
Additional Information for Economic and Fiscal Forecasts December 2008

This document provides further details on the Economic and Fiscal Forecasts together with additional fiscal indicators. This information should be read in conjunction with the published document. The additional information includes:

- Detailed economic forecast information – these tables provide detailed breakdowns of the economic forecasts.
- Detailed tax revenue and tax receipts information – comparing Treasury’s forecasts with IRD’s forecasts.
- Additional fiscal indicators – estimates of the cyclically-adjusted balance and fiscal impulse.

Detailed Economic Forecast Information

Table 1: Real Gross Domestic Product

Chain-volume series expressed in 1995/96 prices

	Actual			Seasonally Adjusted	
	\$ million	Annual % change	Annual Average % change	\$million	Quarterly % change
2006Q1	32,266	2.9	2.9	32,507	1.2
2006Q2	31,824	1.3	2.4	32,502	0.0
2006Q3	32,272	1.3	2.0	32,661	0.5
2006Q4	34,182	2.3	2.0	32,874	0.7
2007Q1	33,034	2.4	1.8	33,272	1.2
2007Q2	32,901	3.4	2.3	33,585	0.9
2007Q3	33,379	3.4	2.9	33,791	0.6
2007Q4	35,443	3.7	3.2	34,095	0.9
2008Q1	33,752	2.2	3.2	33,989	-0.3
2008Q2	33,247	1.1	2.6	33,937	-0.2
2008Q3	33,523	0.4	1.8	33,937	0.0
2008Q4	35,385	-0.2	0.9	34,039	0.3
2009Q1	33,728	-0.1	0.3	33,965	-0.2
2009Q2	33,309	0.2	0.1	34,001	0.1
2009Q3	33,714	0.6	0.1	34,130	0.4
2009Q4	35,678	0.8	0.4	34,321	0.6
2010Q1	34,257	1.6	0.8	34,498	0.5
2010Q2	34,065	2.3	1.3	34,772	0.8
2010Q3	34,654	2.8	1.8	35,081	0.9
2010Q4	36,797	3.1	2.5	35,398	0.9
2011Q1	35,460	3.5	2.9	35,709	0.9
2011Q2	35,329	3.7	3.3	36,062	1.0
2011Q3	35,987	3.8	3.5	36,432	1.0
2011Q4	38,254	4.0	3.8	36,799	1.0
2012Q1	36,906	4.1	3.9	37,165	1.0
2012Q2	36,757	4.0	4.0	37,520	1.0
2012Q3	37,398	3.9	4.0	37,860	0.9
2012Q4	39,694	3.8	3.9	38,184	0.9
2013Q1	38,232	3.6	3.8	38,501	0.8
2013Q2	38,016	3.4	3.7	38,805	0.8

Source: Statistics New Zealand, The Treasury

Table 2: Consumer Price Index and Exchange Rates

	Consumers Price Index			Exchange rates	
	Index	Quarterly % change	Annual % change	TWI	USD
2006Q1	985	0.6	3.3	68.3	0.67
2006Q2	1000	1.5	4.0	62.8	0.62
2006Q3	1007	0.7	3.5	63.6	0.63
2006Q4	1005	-0.2	2.6	67.1	0.67
2007Q1	1010	0.5	2.5	68.8	0.70
2007Q2	1020	1.0	2.0	72.0	0.74
2007Q3	1025	0.5	1.8	71.3	0.74
2007Q4	1037	1.2	3.2	71.0	0.76
2008Q1	1044	0.7	3.4	71.9	0.79
2008Q2	1061	1.6	4.0	69.2	0.78
2008Q3	1077	1.5	5.1	65.5	0.71
2008Q4	1075	-0.2	3.6	58.6	0.58
2009Q1	1079	0.4	3.4	56.5	0.54
2009Q2	1086	0.6	2.3	54.9	0.54
2009Q3	1092	0.6	1.4	54.7	0.55
2009Q4	1098	0.6	2.2	54.5	0.55
2010Q1	1105	0.6	2.4	54.4	0.55
2010Q2	1110	0.5	2.3	54.4	0.55
2010Q3	1115	0.4	2.1	54.3	0.55
2010Q4	1120	0.4	2.0	54.3	0.55
2011Q1	1126	0.6	1.9	54.2	0.55
2011Q2	1132	0.5	1.9	54.1	0.56
2011Q3	1136	0.4	1.9	54.0	0.56
2011Q4	1142	0.5	2.0	53.9	0.56
2012Q1	1147	0.5	1.9	53.7	0.56
2012Q2	1153	0.5	1.9	53.5	0.56
2012Q3	1158	0.4	1.9	53.4	0.56
2012Q4	1163	0.5	1.9	53.2	0.56
2013Q1	1169	0.5	1.9	53.0	0.57
2013Q2	1175	0.5	1.9	52.9	0.57

