.0	4.1	4.2	4.3

Sources: Stats NZ, the Treasury

s.a. – seasonally adjusted

Table 5 – Exports – SNA basis

Year ended June	Dairy Products			Meat and Meat Products			Other Goods*		
	%volume	%price	\$million	%volume	%price	\$million	%volume	%price	\$million
2015	4.2	-23.2	13,378	1.2	10.9	6,768	3.5	-4.2	28,509
2016	4.5	-11.8	12,336	6.8	0.0	7,234	1.6	2.5	29,687
2017	0.3	8.7	13,427	-9.0	-1.9	6,457	1.6	-0.3	30,070
2018	-2.4	14.8	15,083	4.5	12.4	7,581	5.5	3.7	32,878
2019	1.5	3.0	15,774	8.5	3.6	8,515	2.1	6.4	35,730
2020	6.3	2.8	17,234	-0.3	0.1	8,496	2.0	-1.0	36,096
2021	3.5	2.4	18,269	0.4	0.4	8,562	2.4	-2.0	36,206
2022	3.2	1.9	19,212	0.4	0.1	8,605	2.3	-0.7	36,761
2023	3.2	1.8	20,189	0.4	0.2	8,655	2.3	0.1	37,637

Table 6 – Imports – SNA basis

Year ended June	Total Goods (VFD)			Services			Total Imports		
	%volume	%price	\$million	%volume	%price	\$million	%volume	%price	\$million
2015	7.9	-4.2	50,095	2.7	1.5	16,355	6.6	-2.8	66,450
2016	1.8	1.0	51,533	-1.1	6.3	17,190	1.1	2.3	68,723
2017	6.3	-3.4	52,971	5.5	-2.1	17,761	6.1	-3.1	70,731
2018	8.9	2.8	59,298	5.0	2.2	19,055	7.9	2.6	78,352
2019	1.2	7.0	64,116	5.3	4.6	20,976	2.1	6.5	85,091
2020	4.4	0.0	66,960	2.0	2.1	21,841	3.9	0.4	88,801
2021	4.1	-0.6	69,300	0.8	2.4	22,564	3.4	0.1	91,864
2022	2.8	0.0	71,212	0.6	2.0	23,160	2.3	0.4	94,372
2023	2.6	0.5	73,418	1.1	1.9	23,859	2.2	0.8	97,277

Table 7 – Balance of Payments – Current Account

\$ millions						
Year ended June	2018	2019	2020	2021	2022	2023
	Actual	Forecast	Forecast	Forecast	Forecast	Forecast
Exports Goods	55,542	60,020	61,825	63,037	64,578	66,482
<i>annual % change</i>	11.2	8.1	3.0	2.0	2.4	2.9
Imports Goods	59,298	64,116	66,960	69,300	71,212	73,418
<i>annual % change</i>	11.9	8.1	4.4	3.5	2.8	3.1
Balance on Goods	-3,757	-4,098	-5,135	-6,263	-6,635	-6,936
<i>% of nominal GDP</i>	-1.3	-1.4	-1.6	-1.9	-1.9	-1.9
Exports Services	24,330	25,349	26,898	28,725	30,461	32,188
<i>annual % change</i>	6.8	4.2	6.1	6.8	6.0	5.7
Imports Services	19,055	20,976	21,841	22,564	23,160	23,859
<i>annual % change</i>	7.3	10.1	4.1	3.3	2.6	3.0
Balance on services	5,274	4,380	5,057	6,161	7,302	8,329
<i>% of nominal GDP</i>	1.8	1.5	1.6	1.8	2.1	2.3
Balance on goods & services	1,517	282	-77	-103	667	1,393
<i>% of nominal GDP</i>	0.5	0.1	0.0	0.0	0.2	0.4
Primary and secondary income balance	-11,328	-10,393	-10,688	-11,325	-12,368	-13,552
<i>% of nominal GDP</i>	-3.9	-3.5	-3.4	-3.4	-3.5	-3.7
Current account balance	-9,810	-10,110	-10,765	-11,428	-11,701	-12,159
<i>% of nominal GDP</i>	-3.4	-3.4	-3.4	-3.4	-3.3	-3.3

Sources: Stats NZ, 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.

The Treasury's forecast of total tax revenue is \$0.2 billion (0.2%) lower than Inland Revenue's forecast in 2018/19. Most of this difference is in the forecasts of source deductions, in which the Treasury and Inland Revenue forecasting models differ on how the remaining three months of the 2018/19 fiscal year will play out.

This difference in the source deduction forecasts persists in each year of the five-year forecast period. However, by 2020/21, the Treasury's total tax revenue forecast is higher than Inland Revenue's and remains higher over 2021/22 and 2022/23. The differences in those forecast years are mainly in the forecasts of net company tax and net GST, and mainly arise from the differences in the choice of parameters used in the respective forecasting models. Across the whole forecast period, the Treasury's total tax forecast is 0.4% higher than Inland Revenue's.

Details of the two sets of forecasts are shown in the following two tables.

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)

	2017/18 Actual		2018/19 Estimated Actual		2019/20 Forecast		2020/21 Forecast		2021/22 Forecast		2022/23 Forecast	
	Treasury	IRD Difference	Treasury	IRD Difference	Treasury	IRD Difference	Treasury	IRD Difference	Treasury	IRD Difference	Treasury	IRD Difference
Direct tax												
Individuals												
Source deductions	31,217	(284)	33,174	(284)	35,196	(328)	37,412	(286)	39,647	(243)	42,028	(146)
Other persons tax	6,819	275	6,782	275	7,149	(74)	7,506	26	7,918	125	8,322	220
Refunds	(2,102)	(396)	(2,614)	(396)	(1,937)	61	(1,688)	(46)	(1,923)	(141)	(2,004)	(232)
Fringe benefit tax	559	(12)	558	(12)	585	580	616	21	646	610	677	52
Subtotal: Individuals	36,493	(417)	37,900	(417)	40,993	(336)	43,846	(285)	46,288	(223)	49,023	(106)
Company tax (net)	13,622	211	15,432	211	15,320	344	16,299	342	17,093	400	18,052	501
Withholding taxes on:												
Resident interest income	1,531	(6)	1,613	(6)	1,675	26	1,910	110	2,348	159	2,703	133
Non-resident income	627	25	655	25	648	(22)	676	(34)	720	(35)	751	(29)
Foreign-source dividends	3	..	..	..	..	..	..	..	..	..	..	..
Resident dividend income	753	(22)	743	(22)	796	(4)	849	9	892	7	932	2
Subtotal: Withholding tax	2,914	(3)	3,014	(3)	3,119	..	3,435	85	3,960	131	4,386	106
Total direct tax	53,029	(209)	56,343	(209)	59,432	8	63,580	142	67,341	308	71,461	501
Indirect tax												
GST (net)	28,109	43	29,613	43	31,531	177	33,479	390	35,163	462	36,832	477
Excise duties on:												
Alcoholic drinks	699	725	722	3	748	(6)	771	(4)	795	..	819	4
Tobacco products	399	(20)	477	(20)	430	13	430	8	419	8	418	18
Petroleum fuels	1,058	50	1,184	50	1,332	1,134	1,393	(20)	1,402	(70)	1,411	(126)
Subtotal: excise duties	2,156	33	2,386	33	2,510	47	2,594	(16)	2,616	(62)	2,648	(104)
Other indirect tax												
Customs duty	2,738	(17)	2,809	(17)	2,819	9	2,871	(53)	2,844	(101)	2,858	(107)
Road user charges	1,551	(36)	1,655	(36)	1,799	(23)	1,904	5	1,972	62	2,019	48
Gaming duties	317	(4)	302	(4)	307	8	309	15	311	21	315	22
Motor vehicle fees	227	4	236	4	228	(11)	232	(14)	237	(15)	240	(18)
Exhaustible resource levy	26	4	27	4	25	3	25	3	25	3	24	3
Approved issuer levy, cheque duty & other	109	(4)	104	(4)	106	(3)	108	(2)	104	(9)	105	(10)
Subtotal: Other indirect tax	4,968	(63)	5,169	(63)	5,284	(17)	5,449	(46)	5,493	(39)	5,561	(62)
Total indirect tax	35,233	23	37,092	23	39,325	207	41,522	328	43,272	361	45,041	311
Total tax	88,262	(186)	93,644	(186)	98,757	215	105,102	470	110,613	669	116,502	812
Total tax (% of GDP)	30.6%	31.2%	31.2%	31.1%	31.2%	0.1%	31.5%	0.2%	31.6%	0.2%	31.8%	0.2%
less Core Crown tax eliminations												
Core Crown income tax	240	675	675	675	877	877	975	975	1,094	1,094	1,230	1,230
GST on Crown expenses and departmental outputs	7,296	7,637	7,637	7,637	8,169	8,169	8,587	8,587	8,905	8,905	9,238	9,238
Crown ESCT	456	451	451	451	424	424	409	409	405	405	400	400
Crown AIL	46	45	45	45	42	42	42	42	37	37	39	39
Core Crown taxation	80,224	(186)	84,836	(186)	89,245	215	95,089	470	100,172	669	105,595	812
Core Crown tax (% of GDP)	27.8%	28.2%	28.3%	28.1%	28.2%	0.1%	28.5%	0.2%	28.6%	0.2%	28.8%	0.2%
less Total Crown tax eliminations												
Income tax from SOEs and CEs	517	578	578	578	586	586	657	657	703	703	723	723
Other Crown GST	..	..	..	..	..	..	..	..	..	..	..	..
ESCT from SOEs and CEs	40	40	40	40	41	41	43	43	43	43	41	41
Lottery duty	71	75	75	75	77	77	79	79	83	83	84	84
Total Crown taxation	79,596	(186)	84,143	(186)	88,541	215	94,310	470	99,340	669	104,747	812
Total Crown tax (% of GDP)	27.6%	28.0%	28.1%	28.1%	27.9%	0.0%	28.2%	0.1%	28.4%	0.2%	28.6%	0.2%
Nominal expenditure GDP	288,812	299,713	299,713	299,713	316,957	316,957	334,009	334,009	350,210	350,210	366,568	366,568

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

	2017/18 Actual	2018/19 Estimated Actual		2019/20 Forecast		2020/21 Forecast		2021/22 Forecast		2022/23 Forecast			
		Treasury	IRD	Difference	Treasury	IRD	Difference	Treasury	IRD	Difference	Treasury	IRD	Difference
Direct tax													
Individuals													
Source deductions	30,967	32,984	33,257	(273)	34,995	35,324	(329)	37,198	37,498	(300)	41,787	41,991	(204)
Other persons tax	7,206	7,217	7,234	(17)	7,092	7,242	(150)	7,472	7,536	(64)	8,343	8,169	174
Refunds	(2,532)	(2,535)	(2,441)	(94)	(2,308)	(2,345)	(37)	(2,226)	(2,125)	(101)	(2,454)	(2,225)	(229)
Fringe benefit tax	542	558	570	(12)	585	580	5	616	595	21	677	625	52
Subtotal: Individuals	36,183	38,224	38,620	(396)	40,364	40,912	(548)	43,060	43,504	(444)	48,353	48,560	(207)
Company tax (net)	13,810	13,474	13,456	17	15,565	15,377	188	16,208	15,957	251	17,076	17,470	(319)
Withholding taxes on:													
Resident interest income	1,576	1,613	1,619	(6)	1,675	1,649	26	1,910	1,800	110	2,348	2,570	133
Non-resident income	591	639	630	9	648	670	(22)	676	710	(34)	720	755	(29)
Foreign-source dividends	..	..	..	..	..	..	..	..	..	..	..	..	..
Resident dividend income	731	743	765	(22)	796	800	(4)	849	840	9	892	930	..
Subtotal: Withholding tax	2,898	2,995	3,014	(19)	3,119	3,119	(340)	3,435	3,350	85	3,960	4,280	106
Total direct tax	52,891	54,692	55,090	(398)	59,048	59,388	(340)	62,703	62,811	(108)	66,671	70,310	218
Indirect tax													
GST (net)	27,787	29,287	29,220	67	31,214	31,004	210	33,169	32,739	430	34,854	36,005	520
Excise duties on:													
Alcoholic drinks	694	725	722	3	748	754	(6)	771	775	(4)	795	815	4
Tobacco products	411	477	497	(20)	430	417	13	430	422	8	419	400	18
Petroleum fuels	1,076	1,184	1,134	50	1,332	1,292	40	1,393	1,413	(20)	1,402	1,472	(70)
Subtotal: Excise duties	2,181	2,386	2,353	33	2,510	2,463	47	2,594	2,610	(16)	2,616	2,678	(104)
Other indirect tax													
Customs duty	2,764	2,772	2,809	(37)	2,830	2,810	20	2,866	2,924	(58)	2,846	2,965	(108)
Road user charges	1,549	1,655	1,691	(36)	1,799	1,822	(23)	1,904	1,899	5	1,972	1,910	48
Gaming duties	303	302	306	(4)	307	299	8	309	294	15	311	293	22
Motor vehicle fees	227	236	232	4	228	239	(11)	232	246	(14)	237	252	(15)
Exhaustible resource levy	26	27	24	3	25	22	3	25	22	3	24	21	3
Approved issuer levy, cheque duty & other	100	74	79	(5)	106	109	(3)	108	110	(2)	104	113	(10)
Subtotal: Other indirect tax	4,969	5,066	5,141	(75)	5,295	5,301	(6)	5,444	5,495	(51)	5,495	5,623	(63)
Total indirect tax	34,937	36,739	36,714	25	39,019	38,768	251	41,207	40,844	363	42,965	44,380	353
Total tax	87,828	91,431	91,804	(373)	98,067	98,156	(89)	103,910	103,655	255	109,636	114,690	571
Total tax (% of GDP)	30.4%	30.5%	30.6%	-0.1%	30.9%	31.0%	-0.1%	31.1%	31.0%	0.1%	31.3%	31.4%	0.1%
less Core Crown tax eliminations													
Core Crown income tax	801	61	61		1,174	1,174		955	955		1,070	1,203	
GST on Crown expenses and departmental outputs	7,245	7,688	7,688		8,166	8,166		8,584	8,584		8,905	9,239	
Crown ESCT	461	460	460		433	433		418	418		414	408	
Crown AIL	46	46	46		41	41		43	43		36	40	
Core Crown taxation	79,275	83,176	83,549	(373)	88,253	88,342	(89)	93,910	93,655	255	99,211	103,800	571
Core Crown tax (% of GDP)	27.4%	27.8%	27.9%	-0.1%	27.8%	27.9%	-0.1%	28.1%	28.0%	0.1%	28.3%	28.5%	0.2%
less Total Crown tax eliminations													
Income tax from SOEs and CEs	579	480	480		574	574		638	638		677	716	
Other Crown GST	30	(24)	(24)		10	10		26	26		19	22	
ESCT from SOEs and CEs	29	23	23		25	25		26	26		25	27	
Lottery duty	71	75	75		77	77		79	79		83	84	
Total Crown taxation	78,566	82,622	82,995	(373)	87,567	87,656	(89)	93,141	92,886	255	98,407	102,951	571
Total Crown tax (% of GDP)	27.2%	27.6%	27.7%	-0.1%	27.6%	27.7%	-0.1%	27.9%	27.8%	0.1%	28.1%	28.2%	0.1%

Tax Policy Changes

This section details the material changes to forecast tax revenue since the *Half Year Update* as a result of revenue and spending initiatives. Table 10 shows a breakdown of the changes and the supplementary text describes each initiative.

Table 10 – Estimated tax effects of initiatives announced since the *Half Year Update*

Year ending 30 June \$ millions	2019 Forecast	2020 Forecast	2021 Forecast	2022 Forecast	2023 Forecast	Total 5 years
Research and Development tax incentive						
Transferred from Vote Business, Science and Innovation	(70)	(280)	(320)	(350)	(350)	(1,370)
Forecast adjustment	30	122	65	(104)	(104)	9
<i>Net change in forecast tax revenue</i>	<i>(40)</i>	<i>(158)</i>	<i>(255)</i>	<i>(454)</i>	<i>(454)</i>	<i>(1,361)</i>
Incomes for people receiving benefits	..	4	18	28	36	86
GST and telecommunication services	..	..	20	26	26	72
Repeal of totalisator duty	..	(5)	(9)	(14)	(15)	(43)
Other	..	(7)	(9)	(13)	(16)	(46)
Total change	(40)	(166)	(235)	(427)	(424)	(1,292)

Source: The Treasury

Research and Development tax incentive

The Research and Development tax incentive, announced in Budget 2018, is available to eligible businesses from the beginning of the 2019/20 income year and will reduce income tax revenue. The administration of the scheme has been transferred from the Ministry of Business, Innovation and Employment (MBIE) to Inland Revenue.

In addition, MBIE has updated the incentive's forecast foregone revenue, based on the 2018 R&D Survey, as shown in table 10.

Incomes for people receiving benefits

Consequential PAYE effects of changes to welfare benefits announced in the *Budget Update*.

GST and telecommunication services

With effect from 1 October 2020, telecommunications service providers will be required to charge GST on roaming services supplied to New Zealand-resident consumers.

Repeal of totalisator duty

Totalisator duty is to be phased out over three years, starting from 1 July 2019.

Other

A number of measures, each of which has an expected revenue effect of less than \$10 million per annum.

Additional Fiscal Indicators

The Treasury calculates two summary fiscal indicators: the cyclically-adjusted balance (CAB) and the fiscal impulse.

- The CAB adjusts the operating balance before gains and losses (OBEGAL) for the cyclical position of the economy. The CAB is subject to uncertainty because it uses estimated variables and is sensitive to new information, particularly regarding the output gap.
- The fiscal impulse indicator uses the change in a cash-based version of the fiscal balance to estimate the marginal contribution of discretionary fiscal policy to aggregate demand.