Table 3: Gross Domestic Expenditure and Income

March Year	2008			2009			2010			2011			2012			2013		
	Actual	Estimate		Forecast		Forecast		Forecast		Forecast		Forecast		Forecast				
	\$ mill	%vol	%pr	\$ mill	%vol	%pr	\$ mill	%vol	%pr	\$ mill	%vol	%pr	\$ mill	%vol	%pr	\$ mill		
Consumption:																		
- Private	103,866	0.0	3.2	107,120	0.4	2.1	109,713	0.2	1.8	111,839	1.1	1.5	114,754	1.9	1.6	118,745		
- Public	33,088	3.7	3.6	35,565	4.5	2.0	37,938	4.0	2.0	40,257	3.2	2.0	42,357	2.7	2.0	44,370		
Gross Fixed Capital Formation:																		
- Residential	11,725	-21.7	1.2	9,301	-10.9	-0.3	8,260	6.9	3.1	9,103	9.9	5.8	10,589	14.3	5.8	12,805		
- Market *	26,621	7.2	-2.2	27,945	-15.0	2.2	24,273	3.2	3.5	25,938	6.9	1.9	28,258	5.8	1.5	30,347		
- Non-market **	2,515	2.1	10.1	2,836	7.9	2.6	3,141	4.4	1.9	3,340	3.6	1.5	3,510	3.2	1.4	3,674		
- Total all sectors	40,864	-2.6	0.7	40,085	-11.0	0.0	35,674	6.6	0.9	38,381	8.3	1.9	42,357	7.5	2.9	46,826		
Change in Stocks	1,384			2,041			2,418			1,710			1,368			1,576		
Gross National Expenditure	179,201	0.4	2.8	184,812	-1.8	2.3	185,744	1.9	1.5	192,187	2.9	1.5	200,835	3.5	1.8	211,517		
Exports	51,391	-1.0	14.7	58,277	-1.9	7.2	61,294	2.5	2.5	64,384	7.5	2.4	70,846	6.4	2.0	76,845		
Imports	52,946	3.2	14.9	62,717	-8.7	12.3	64,368	-0.9	2.4	65,346	3.9	2.1	69,315	4.9	2.6	74,603		
Expenditure on GDP	177,644	-0.6	2.2	180,372	0.8	0.5	182,669	3.0	1.6	191,225	3.9	1.8	202,367	3.8	1.7	213,759		
Statistical Discrepancy	-172			-166			-160			-140			-114			-88		
Gross Domestic Product	177,472			180,206			182,509			191,084			202,252			213,671		
Compensation of employees	78,242		5.9	82,859		2.2	84,670		2.7	86,914		4.6	90,900		5.9	96,257		
Operating Surplus, net:																		
- Agriculture	6,671		-7.4	6,181		-16.8	5,139		0.0	5,139		3.1	5,298		3.9	5,505		
- Other	45,399		-8.3	41,634		-1.6	40,963		9.3	44,784		9.4	49,007		5.5	51,688		
- Total all sectors	52,070		-8.2	47,814		-3.6	46,102		8.3	49,923		8.8	54,305		5.3	57,193		
Consumption of fixed capital	25,082		6.0	26,587		6.0	28,182		6.0	29,873		6.0	31,665		6.0	33,565		
Indirect Taxes	22,688		3.8	23,558		2.6	24,166		3.4	24,986		4.0	25,994		4.9	27,268		
Less subsidies	612		0.0	612		0.0	612		0.0	612		0.0	612		0.0	612		
Gross Domestic Product	177,472		1.5	180,206		1.3	182,509		4.7	191,084		5.8	202,252		5.6	213,671		

* Includes Local Government and Non-profit Organisations

** Central Government (includes Crown Entities but not SOEs)

Source: Statistics New Zealand, The Treasury

Tables 4 & 5: Labour Market Indicators

Annual Average Percentage Change						
March Year	2008	2009	2010	2011	2012	2013
	Actual	Estimate	Forecast	Forecast	Forecast	Forecast
Real GDP (production basis)	3.2	0.3	0.8	2.9	3.9	3.8
Working Age Population	1.2	1.1	1.2	1.2	1.1	1.1
Labour Force	1.1	1.4	-0.3	-0.6	0.8	1.9
Employment - Full Time Equivalents*	0.8	0.4	-2.0	-1.0	1.6	3.0
Labour Productivity*	2.3	-0.1	2.9	4.0	2.2	0.8
Labour Productivity **	3.3	0.0	3.0	4.0	2.3	0.9
CPI (annual percentage change)	3.4	3.4	2.4	1.9	1.9	1.9
Average Ordinary Time Hourly Wages	4.2	5.4	4.2	3.7	3.0	2.9
Average Weekly Earnings	4.1	4.8	4.2	3.8	3.0	3.0
Real Wages	1.6	1.3	2.1	1.6	1.0	1.0
Compensation of Employees	5.7	5.9	2.2	2.7	4.6	5.9
Unit Labour Costs (Hours worked basis)	0.9	5.4	1.3	-0.3	0.6	2.0
Real Unit Labour Costs	-1.6	1.3	-0.8	-2.3	-1.3	0.1