Further information on the methodology, interpretation and limitations behind the indicators can be found in Treasury Working Papers 02/30 and 10/08.¹

This section discusses the Treasury's central estimates of the CAB and fiscal impulse. The next section discusses sensitivity analysis. Detailed tables of data can be found at the end of the Additional Fiscal Indicators section.

The Treasury is currently reviewing these indicators to ensure they remain useful to users and fit for purpose. Any changes will be signalled prior to their publication.

Central Estimates

Cyclically-adjusted balance

The CAB is essentially an estimate of what OBEGAL would be without the effect of cyclical fluctuations in revenues and expenses. When the economy is operating above its potential level (a positive output gap) tax revenues are higher and unemployment expenses are lower than they would be relative to an economy operating at potential. When the economy is operating below its potential level, the opposite is true. Adjusting OBEGAL for the economic cycle therefore shows the underlying, structural fiscal position.

Significant “one-off” impacts on expenses from the Canterbury and Kaikōura earthquakes are removed from the central estimates of the CAB to give a better indication of underlying fiscal performance.

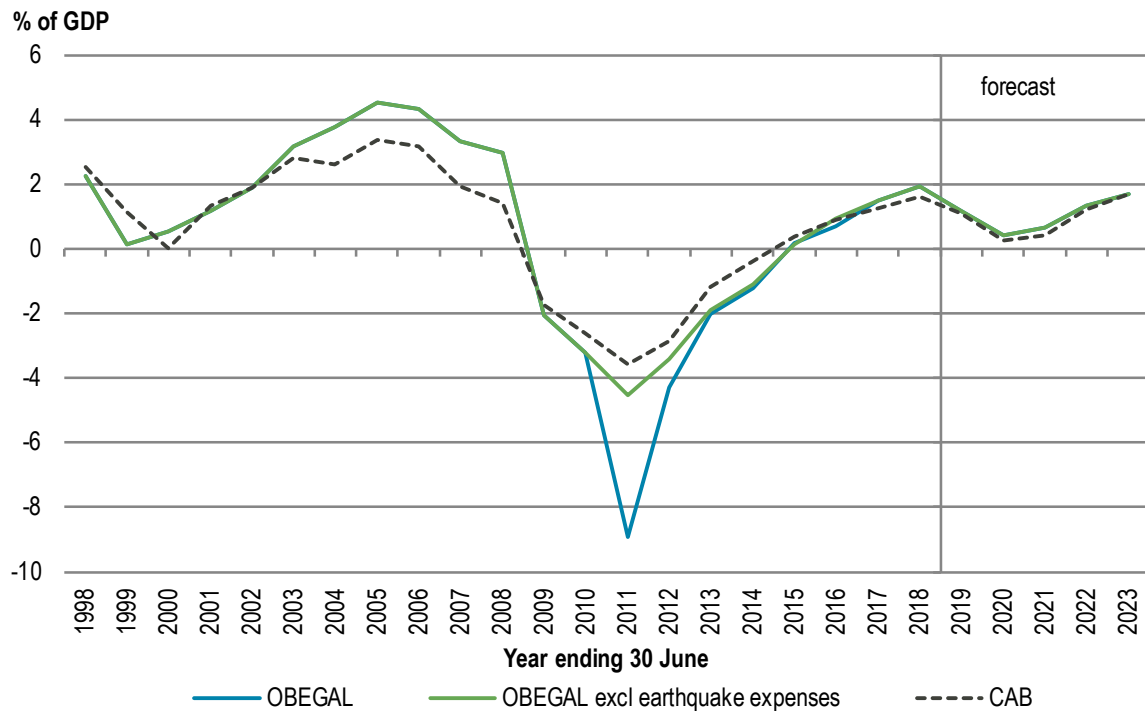
Figure 1 shows OBEGAL and the CAB. The CAB is in surplus across the entire forecast period, indicating surpluses are structural – that is, they are not due to cyclical economic conditions. The CAB is forecast to be lower than OBEGAL from 2018/19 to 2021/22 reflecting an economy operating above its potential level. The economy is forecast to be operating approximately at its potential level by the end of the forecast period, at which point the CAB is forecast to be broadly equal to OBEGAL.

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

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

Cyclically-adjusted balances are, on average, lower than those forecast at the *Half Year Update*. The CAB is forecast to decrease from 1.1% of GDP in 2018/19 to 0.3% of GDP in 2019/20, and then increase to 1.7% of GDP in 2022/23. At the *Half Year Update* the CAB was forecast to increase from 0.5% of GDP in 2018/19 to 2.2% of GDP in 2022/23.

Figure 1 – Cyclically-adjusted balance



Source: The Treasury

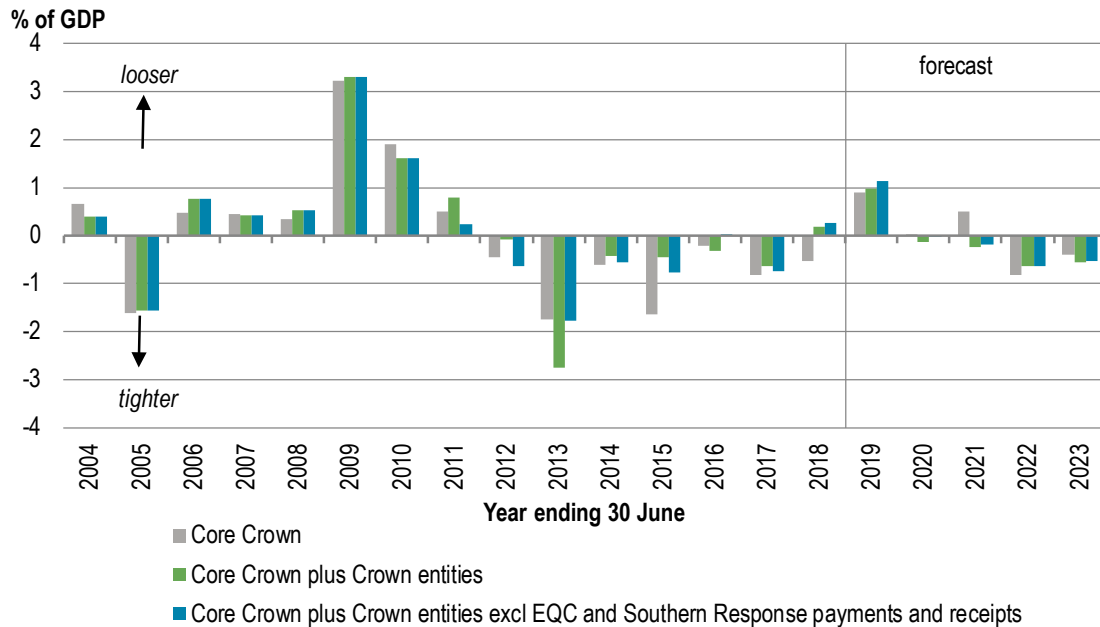
Fiscal impulse

The fiscal impulse is an estimate of discretionary changes (ie, excluding cyclical factors) in the fiscal position that have an impact on aggregate demand pressures 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). A positive fiscal impulse represents an expansionary fiscal stance, compared to the previous year, and is consistent with a decrease in the fiscal balance (as % of GDP). Capital expenditure on defence, KiwiSaver subsidies and Deposit Guarantee Scheme payments are excluded from the measure since these are expected to have a limited direct impact on aggregate demand pressures. Purchases and sales of investments are also excluded as they represent a transfer of resources.

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

It is worth noting that the fiscal impulse indicators do not take account of the composition of fiscal policy changes or how a change in fiscal policy will be transmitted through the economy. Research by the Treasury using time series statistical analysis indicates that spending and taxes have different effects on New Zealand GDP.² Therefore the fiscal impulse indicator is only an imprecise guide to the impact of fiscal policy on the economy.

Figure 2 – Estimates of the fiscal impulse



Source: The Treasury

Figure 2 shows that changes in fiscal policy are expected to have an expansionary impact on aggregate demand in 2018/19, and then to have a broadly neutral impact on aggregate demand in 2019/20. For the remainder of the forecast period, changes in fiscal policy are estimated to have a relatively contractionary impact on aggregate demand. This is driven by rising tax receipts as percent of GDP across the forecast period and falling expenses as percent of GDP from 2021/22.

Compared to the *Half Year Update*, from 2019/20 the fiscal impulse is forecast to be less contractionary, on average. The most significant change since the *Half Year Update* is in 2018/19. The 2018/19 impulse is now estimated to be 1.1% of GDP compared with 2.2% forecast at the *Half Year Update*. This reflects changes in the expected timing of operating and capital spending. Some operating spending previously expected to take place in 2018/19 is now expected in 2019/20. Changes in the timing of spending and higher allowances announced at Budget 2019 see a broadly neutral impulse in 2019/20 compared with a -0.9% of GDP impulse forecast at the *Half Year Update*. Compared to the *Half Year Update*, government operating spending is cumulatively around \$5.4 billion higher across the forecast period, and tax receipts are \$1.2 billion higher.

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, January 2013 <https://treasury.govt.nz/publications/wp/wp-13-02>
 Hamer-Adams and Wong (2018) "Quantifying fiscal multipliers in New Zealand: The evidence from SVAR models" Reserve Bank of New Zealand Analytical Note AN2018/05, June 2018 <https://www.rbnz.govt.nz/research-and-publications/analytical-notes/2018/an2018-05>

Sensitivity analysis

There is uncertainty around the estimates of the summary indicators. The two broad sources of uncertainty are:

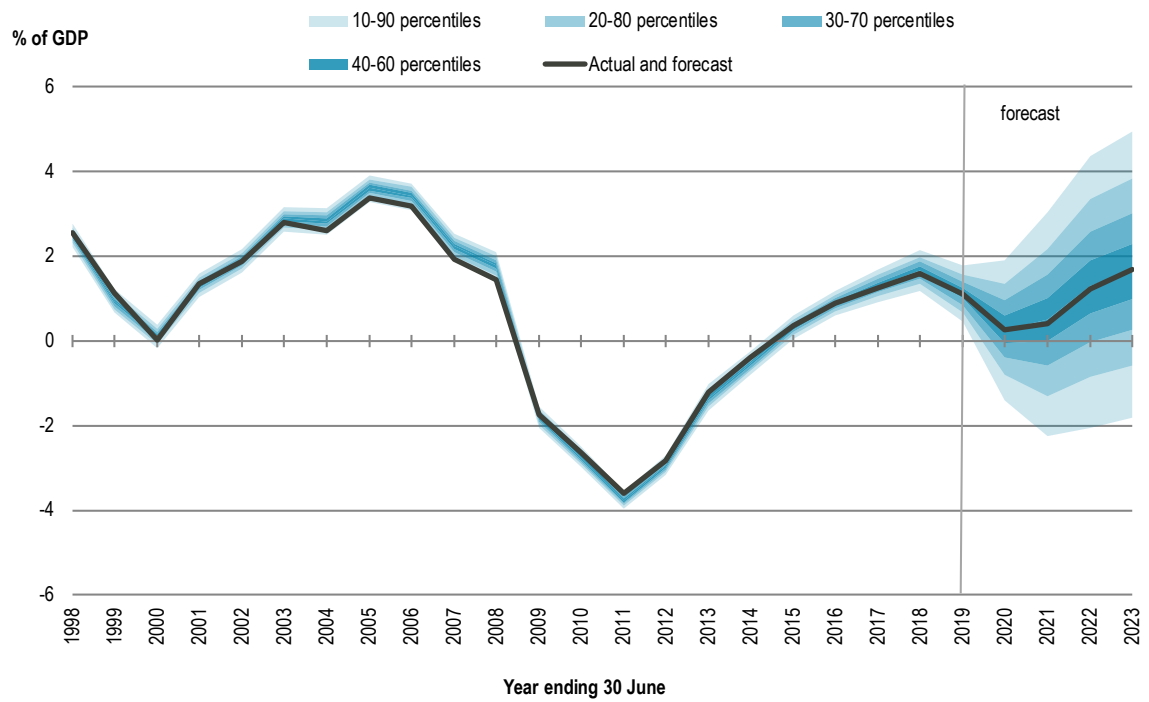
- estimation uncertainty of the key model parameters (ie, the output gap and the elasticity of different tax revenues with respect to the output gap), and
- forecast uncertainty relating to future fiscal and economic developments.

To illustrate this uncertainty, sensitivity analysis is performed on estimates of the CAB and core Crown fiscal impulse by using alternative output gap estimates from the Reserve Bank of New Zealand, IMF and OECD. Alternative values for the elasticity of different tax revenues with respect to the output gap that are half and twice the magnitude of the baseline estimates are also used. The range of alternative estimates is plotted in Figures 4-6, with data reported in Tables 14-16. These estimates of the fiscal impulse and the CAB show a similar picture to the Treasury's central estimate across the forecast period.

An alternative means of illustrating uncertainty is to show a probability distribution around the central forecast. A probability distribution requires making some 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 presents a fan chart of the CAB 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, although the central estimate of the CAB indicates that the Government is running a structural surplus in each year of the forecast period, there is uncertainty around these estimates.

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

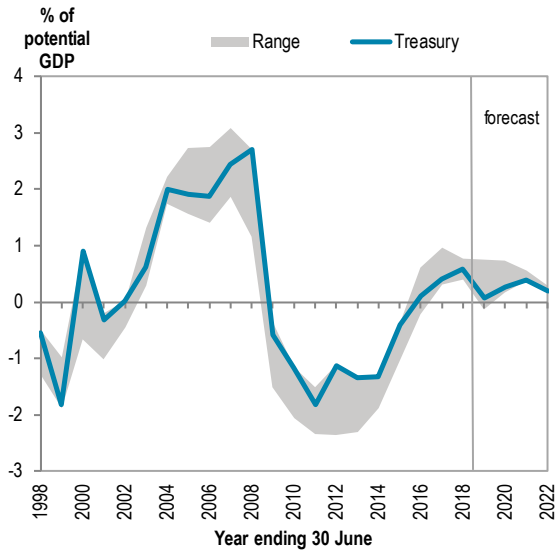
Figure 3 – Fan chart for the cyclically-adjusted balance



Source: The Treasury

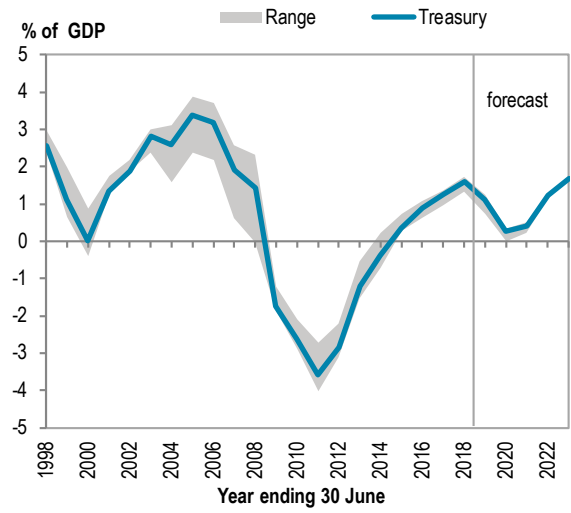
Note: the bands represent sequential deciles such that the difference between the 10th and 90th percentiles represents an 80% confidence interval.

Figure 4 – Output gap range



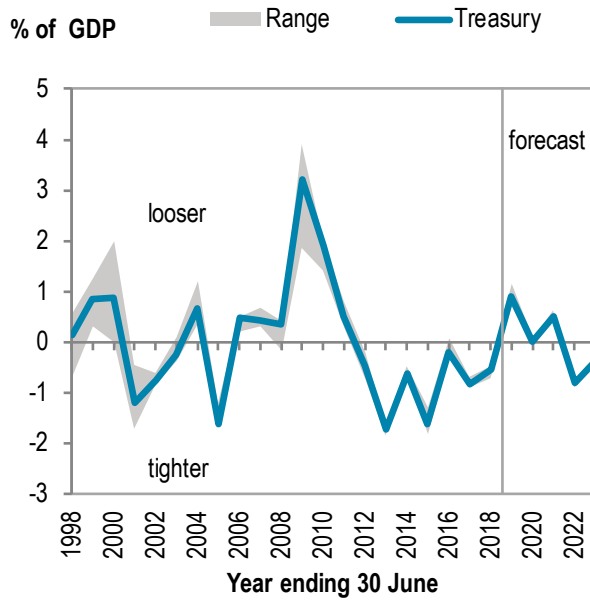
Source: The Treasury

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 terms of trade effect on the budget balance following the methodology outlined in Treasury Working Paper 10/08.⁴

Estimating the terms of trade effect requires calculating the approximate amount of tax revenue that is attributable to deviations in the terms of trade from its specified structural, or long-run, level.

The terms of trade are estimated to remain at a relatively high level compared to historical averages. The terms of trade for the March 2019 quarter is estimated to be approximately 19% higher than the 30-year average and is forecast to be approximately 22% higher by the end of the forecast period. Adjusting the CAB to use historical averages of the terms of trade shows how the underlying fiscal position may vary under different assumptions (ie, scenarios) than the central forecast estimates. The terms of trade sensitivity analysis is used to help make judgements about the fiscal position from a medium-term perspective, without compromising the forecasts' role of presenting the most likely near-term outcome.