* Full time equivalent basis

** Hours worked basis

Source: Statistics New Zealand, The Treasury

Number (000's)						
As at March Quarter	2008	2009	2010	2011	2012	2013
	Actual	Estimate	Forecast	Forecast	Forecast	Forecast
Total Population	4,264	4,299	4,341	4,382	4,423	4,462
Natural Increase	36	30	33	31	31	30
Net Migration	5	6	8	10	10	10
Annual Change	41	36	41	41	41	40
Working Age Population	3,284	3,320	3,358	3,397	3,434	3,470
Annual Change	36	36	39	38	37	36
Not in the labour force	1,053	1,042	1,094	1,136	1,146	1,135
Annual Change	43	-10	51	42	10	-11
Labour Force	2,231	2,277	2,265	2,261	2,288	2,335
Annual Change	-7	46	-13	-4	27	47
Total Employment	2,139	2,157	2,103	2,103	2,150	2,214
Annual Change	-5	18	-54	0	47	64
Unemployment	92	121	162	158	138	120
Annual Change	-2	28	42	-4	-20	-18
Participation Rate (%sa)	67.7	68.3	67	66.1	66.3	67.0
Unemployment Rate (%sa)	3.7	4.7	6.4	6.2	5.4	4.6

Table 7: Exports - SNA basis

Breakdown of Exports

March Years	Dairy Products			Meat and Meat Products			Non-Commodity*		
	%v	%p	\$ mn	%v	%p	\$ mn	%v	%p	\$ mn
2005	-9.4	9.1	5,783	3.5	6.8	4,873	8.4	-0.2	10,122
2006	-2.4	6.0	5,993	-2.2	-3.2	4,611	-0.5	2.5	10,332
2007	22.3	2.1	7,455	6.7	2.5	5,037	0.6	11.1	11,681
2008	-0.9	25.8	9,434	-2.9	-5.2	4,656	0.9	8.4	12,468
2009	-12.0	20.3	9,861	2.7	22.6	5,832	5.2	17.1	15,390
2010	11.6	-9.8	9,939	-7.1	7.8	5,858	-3.7	13.2	16,852
2011	2.9	2.6	10,488	3.3	1.1	6,112	3.9	1.8	17,797
2012	2.5	4.4	11,221	1.5	1.6	6,300	8.4	1.5	19,584
2013	2.3	1.6	11,648	1.2	2.0	6,505	5.4	2.0	21,063

March Years	Total Goods**			Services			Total Exports		
	%v	%p	\$ mn	%v	%p	\$ mn	%v	%p	\$ mn
2005	5.1	1.8	31,114	3.4	1.8	12,223	4.6	1.8	43,337
2006	0.7	0.9	31,581	-1.9	1.9	12,227	0.0	1.1	43,807
2007	4.9	7.5	35,636	-1.7	4.6	12,565	3.1	6.9	48,202
2008	3.7	4.7	38,720	-1.6	2.4	12,671	2.3	4.0	51,391
2009	-0.9	18.7	45,482	-3.4	4.3	12,757	-1.0	14.7	58,277
2010	-0.2	6.8	48,553	-7.7	8.5	12,779	-1.9	7.2	61,294
2011	2.8	1.8	50,830	1.8	4.9	13,648	2.5	2.5	64,384
2012	4.3	2.4	54,281	20.0	2.1	16,712	7.5	2.4	70,846
2013	3.4	1.9	57,177	16.3	1.9	19,796	6.4	2.0	76,845

* Consists of 'Metal Products and Machinery Equipment', 'Chemicals, Rubber and Other Non-Metallic Goods' and 'Textile, Apparel and Leather'

** Note that Statistics NZ withheld data for some components of exports for confidentiality reasons. As a result we have not published the 'Wood and Wood Products' and 'Other Goods' components of exports that we have published previously.

∞ **Table 8: Imports - SNA basis**

Breakdown of Imports

March Years	Capital Goods (VFD)			Mineral Fuel* (VFD)			Intermediate Goods** (VFD)			Consumption Goods (VFD)		
	%v	%p	\$ mn	%v	%p	\$ mn	%v	%p	\$ mn	%v	%p	\$ mn
2005	16.8	-9.1	6,607	13.7	21.6	3,811	10.1	-1.9	14,481	10.5	-3.9	8,125
2006	16.3	-5.0	7,301	0.3	37.3	5,250	-1.4	0.7	14,365	8.1	-1.0	8,703
2007	-3.2	2.3	7,223	-8.0	21.2	5,872	-2.8	12.5	15,717	5.8	3.7	9,544
2008	10.9	-10.4	7,183	14.9	3.9	7,014	9.5	-6.5	16,092	7.0	-3.0	9,908
2009	16.3	5.9	8,821	-2.1	22.5	8,387	1.5	19.8	19,561	3.2	14.2	11,677
2010	-20.1	5.2	7,440	-6.3	-6.7	7,328	-6.0	15.7	21,286	-3.4	17.1	13,210
2011	0.7	-1.0	7,417	-2.4	11.1	7,954	-2.4	2.6	21,314	1.8	1.8	13,686
2012	6.6	0.7	7,959	3.2	6.6	8,749	3.2	2.5	22,542	3.2	1.6	14,345
2013	5.9	1.2	8,531	5.2	4.6	9,628	5.2	2.6	24,322	4.1	2.0	15,240

March Years	Total Goods (VFD)			Services			Total		
	%v	%p	\$ mn	%v	%p	\$ mn	%v	%p	\$ mn
2005	12.0	-1.7	33,343	13.9	-1.8	11,188	12.5	-1.8	44,533
2006	3.9	3.1	35,685	5.0	0.7	11,829	4.2	2.5	47,514
2007	-0.9	8.7	38,464	-3.9	7.0	12,188	-1.6	8.3	50,652
2008	10.0	-4.4	40,464	8.8	-5.8	12,483	9.7	-4.7	52,946
2009	4.0	15.6	48,607	-0.1	13.4	14,098	3.2	14.9	62,717
2010	-8.9	11.7	49,460	-7.7	14.2	14,910	-8.7	12.3	64,368
2011	-0.4	2.6	50,535	-2.6	2.0	14,812	-0.9	2.4	65,346
2012	4.3	2.1	53,814	2.3	2.3	15,501	3.9	2.1	69,315
2013	5.1	2.5	58,009	4.2	2.8	16,594	4.9	2.6	74,603

* Consists of 'Fuels and Lubricants' and 'Petrol and Aviation Gas'