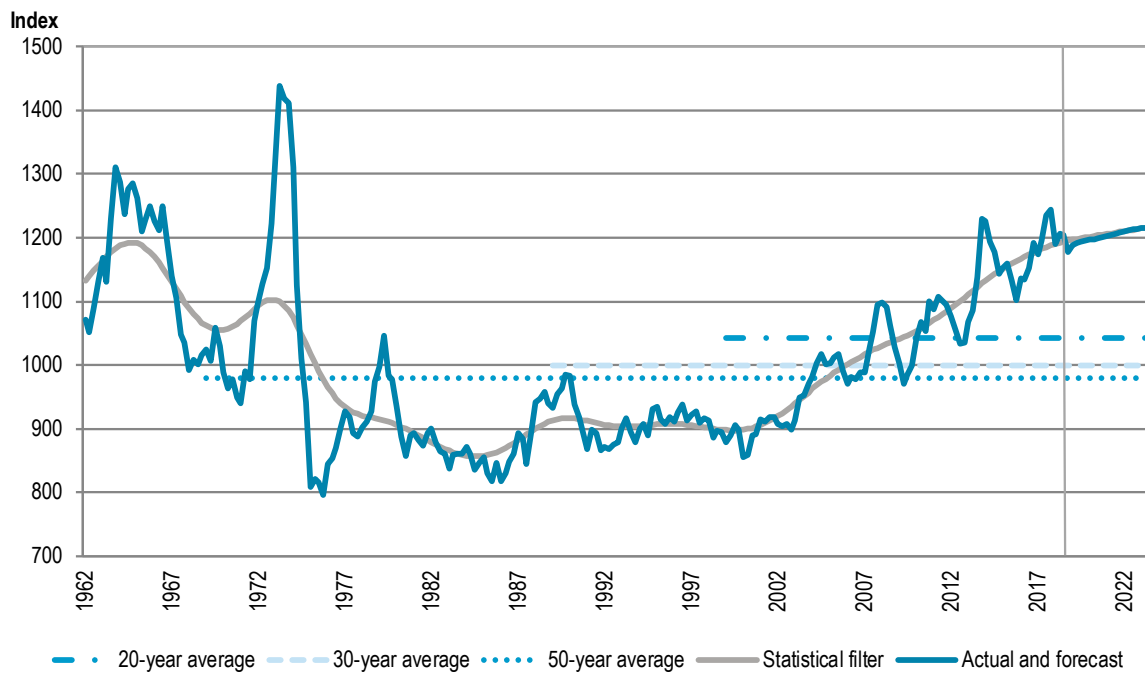
Figure 7 shows New Zealand's terms of trade with historical average levels (50-, 30- and 20-year averages) and a time-varying trend using a statistical filter.⁵ The historical average and trend estimates are used as estimates of the structural level of the terms of trade. Using the statistical filter runs the risk of interpreting long cycles as structural shifts in real time, whereas using an 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. Using the 30-year average suggests a structural budget deficit of 1.6% of GDP for the 2018/19 fiscal year, relative to the 1.1% of GDP structural surplus estimated using the central terms of trade estimates. Alternatively, a terms of trade adjustment using a statistical filter, which smooths out fluctuations around a time-varying trend, suggests a structural surplus of 1.2% of GDP in 2018/19.

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.

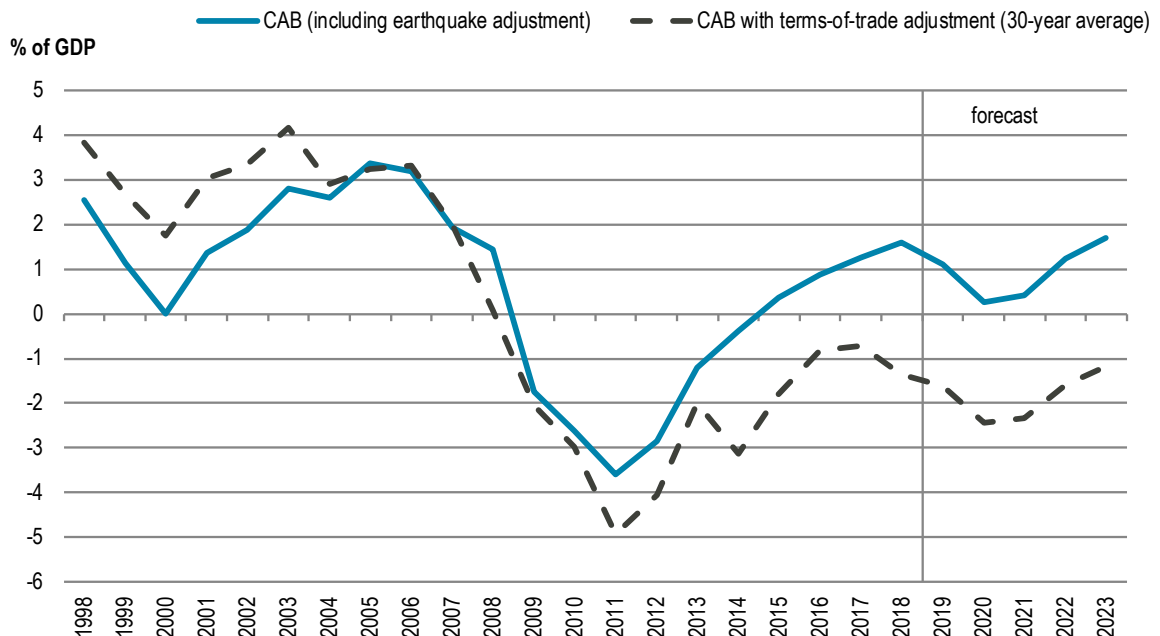
Figure 7 – Terms of trade with historical average and time-varying trend



Sources: Stats NZ, 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 11 – 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 net payouts
1998	-0.5	2.2	2.2	2.5	0.1	-	-
1999	-1.8	0.1	0.1	1.1	0.8	-	-
2000	0.9	0.5	0.5	0.0	0.9	-	-
2001	-0.3	1.2	1.2	1.3	-1.2	-	-
2002	0.0	1.9	1.9	1.9	-0.8	-	-
2003	0.6	3.2	3.2	2.8	-0.2	-0.6	-0.6
2004	2.0	3.8	3.8	2.6	0.7	0.4	0.4
2005	1.9	4.5	4.5	3.4	-1.6	-1.6	-1.6
2006	1.9	4.3	4.3	3.2	0.5	0.8	0.8
2007	2.4	3.3	3.3	1.9	0.4	0.4	0.4
2008	2.7	3.0	3.0	1.4	0.3	0.5	0.5
2009	-0.6	-2.1	-2.1	-1.7	3.2	3.3	3.3
2010	-1.2	-3.2	-3.2	-2.6	1.9	1.6	1.6
2011	-1.8	-8.9	-4.5	-3.6	0.5	0.2	0.2
2012	-1.1	-4.3	-3.4	-2.8	-0.5	-0.6	-0.6
2013	-1.3	-2.0	-1.9	-1.2	-1.7	-1.8	-1.8
2014	-1.3	-1.2	-1.1	-0.4	-0.6	-0.6	-0.6
2015	-0.4	0.2	0.1	0.4	-1.6	-0.8	-0.8
2016	0.1	0.7	0.9	0.9	-0.2	0.0	0.0
2017	0.4	1.5	1.5	1.3	-0.8	-0.7	-0.7
2018	0.6	1.9	1.9	1.6	-0.5	0.3	0.3
2019	0.1	1.2	1.2	1.1	0.9	1.1	1.1
2020	0.3	0.4	0.4	0.3	0.0	0.0	0.0
2021	0.4	0.6	0.6	0.4	0.5	-0.2	-0.2
2022	0.2	1.3	1.3	1.2	-0.8	-0.6	-0.6
2023	0.0	1.7	1.7	1.7	-0.4	-0.5	-0.5

Source: The Treasury

Table 12 – Sources for alternative output gaps

Institution	Source	Publication date
The Treasury	Budget Economic and Fiscal Update	May 2019
RBNZ	Monetary Policy Statement	May 2019
IMF	World Economic Outlook	April 2019
OECD	Global Economic Outlook	November 2018

Table 13 – Elasticity values used in sensitivity analysis

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

Source: The Treasury

Table 14 – Output gap estimates used in sensitivity analysis (% of potential GDP)

June year	The Treasury	RBNZ	IMF	OECD
1998	-0.5	-	-1.3	-0.5
1999	-1.8	-	-1.9	-1.0
2000	0.9	-	-0.7	0.0
2001	-0.3	-1.0	-0.4	-0.2
2002	0.0	-0.5	-0.1	0.0
2003	0.6	0.3	0.9	1.3
2004	2.0	1.7	2.0	2.2
2005	1.9	1.6	2.7	2.2
2006	1.9	1.4	2.8	1.6
2007	2.4	1.9	3.1	2.0
2008	2.7	1.9	2.3	1.2
2009	-0.6	-1.5	-0.3	-0.9
2010	-1.2	-1.8	-2.1	-1.5
2011	-1.8	-2.3	-2.3	-1.5
2012	-1.1	-1.4	-2.4	-1.4
2013	-1.3	-1.4	-2.3	-1.3
2014	-1.3	-1.4	-1.9	-1.3
2015	-0.4	-0.5	-1.0	-0.5
2016	0.1	0.0	-0.2	0.6
2017	0.4	0.3	0.4	1.0
2018	0.6	0.4	0.6	0.8
2019	0.1	-0.1	0.5	0.7
2020	0.3	0.2	0.4	0.7
2021	0.4	0.6	-	-
2022	0.2	0.3	-	-
2023	0.0	-	-	-