** Consists of 'Intermediate Goods' excluding 'Fuels and Lubricants' and 'Passenger Cars'

*** Consists of 'Consumption Goods' and 'Passenger Motor Cars'

Detailed Tax Forecast Information

Table 1 – Treasury and Inland Revenue forecasts of tax revenue

Tax revenue	2007/08	2008/09		2009/10		2010/11		2011/12		2012/13	
	Actual	Forecast		Forecast		Forecast		Forecast		Forecast	
\$ million		Treasury	IRD	Treasury	IRD	Treasury	IRD	Treasury	IRD	Treasury	IRD
Direct tax											
Individuals											
Source deductions	23,769	23,178	23,201	22,560	22,619	23,074	23,145	24,180	24,368	25,841	26,231
Other persons tax	5,071	5,108	4,766	4,919	4,646	4,686	4,682	4,888	4,927	5,133	5,053
Refunds	(1,470)	(1,693)	(1,580)	(1,722)	(1,560)	(1,830)	(1,610)	(1,740)	(1,680)	(1,802)	(1,750)
Fringe benefit tax	522	508	507	499	506	508	513	538	539	565	569
Subtotal: Individuals	27,892	27,101	26,894	26,256	26,211	26,438	26,730	27,866	28,154	29,737	30,103
Company tax (net)	9,103	7,797	7,422	8,383	8,557	9,145	8,781	9,938	9,350	10,704	10,011
Withholding taxes on:											
Resident interest income	2,699	2,876	2,932	2,429	2,408	2,065	1,857	2,094	1,893	2,264	2,041
Non-resident income	1,506	1,358	1,450	1,044	1,355	1,059	1,382	1,161	1,410	1,232	1,438
Foreign-source dividends	71	27	36	37	35	37	37	37	37	37	37
Resident dividend income	69	43	61	194	196	235	243	240	258	244	268
Subtotal: Withholding tax	4,345	4,304	4,479	3,704	3,994	3,396	3,519	3,532	3,598	3,777	3,784
Total income tax	41,340	39,202	38,795	38,343	38,762	38,979	39,030	41,336	41,102	44,218	43,898
Other: Estate and gift duties	3	3	2	3	2	3	2	3	2	3	2
Total direct tax	41,343	39,205	38,797	38,346	38,764	38,982	39,032	41,339	41,104	44,221	43,900
Indirect tax											
GST											
GST (Customs)	5,812	6,800	6,557	6,854	6,829	7,051	6,946	7,533	7,364	8,114	7,929
GST (IRD)	9,488	9,490	9,499	9,847	9,721	10,233	10,171	10,505	10,462	10,824	10,796
Subtotal: GST	15,300	16,290	16,056	16,701	16,550	17,284	17,117	18,038	17,826	18,938	18,725
Excise duties on:											
Alcoholic drinks	573	603	610	630	633	655	657	674	682	692	708
Tobacco products	159	147	155	150	156	152	159	153	162	155	164
Petroleum fuels	819	806	810	810	810	821	820	837	840	854	860
Subtotal: excise duties	1,551	1,556	1,575	1,590	1,599	1,628	1,636	1,664	1,684	1,701	1,732
Other indirect tax											
Customs duty	1,857	1,871	1,962	1,851	1,860	1,836	1,807	1,819	1,778	1,836	1,784
Road user charges	851	877	915	895	920	942	965	996	1,020	1,051	1,075
Gaming duties	302	294	290	299	297	309	301	319	306	330	311
Motor vehicle fees	226	185	187	184	189	185	195	186	203	188	210
Exhaustible resource levy	46	43	45	43	45	43	50	43	55	43	58
Approved issuer levy, cheque duty & other	123	105	114	105	111	105	103	105	100	105	99
Subtotal: Other indirect tax	3,405	3,375	3,513	3,377	3,422	3,420	3,421	3,468	3,462	3,553	3,537
Total indirect tax	20,256	21,221	21,144	21,668	21,571	22,332	22,174	23,170	22,972	24,192	23,994
Total tax	61,599	60,426	59,941	60,014	60,335	61,314	61,206	64,509	64,076	68,413	67,894
Total tax (% of GDP)	34.2%	33.4%	33.1%	32.5%	32.7%	31.6%	31.6%	31.4%	31.2%	31.6%	31.4%
less Core Crown tax eliminations											
Core Crown income tax	237	31	31	419	419	494	494	574	574	655	655
GST on Crown expenses and departmental outputs	4,185	4,633	4,633	4,877	4,877	5,160	5,160	5,269	5,269	5,516	5,516
Crown ESCT	413	347	347	348	348	347	347	348	348	348	348
Crown AIL	17	15	15	15	15	15	15	15	15	15	15
Core Crown taxation	56,747	55,400	54,915	54,355	54,676	55,298	55,190	58,303	57,870	61,879	61,360
Core Crown tax (% of GDP)	31.5%	30.6%	30.3%	29.5%	29.6%	28.5%	28.5%	28.4%	28.2%	28.6%	28.3%
less Total Crown tax eliminations											
Income tax from SOEs and CEs	322	470	470	562	562	538	538	565	565	648	648
Other Crown GST	..	..	..	..	..	..	..	..	..	..	..
ESCT from SOEs and CEs	10	8	8	8	8	9	9	9	9	9	9
Lottery duty	42	42	42	44	44	47	47	50	50	52	52
Total Crown taxation	56,373	54,880	54,395	53,741	54,062	54,704	54,596	57,679	57,246	61,170	60,651
Total Crown tax (% of GDP)	31.3%	30.3%	30.0%	29.1%	29.3%	28.2%	28.2%	28.1%	27.9%	28.3%	28.0%
Nominal GDP	180,077	181,139	181,139	184,506	184,506	193,908	193,908	205,389	205,389	216,523	216,523

Sources: Inland Revenue, The Treasury

Table 2 – Treasury and Inland Revenue forecasts of tax receipts (cash)

Tax receipts	2007/08 Actual	2008/09 Forecast		2009/10 Forecast		2010/11 Forecast		2011/12 Forecast		2012/13 Forecast	
		Treasury	IRD	Treasury	IRD	Treasury	IRD	Treasury	IRD	Treasury	IRD
\$ million											
Direct tax											
Individuals											
Source deductions	23,247	23,103	23,126	22,483	22,542	22,995	23,066	24,097	24,285	25,753	26,143
Other persons tax	5,469	5,311	5,260	5,295	5,250	4,978	5,175	5,185	5,360	5,480	5,500
Refunds	(2,171)	(2,411)	(2,360)	(2,263)	(2,320)	(2,344)	(2,335)	(2,288)	(2,365)	(2,387)	(2,435)
Fringe benefit tax	489	504	504	500	502	504	507	527	531	558	561
Subtotal: Individuals	27,034	26,507	26,530	26,015	25,974	26,133	26,413	27,521	27,811	29,404	29,769
Company tax (net)	8,703	7,088	6,035	8,307	8,283	9,000	8,493	9,843	9,166	10,400	9,564
Withholding taxes on:											
Resident interest income	2,616	2,830	2,932	2,428	2,408	2,064	1,857	2,093	1,893	2,263	2,041
Non-resident income	1,638	1,191	1,450	1,016	1,355	1,081	1,382	1,168	1,410	1,238	1,438
Foreign-source dividends	72	27	36	37	35	37	37	37	37	37	37
Resident dividend income	40	69	61	193	196	234	243	239	258	243	268
Subtotal: Withholding tax	4,366	4,117	4,479	3,674	3,994	3,416	3,519	3,537	3,598	3,781	3,784
Total income tax	40,103	37,712	37,044	37,996	38,251	38,549	38,425	40,901	40,575	43,585	43,117
Other: Estate and gift duties	2	3	2	3	2	3	2	3	2	3	2
Total direct tax	40,105	37,715	37,046	37,999	38,253	38,552	38,427	40,904	40,577	43,588	43,119
Indirect tax											
GST											
GST (Customs)	5,774	6,703	6,557	6,855	6,829	7,052	6,946	7,534	7,364	8,115	7,929
GST (IRD)	9,696	9,235	9,254	9,575	9,455	9,946	9,900	10,204	10,177	10,509	10,497
Subtotal: GST	15,470	15,938	15,811	16,430	16,284	16,998	16,846	17,738	17,541	18,624	18,426
Excise duties on:											
Alcoholic drinks	554	603	590	630	633	655	657	674	682	692	708
Tobacco products	160	147	155	150	156	152	159	153	162	155	164
Petroleum fuels	808	806	810	810	810	821	820	837	840	854	860
Subtotal: Excise duties	1,522	1,556	1,555	1,590	1,599	1,628	1,636	1,664	1,684	1,701	1,732
Other indirect tax											
Customs duty	1,946	1,871	1,962	1,851	1,860	1,836	1,807	1,819	1,778	1,836	1,784
Road user charges	851	877	915	895	920	942	965	996	1,020	1,051	1,075
Gaming duties	279	290	290	299	297	309	301	319	306	330	311
Motor vehicle fees	223	185	187	184	189	185	195	186	203	188	210
Exhaustible resource levy	42	48	45	43	45	43	50	43	55	43	58
Approved issuer levy, cheque duty & other	102	95	109	100	106	100	98	100	95	100	94
Subtotal: Other indirect tax	3,443	3,366	3,508	3,372	3,417	3,415	3,416	3,463	3,457	3,548	3,532
Total indirect tax	20,435	20,860	20,874	21,392	21,300	22,041	21,898	22,865	22,682	23,873	23,690
Total tax	60,540	58,575	57,920	59,391	59,553	60,593	60,325	63,769	63,259	67,461	66,809
Total tax (% of GDP)	33.6%	32.3%	32.0%	32.2%	32.3%	31.2%	31.1%	31.0%	30.8%	31.2%	30.9%
Less Core Crown tax eliminations											
Core Crown income tax	407	(160)	(160)	419	419	494	494	574	574	655	655
GST on Crown expenses and departmental outputs	4,141	4,647	4,647	4,868	4,868	5,139	5,139	5,260	5,260	5,504	5,504
Crown ESCT	406	309	309	316	316	325	325	333	333	333	333
Crown ALL	17	15	15	15	15	15	15	15	15	15	15
Core Crown taxation	55,569	53,764	53,109	53,773	53,935	54,620	54,352	57,587	57,077	60,954	60,302
Core Crown tax (% of GDP)	30.9%	29.7%	29.3%	29.1%	29.2%	28.2%	28.0%	28.0%	27.8%	28.2%	27.9%
Less Total Crown tax eliminations											
Income tax from SOEs and CEs	246	503	503	439	439	563	563	525	525	708	708
Other Crown GST	102	(56)	(56)	(2)	(2)	3	3	38	38	18	18
ESCT from SOEs and CEs	11	4	4	4	4	4	4	4	4	4	4
Lottery duty	42	42	42	44	44	47	47	50	50	53	53
Total Crown taxation	55,168	53,271	52,616	53,288	53,450	54,003	53,735	56,970	56,460	60,171	59,519
Total Crown tax (% of GDP)	30.6%	29.4%	29.0%	28.9%	29.0%	27.8%	27.7%	27.7%	27.5%	27.8%	27.5%

Sources: Inland Revenue, The Treasury

Additional Fiscal Indicators – Estimates of the Cyclically-Adjusted Balance and Fiscal Impulse

There are different ways of assessing the relationship between fiscal policy and the macroeconomy. For a broader discussion, refer to pages 86 and 87 of the *2008 Budget Economic and Fiscal Update* (BEFU) <http://www.treasury.govt.nz/budget/forecasts/befu2008>. Below is an update of two related fiscal indicators, the cyclically-adjusted balance and the fiscal impulse.

Cyclically-adjusted balance

The cyclically-adjusted balance (CAB) is an indicator that provides an estimate of what the fiscal balance would be if the economy was operating at trend output. The CAB can act as a guide in assessing the sustainability of fiscal policy. It does this by gauging the extent to which the fiscal balance reflects temporary cyclical factors rather than long-lasting permanent factors. A positive value of the CAB suggests that the fiscal surplus is not the result of temporary cyclical factors affecting the economy.

Cyclical adjustment uses the output gap, the difference between actual output and trend output, to adjust taxes and unemployment spending. Trend output, and so the output gap, is not directly observable and has to be estimated. Trend output is estimated here using a Hodrick-Prescott (HP) statistical filter over historical and forecast real GDP. The nature of this filter is such that estimates of trend growth are not a constant but are smoothed, moving with actual growth. The responsiveness of tax bases to the output gap are OECD estimates while the responsiveness of taxes to the bases are Treasury estimates.