Sources: The Treasury, RBNZ, IMF, OECD

Table 15 – 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
1998	2.2	2.5	-	3.0	2.5	2.4	2.8
1999	0.1	1.1	-	1.2	0.7	0.7	2.0
2000	0.5	0.0	-	0.9	0.5	0.2	-0.4
2001	1.2	1.3	1.7	1.4	1.3	1.3	1.5
2002	1.9	1.9	2.2	1.9	1.9	1.9	1.9
2003	3.2	2.8	3.0	2.6	2.4	3.0	2.5
2004	3.8	2.6	2.7	2.6	2.5	3.1	1.6
2005	4.5	3.4	3.6	2.9	3.2	3.9	2.4
2006	4.3	3.2	3.5	2.7	3.3	3.7	2.2
2007	3.3	1.9	2.2	1.5	2.2	2.6	0.6
2008	3.0	1.4	1.9	1.6	2.3	2.2	0.0
2009	-2.1	-1.7	-1.2	-1.9	-1.5	-1.9	-1.4
2010	-3.2	-2.6	-2.3	-2.2	-2.5	-2.9	-2.1
2011	-8.9	-3.6	-3.3	-3.3	-3.7	-4.0	-2.7
2012	-4.3	-2.8	-2.7	-2.2	-2.7	-3.1	-2.3
2013	-2.0	-1.2	-1.1	-0.7	-1.2	-1.5	-0.5
2014	-1.2	-0.4	-0.4	-0.1	-0.4	-0.7	0.2
2015	0.2	0.4	0.4	0.7	0.4	0.3	0.6
2016	0.7	0.9	0.9	1.1	0.6	0.9	0.8
2017	1.5	1.3	1.3	1.3	1.0	1.4	1.1
2018	1.9	1.6	1.7	1.6	1.5	1.7	1.3
2019	1.2	1.1	1.2	0.9	0.7	1.1	1.1
2020	0.4	0.3	0.3	0.2	0.0	0.3	0.1
2021	0.6	0.4	0.3	-	-	0.5	0.2
2022	1.3	1.2	1.2	-	-	1.3	1.1
2023	1.7	1.7	-	-	-	1.7	1.7

Source: The Treasury

Table 16 – 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
1998	0.1	-	0.3	0.5	0.6	-0.7
1999	0.8	-	1.2	1.2	1.1	0.3
2000	0.9	-	0.1	0.0	0.3	2.0
2001	-1.2	-	-0.4	-0.7	-1.0	-1.7
2002	-0.8	-0.7	-0.8	-0.8	-0.8	-0.6
2003	-0.2	-0.2	0.0	0.1	-0.4	0.0
2004	0.7	0.7	0.5	0.4	0.4	1.2
2005	-1.6	-1.7	-1.2	-1.6	-1.6	-1.6
2006	0.5	0.4	0.5	0.2	0.5	0.5
2007	0.4	0.4	0.3	0.4	0.3	0.7
2008	0.3	0.2	-0.1	-0.2	0.3	0.4
2009	3.2	3.2	3.5	3.8	3.9	1.9
2010	1.9	2.0	1.4	1.9	2.0	1.7
2011	0.5	0.6	0.7	0.8	0.6	0.3
2012	-0.5	-0.4	-0.7	-0.7	-0.6	-0.2
2013	-1.7	-1.7	-1.6	-1.6	-1.7	-1.8
2014	-0.6	-0.6	-0.5	-0.6	-0.6	-0.6
2015	-1.6	-1.6	-1.7	-1.7	-1.8	-1.3
2016	-0.2	-0.2	-0.1	0.1	-0.3	0.0
2017	-0.8	-0.8	-0.7	-0.8	-0.9	-0.7
2018	-0.5	-0.6	-0.5	-0.7	-0.6	-0.5
2019	0.9	0.9	1.1	1.1	1.0	0.7
2020	0.0	0.1	-	-0.1	0.0	0.1
2021	0.5	0.6	-	-	0.5	0.6
2022	-0.8	-0.8	-	-	-0.8	-0.9
2023	-0.4	-	-	-	-0.3	-0.5

Source: The Treasury

Table 17 – 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
1998	2.5	1.0	1.3	1.8	-0.1	3.6	3.8	4.4	2.5
1999	1.1	1.3	1.5	2.1	0.1	2.4	2.7	3.2	1.3
2000	0.0	1.5	1.7	2.3	0.3	1.5	1.7	2.3	0.3
2001	1.3	1.4	1.7	2.3	0.1	2.7	3.0	3.7	1.4
2002	1.9	1.1	1.4	2.1	0.1	3.0	3.3	4.0	2.0
2003	2.8	1.1	1.3	2.0	0.4	3.9	4.1	4.8	3.2
2004	2.6	0.0	0.3	0.9	-0.3	2.6	2.9	3.5	2.3
2005	3.4	-0.4	-0.1	0.5	-0.4	2.9	3.2	3.9	3.0
2006	3.2	-0.2	0.1	0.8	0.1	3.0	3.3	4.0	3.3
2007	1.9	-0.2	0.1	0.7	0.3	1.7	2.0	2.6	2.2
2008	1.4	-1.7	-1.3	-0.6	-0.8	-0.2	0.1	0.8	0.6
2009	-1.7	-0.6	-0.3	0.4	0.4	-2.4	-2.0	-1.3	-1.4
2010	-2.6	-0.6	-0.4	0.2	0.4	-3.3	-3.0	-2.4	-2.3
2011	-3.6	-1.6	-1.3	-0.6	-0.3	-5.2	-4.9	-4.2	-3.9
2012	-2.8	-1.5	-1.2	-0.5	0.1	-4.3	-4.0	-3.4	-2.8
2013	-1.2	-1.1	-0.8	-0.2	0.7	-2.3	-2.0	-1.4	-0.5
2014	-0.4	-3.1	-2.7	-2.1	-0.8	-3.5	-3.1	-2.4	-1.2
2015	0.4	-2.5	-2.2	-1.5	-0.1	-2.1	-1.8	-1.1	0.3
2016	0.9	-2.0	-1.7	-1.1	0.4	-1.1	-0.8	-0.2	1.3
2017	1.3	-2.6	-2.3	-1.7	0.0	-1.0	-0.7	-0.1	1.6
2018	1.6	-3.3	-2.9	-2.3	-0.3	-1.7	-1.3	-0.7	1.3
2019	1.1	-3.1	-2.7	-2.0	0.1	-2.0	-1.6	-0.9	1.2
2020	0.3	-3.0	-2.7	-2.0	0.1	-2.7	-2.4	-1.7	0.3
2021	0.4	-3.1	-2.7	-2.1	0.0	-2.6	-2.3	-1.6	0.5
2022	1.2	-3.1	-2.8	-2.1	0.0	-1.9	-1.6	-0.9	1.2
2023	1.7	-3.2	-2.9	-2.2	0.0	-1.5	-1.2	-0.5	1.7

Source: The Treasury

Government Finance Statistics for Central Government

The following section outlines some of the key fiscal indicators under the Government Finance Statistics (GFS) framework.

GFS is a fiscal reporting framework developed by the International Monetary Fund (IMF) and is specifically designed for government reporting.

The main purpose for having a common government reporting framework is to more easily enable cross-country comparisons of fiscal data and assessment of fiscal policy (eg, as in the case of the IMF's Article IV consultation with New Zealand).

It is important to note that even though the GFS framework provides a consistent presentation format there are underlying differences between countries in measurement and recognition. These differences mean that it can be difficult to make meaningful cross-country comparisons.

Further information on GFS can be found on the IMF's website⁶.

The major differences between GFS for Central Government and the Forecast Financial Statements presented in the *Budget Update*, which were prepared on a Generally Accepted Accounting Practice (GAAP) basis, are:

Coverage	The Central Government entity is defined here as the consolidation of core Crown (excluding Reserve Bank) and Crown entities, as opposed to the emphasis on the total Crown in the <i>Budget Update</i> document. As a result, the Government's interest in the Reserve Bank and State-owned enterprises is equity accounted rather than consolidated line-by-line.
Other economic flows	The GFS operating balance excludes valuation changes on assets and liabilities, which are instead reported as other economic flows.
Transactions	There are some differences in the classification of transactions (eg, some levies move to taxation revenue).

⁶ <http://www.imf.org/external/np/sta/gfsm/index.htm>

New Zealand's GFS Key Indicators

To enable cross-country comparisons over the forecast period the Treasury has prepared a series of summary fiscal indicators under the GFS framework. These fiscal indicators have been prepared by applying adjustments to the key fiscal indicators produced under a GAAP basis. The Treasury has reviewed its approach to preparing GFS forecast information and the information presented in this document. The review has resulted in a more simplified approach to calculating the GFS indicators. The approach now focuses on using the GAAP indicators as a starting point and adjusting for significant known differences between the two frameworks to derive the GFS indicators. For cross-country comparisons over a forecast horizon, we believe it is more meaningful to focus on summary indicators rather the detailed line items, particularly given the Treasury does not collect source data under a GFS framework.