Cyclical adjustment also takes into account the responsiveness of different tax types, and unemployment, to the output gap. No adjustments are made here for prices being above or below trend levels. Because the approach removes an estimate of the cyclical component of taxes and unemployment spending from the actual fiscal balance, the CAB is a mix of discretionary fiscal policy, demand driven influences on spending, prices differing from trend, and forecast changes. For this reason it is important to also look at the specific underlying policy changes to taxes and spending. Finally, because it includes estimated variables, and is sensitive to new information, particularly regarding the output gap, the CAB is subject to uncertainty.¹

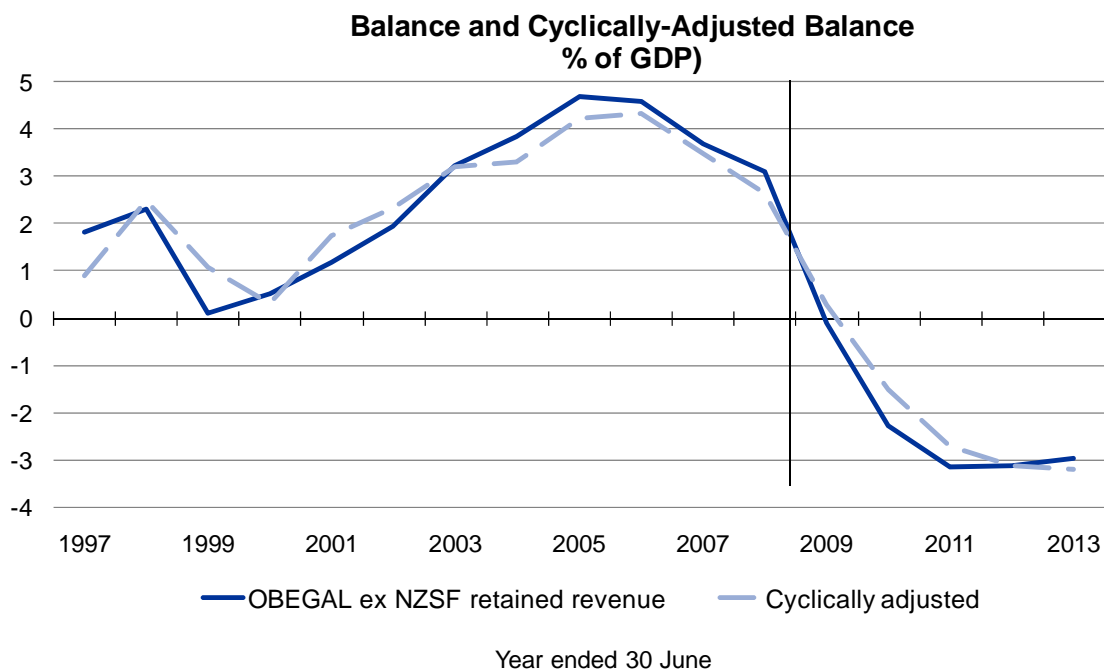
There are different views on the usefulness of the CAB as an indicator because of the inherent uncertainty of the estimate. In the United Kingdom estimates of the cyclically-adjusted current balance are a requirement under the Code for Fiscal Stability. In contrast, no such requirement exists in the Australian Charter of Budget Honesty and estimates are not generally published. Although the Public Finance Act 1989 does not require cyclically-adjusted estimates, the Treasury has published CAB estimates since the mid-1990s. The approach used by the Treasury to estimate the CAB is in-line with those used by the OECD and IMF.

In the figure below the CAB is estimated for a measure of the operating balance excluding gains and losses (OBEGAL), and excluding the retained revenue of the NZS Fund. This measure of the fiscal balance recognises that the NZS Fund has been set up to meet future

¹ Treasury's approach to estimating the cyclically-adjusted balance and fiscal impulse is set out in Treasury Working Papers 01/10 and 02/30.

spending pressures and as a result the returns it earns are not available to the Crown to meet current spending requirements. The figure shows that both the OBEGAL (excluding NZS Fund retained revenue) and the estimated CAB have increased since the late 1990s. However, the estimated CAB has not increased by the same extent. This suggests part of the increase in the fiscal balance was cyclical (i.e., from 2004 through to 2008) and reflected the operation of the so-called automatic fiscal stabilisers in response to a positive output gap.

A reduction in the CAB was forecast at the time of the 2008 BEFU, in part as a result of discretionary fiscal policy changes, including tax reductions. The December forecasts incorporate planned changes to taxes and spending made since the 2008 PREFU. The forecasts show that the OBEGAL (excluding NZSF retained revenue) declines somewhat faster than the estimated CAB in the near term. This reflects the operation of the automatic fiscal stabilisers on the downside as a negative output gap opens up. The stabilisers are estimated to be operating from 2009 to 2011, with the effect amounting to almost 1% of GDP in 2010.