The GFS indicators presented in this section are indicative. They provide a high-level view of trends of GFS indicators over the forecast period. Statistics New Zealand release an official GFS series for actuals, which will also include local government.

Table 18 outlines some of the key indicators for the central government under a GFS presentation.

Table 18 – Summary indicators for central government

	2019 Forecast	2020 Forecast	2021 Forecast	2022 Forecast	2023 Forecast
\$million					
Net operating balance	6,455	3,864	4,488	7,087	8,544
Fiscal Balance (Net lending/borrowing)	1,879	(1,327)	872	3,380	5,636
Cash surplus/(deficit)	(937)	(2,171)	(632)	2,519	4,176
Net worth	129,999	134,730	140,747	149,833	160,825
Net financial worth	13,062	13,522	11,121	5,742	(2,342)
%GDP					
Net operating balance	2.2	1.2	1.3	2.0	2.3
Fiscal Balance (Net lending/borrowing)	0.6	(0.4)	0.3	1.0	1.5
Cash surplus/(deficit)	(0.3)	(0.7)	(0.2)	0.7	1.1
Net worth	43.4	42.5	42.1	42.8	43.9
Net financial worth	4.4	4.3	3.3	1.6	(0.6)

Overall, the summary indicators for central government follow a similar trend to the key indicators prepared under a GAAP basis. However, the level of the indicators are quite different.

- The net operating balance surpluses are higher as a number of GAAP expenses are reclassified as economic flows (for example impairment and write-off of financial assets).
- The cash surplus/(deficits) are smaller than the residual cash indicator as it excludes financial asset flows such as advances and also includes the net cash operating inflows from Crown entities.
- Net financial worth is very different to net core Crown debt so it is difficult to make a comparison. The GFS measure includes financial assets of the NZS Fund and ACC who manage large investment portfolios. In addition, net financial worth includes a wider coverage of liabilities than net core Crown debt.

The following tables provide details around the calculation of the summary indicators for central government.

Table	Indicator	Approach	Explanation
19	Net operating balance and fiscal balance (net lending/borrowing)	The GAAP operating balance adjusted for items classified as economic flows and different entity coverage. The GFS net operating balance then includes changes in non-financial assets to arrive at the fiscal balance.	Reflects the total change in net worth due to operating and non-financial asset transactions during an accounting period.
20	Cash surplus/(deficit)	Residual cash adjusted for different entity coverage.	The net cash flows from all operating and non-financial asset transactions.
21	Net worth	It is assumed that net worth attributable to the Crown under GAAP is the same as GFS.	The difference between the stocks of assets and liabilities. The change in net worth comprises of transactions and other economic flows during an accounting period.
22	Net financial worth	Non-financial assets (comprising of PPE, inventory and forecast for new capital spending and top-down capital adjustment) per GAAP adjusted for different entity coverage and then subtracted from net worth.	Total value of financial assets minus the total value of all liabilities.

The GFS manual (on the IMF's website) includes additional explanations on definitions for some of the terminology used in this section.

Table 19 – Calculation of net operating balances and fiscal balance (net lending/borrowing) for the years ended 30 June

	2019 Forecast \$m	2020 Forecast \$m	2021 Forecast \$m	2022 Forecast \$m	2023 Forecast \$m
Operating balance per GAAP	(284)	4,680	5,916	8,972	10,890
Remove gains/losses and net surpluses from associates and joint ventures	3,749	(3,367)	(3,785)	(4,289)	(4,744)
Operating balance before gains and losses (OBEGAL)	3,465	1,313	2,131	4,683	6,146
Remove SOE portion of OBEGAL (incl. eliminations)	273	207	181	46	90
Remove ETS expenses	537	566	562	773	738
Remove impairments and write-offs on financial assets	1,590	1,855	1,588	1,546	1,579
Tertiary institutions included on a line-by-line basis	66	78	118	141	154
Reserve Bank (equity accounted)	524	(155)	(92)	(102)	(163)
Net operating balance per GFS	6,455	3,864	4,488	7,087	8,544
Net acquisition of non-financial assets	4,576	5,191	3,616	3,707	2,908
Fiscal Balance (Net lending/borrowing)	1,879	(1,327)	872	3,380	5,636

Table 20 – Calculation of cash surplus/(deficit) as at 30 June

	2019 Forecast \$m	2020 Forecast \$m	2021 Forecast \$m	2022 Forecast \$m	2023 Forecast \$m
Residual cash per GAAP	(2,785)	(4,191)	(4,252)	(583)	1,165
Remove out advances	94	799	561	101	13
Remove investments	3,073	3,636	2,190	2,129	1,986
Contribution to NZS Fund	1,000	1,460	2,120	2,420	2,553
Add in cash flows from Crown entities	(3,565)	(3,383)	(1,125)	(1,449)	(1,395)
Remove cash flows from the Reserve Bank	255	(91)	(20)	(7)	(54)
Add in NZSF cash flows	991	(401)	(106)	(92)	(92)
Cash surplus/(deficit)	(937)	(2,171)	(632)	2,519	4,176

Table 21 – Change in Net Worth as at 30 June

	2019 Forecast \$m	2020 Forecast \$m	2021 Forecast \$m	2022 Forecast \$m	2023 Forecast \$m
Opening net worth attributable to the Crown	129,644	129,999	134,730	140,747	149,833
Net operating balance per GFS	6,455	3,864	4,488	7,087	8,544
Total other economic flows ¹	(6,739)	816	1,428	1,885	2,346
Other movements ²	639	51	101	114	102
Closing net worth attributable to the Crown	129,999	134,730	140,747	149,833	160,825

¹ Total economic flows are changes in assets and liabilities that come about from sources other than transactions

² The 2019 fiscal year includes the impacts of adoption of NZ PBE IFRS 9 totalling \$628 million

Table 22 – Calculation of Net Financial Worth
as at 30 June

	2019 Forecast \$m	2020 Forecast \$m	2021 Forecast \$m	2022 Forecast \$m	2023 Forecast \$m
Non-financial assets per GAAP	164,942	170,115	173,520	177,084	180,275
Remove SOE portion of non-financial assets	34,073	34,531	34,576	34,522	34,855
Reserve Bank (equity accounted)	163	151	139	124	109
Tertiary institutions included on a line-by-line basis	12,355	12,819	13,063	13,137	13,172
Non-financial assets per GFS	143,061	148,252	151,868	155,575	158,483
Net worth per GFS	129,999	134,730	140,747	149,833	160,825
Net financial worth per GFS	13,062	13,522	11,121	5,742	(2,342)

Accounting Policies

The forecast financial statements contained in the published *Budget Economic and Fiscal Update 2019* 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 forecast 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 forecast financial statements are the years ended 30 June 2019 to 30 June 2023.

The “2018 Actual” figures reported in the statements are the audited results reported in the Financial Statements of Government for the year ended 30 June 2018. The “2019 Previous Budget” figures are the original forecasts to 30 June 2019 as presented in the 2018 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.

The Government has adopted PBE IFRS 9 Financial Instruments from 1 July 2018 replacing PBE IPSAS 29 Financial Instruments: Recognition and Measurement. Under the transition options of PBE IFRS 9, the Government is not restating financial instrument comparatives for classification, measurement and impairment and has opted to continue to apply the hedge accounting requirements of PBE IPSAS 29. Therefore, there have been no changes to the classification and measurement when accounting for hedges.

PBE IFRS 9 does not apply to sovereign receivables, which continue to be within the scope of PBE IPSAS 23 Revenue from Non-Exchange Transactions as they do not meet the definition of a financial instrument.

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 in the notes of the forecast financial statements.

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
- Christ Church Cathedral Reinstatement Trust
- Teaching Council of Aotearoa New Zealand
- Non-company organisations listed in schedule 4 of the Public Finance Act 1989
- Non-listed companies specified in schedule 4A of the Public Finance Act 1989 in which the Crown is sole or majority shareholder
- 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, Christ Church Cathedral Reinstatement Trust, Teaching Council of Aotearoa, 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 2018. 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 *Budget Economic and Fiscal Update 2019*.

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 operations includes revenue that has been earned by the Crown in exchange for the provision of outputs (products or services) to third parties.

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 forecast purposes sales and purchases of bonds and other liquid instruments are assumed to be issued at par value, with no discounts or premiums forecasted. Generally, financial assets and financial liabilities held at the forecast reference date are assumed to be held until they mature.

Forecasts of instruments that have non-market elements (eg, low or no interest rates with long maturities such as student loans or social benefit receivables) include the write-down to fair value when the loan or receivable is forecast to be issued and where applicable, the revenue from the effective interest unwind.

Interest income and interest expense are recognised using the effective interest rate method (which in most instances will equal the coupon rate for future instruments).

Forecasts use the exchange rates, interest rate curves and electricity pricing curves prevailing at the forecast reference date. As a consequence, no additional realised or unrealised foreign exchange gains or losses are forecast.

Gains and losses reflect long run rate of return assumptions appropriate to the forecast portfolio mix, after adjusting for interest income and interest expense (recognised separately using the effective interest rate method).

Derivatives

Only the value of derivatives as at the forecast reference date are forecast to be realised. No additional realised or unrealised derivative gains or losses are recognised over the forecast period. Forward margins on forward foreign exchange contracts existing at the start of the forecast period are amortised over the period of the contract on a straight line basis.

Forecasts for derivatives only include those that exist at the forecast reference date, and then only to their maturity. That is, by the end of the forecast period only those derivatives existing at the forecast reference date with a maturity beyond the end of the period should be recognised in the financial statements.

Except in limited circumstances, future derivative activity is not included in forecasts. This is because fair value forecasts of future derivatives are assumed to be zero due to forecast exchange rates being fixed at the rate at the forecast reference date, as are interest rate curves and other assumptions (eg, electricity pricing curves) affecting the value of derivatives.

Financial instruments – accounting policies

Financial Instruments are initially recognised at fair value and subsequently classified into one of two measurement categories:

- at fair value (either through the operating balance 'FVTOB' or comprehensive revenue and expense 'FVCRE')
- at amortised cost.

This classification is made by reference to the purpose and nature of the financial instrument or group of financial instruments.

Non-derivative financial assets

General principles

Financial assets are subsequently measured at amortised cost if they are held for the purpose of collecting contractual cash flows and those cash flows are solely related to payments of principal and interest. Interest, impairment losses and foreign exchange gains and losses are recognised in the statement of financial performance.

Subsequent measurement at FVCRE is for financial assets that are held for the purpose of both collecting contractual cash flows and selling assets, and those cash flows are solely related to payments of principal and interest.

Investments in equity instruments may also be designated at FVCRE where they are not held for trading. Movements in fair value are recognised in the statement of comprehensive revenue and expense and dividends in the statement of financial performance.

All other financial assets not meeting the criteria above are measured at fair value through the operating balance. Financial assets may also be designated as FVTOB if doing so eliminates or significantly reduces an accounting mismatch. Gains and 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.

Specific application

Financial assets classifications and basis of valuation, both when initially recognised and subsequently, are as follows:

Major financial asset type	Measurement classification and basis of valuation
Cash and Cash Equivalents	Amortised cost. 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. They are reported initially and subsequently at amount invested.
Trade and other receivables	Amortised cost. Initially and subsequently reported at their face value, less an allowance for expected losses.
Long-term deposits	Generally amortised cost. They are generally reported at amount invested.
Marketable securities	Generally FVTOB. Based on quoted market price or using a valuation model if there is no active market. The valuation models used generally calculate the expected cash flows under the terms of each specific contract and then discount these values back to present value.
IMF Financial Assets	Amortised cost. Initially measured at cost net of attributable transaction costs and any fair value adjustments. Subsequently measured at amortised cost, applying the effective interest method, less an allowance for expected losses.
Share investments	Generally FVTOB. Based on quoted markets prices for listed share investments. The fair value of unlisted investments is determined from the initial cost of the investment and adjusted for performance of the business and changes in equity market conditions since purchase or using a valuation model as set out in the notes to the financial statements.

Major financial asset type	Measurement classification and basis of valuation
Kiwibank mortgages	Amortised cost. Initial recognition, fair value is based on a discounted cash flow model and subsequently measured at amortised cost, applying the effective interest method, less an allowance for expected losses.
Student Loans	FVTOB. Student loans are concessionary loans and classified at FVTOB because loan repayments are contingent on the borrowers earning income. Fair value both initially and subsequently is determined by projecting forward estimated repayments from borrowers under the scheme and discounting them back at risk adjusted discount rates at the measurement date.
Other Advances	Amortised cost. Initially and subsequently reported at their face value, less an allowance for expected losses.

Regular way purchases and sales of all financial assets are recognised on their trade date rather than the settlement date.

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

Fair value measurement

Fair value is the amount that would be received when an asset is sold or paid on satisfactory settlement of a liability between knowledgeable, willing parties in an arm's length transaction. Generally, transaction price is used as the best estimate for the initial recognition of financial instruments, plus or minus directly attributable transaction costs, unless fair value is evidenced by comparison with other observable current market transactions in the same instrument (ie, without modification or repackaging) or based on a valuation technique whose variables include only data from observable markets. Where such evidence exists any profit or loss is accounted for on initial recognition.

Subsequent fair value measurements will be based using the following methods and hierarchy:

1. Quoted Market Price – Financial instruments with quoted prices for identical instruments in active markets (level 1).
2. Valuation Technique Using Observable Inputs – Financial instruments with quoted prices for similar instruments in active markets or quoted prices for identical or similar instruments in inactive markets, and financial instruments valued using models where all significant inputs are observable (level 2).
3. Valuation Technique with Significant Non-observable Inputs – Financial instruments valued using models where one or more significant inputs are not observable (level 3).

Allowances for expected losses

An expected credit loss model is used to recognise and calculate impairment losses for financial assets subsequently measured at amortised cost and debt instruments subsequently measured at FVCRE. Financial assets are to be assessed at each reporting date for any significant increase in credit risk since initial recognition.

The simplified approach to providing for expected credit losses as prescribed by PBE IFRS 9 is applied to trade and other receivables. The simplified approach involves making a provision at an amount equal to lifetime expected credit losses. The allowance for doubtful debts on trade and other receivables that are individually significant are determined on an individual basis. Those deemed to not to be individually significant are assessed on a portfolio basis based on the number of days overdue, and taking into account the historical loss experience and incorporating any external and future information.

The general model prescribed under PBE IFRS 9 is adopted for individual financial assets or groups of financial assets held at amortised cost, other than trade and other receivables. This model to be applicable only for those entities with investing and lending activities. The expected credit loss must be prepared and calculated in accordance with PBE IFRS 9.

Financial assets classified at FVTOB are not assessed for impairment as their fair value reflects the credit quality of the instruments and changes in fair value are recognised in the statement of financial performance.

Non-derivative financial liabilities

General principles

Non-derivative financial liabilities are generally subsequently measured at amortised cost. Amortisation and, in the case of monetary items, foreign exchanges gains and losses, are recognised in the statement of financial performance as is any gain or loss when the liability is derecognised.

Financial liabilities may also be designated as FVTOB if doing so eliminates or significantly reduces an accounting mismatch. Where a financial liability is held at fair value, the movement in fair value which is attributable to change in the entity's own credit quality is recognised in the statement of comprehensive revenue and expense.

Specific application

Financial liabilities are categorised using the same measurement categories above and are as follows:

Major financial liability type	Measurement classification and valuation method
Accounts payable	Amortised cost. Initially and subsequently at carrying value as being a reasonable approximation to amortised cost as they are typically short term in nature.
Government stock	Amortised cost. Carrying value based initially on observable market prices and subsequently using the effective interest rate method.
Treasury bills	Amortised cost. Initial and subsequent valuation at carrying value which approximates to amount payable on maturity.
Government retail stock	Amortised cost. Based initially on observable market price and subsequently using the effective interest rate method.
Kiwibank customer deposits	Amortised cost. Measured initially at fair value and subsequently using the effective interest rate method.
Settlement deposits with Reserve Bank	Amortised cost. These represent money deposited with the Reserve Bank by commercial banks, due to the short term nature of these deposits (ie, overnight) these are initially and subsequently recognised as amounts payable to depositors. Measured initially at fair value and subsequently using the effective interest rate method.
Other borrowings	Generally amortised cost. Measured initially at fair value and subsequently using the effective interest rate method. Some other borrowings are designated as FVTOB to significantly reduce an accounting mismatch.
Issued currency	Not designated, recognised at face value.

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 Hedge accounting section below).

Derivatives that are not designated for hedge accounting are classified as 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.

In accordance with transition arrangement for hedge accounting under PBE IFRS 9 the hedge accounting requirements of PBE IPSAS 29 continue to be applied.

(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	<p>Land and buildings are recorded at fair value and, for buildings, less depreciation accumulated since the assets were last revalued.</p> <p>Land associated with the rail network and state highways is valued using an estimate based on adjacent use, as an approximation to fair value.</p> <p>Valuations undertaken in accordance with standards issued by the New Zealand Property Institute are used where applicable.</p> <p>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.</p> <p>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.</p>
Specialist military equipment	<p>Specialist military equipment is recorded on a depreciated replacement cost basis less depreciation accumulated since the assets were last revalued.</p> <p>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.</p>
State highways	<p>State highways are recorded on a depreciated replacement cost basis less depreciation accumulated since the assets were last revalued.</p>

Class of PPE	Accounting policy
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)	9 years
Pavement (other)	50 years
Bridges	90 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

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. The 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 2018 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, Mercury NZ Limited (previously Mighty River Power), 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).