Source: The Treasury

As discussed above, estimates of the CAB are sensitive to new information about the evolution of the output gap and how this affects the cyclically-adjusted components of revenues and expenses. The output gap is currently forecast to be negative in 2009, 2010 and 2011, with larger gaps in 2010 and 2011 than forecast in the PREFU.

Like many economic forecasters, Treasury assumes that towards the end of the forecast period output growth converges toward trend output growth. However, it is not always the case that the output gap is closed at the end of the forecasts or that the level of trend output is unchanged between forecasts. In addition, changes in prices can mean that the level of nominal GDP, and hence taxes, can display level shifts between forecast rounds. If the change in nominal GDP and so tax revenue is permanent, and the output gap is small or closed, then the CAB will treat these as permanent (i.e., structural and discretionary) tax revenue changes. In contrast, while some expenses are linked to prices (eg, indexation of benefits) there is less movement in response to forecast changes in nominal GDP.

In the December forecasts, nominal GDP is lower in each year of the forecasts when compared to BEFU and PREFU and the output gap is essentially closed across the last two forecast years. Table 1.4 in the forecasts sets out the changes in revenue and expenses since BEFU and PREFU and the impact on the OBEGAL.² Based on the information we have at this point in time, although discretionary policy changes have reduced the CAB since BEFU, long-lasting economic-driven changes are the main driver.

Fiscal impulse

Fiscal impulse is an indicator that combines both tax and spending information to provide a guide to the impact of fiscal policy on demand in the economy. It is common, especially in cross-country comparisons, for fiscal impulse to be gauged by the change in a cyclically-adjusted balance.

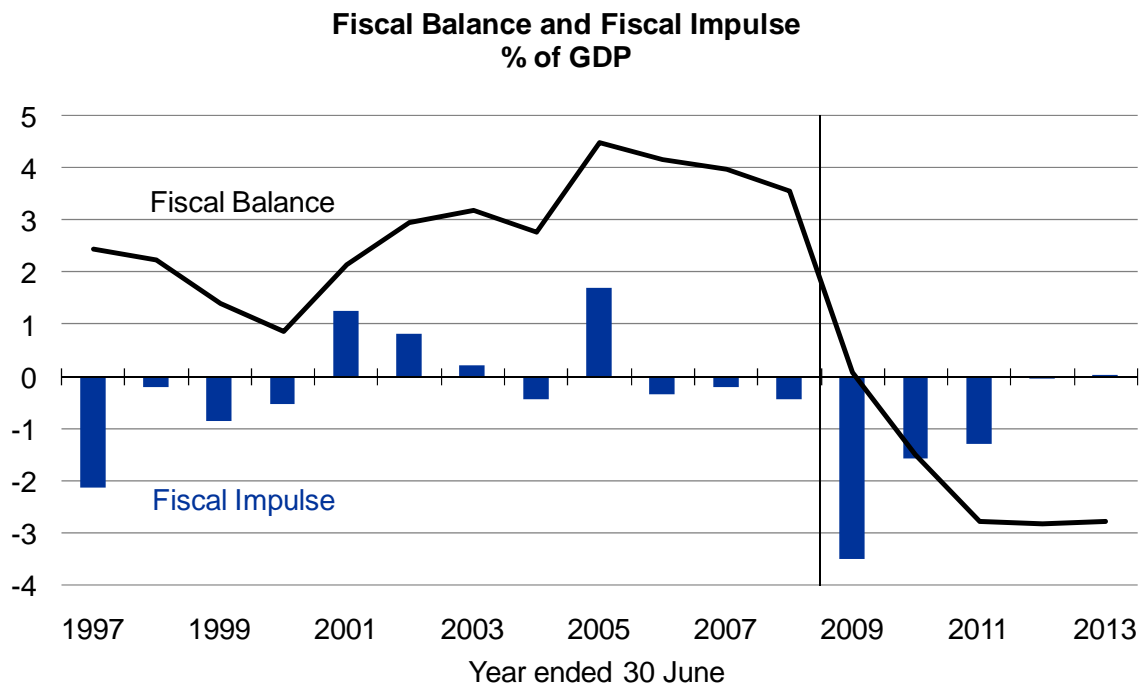
Rather than use the change in the above-mentioned (accrual-based) CAB, Treasury constructs fiscal impulse from cash flow information.³ A cash-based measure of the operating balance is adjusted to remove the estimated cyclical components of taxes and unemployment spending, and net interest payments. From this balance, capital expenditure is deducted. Capital expenditure is adjusted to remove that part of defence spending judged as less likely to affect aggregate demand (e.g., imported defence equipment). Operating expenditure is adjusted to remove the impact of the KiwiSaver scheme.

These adjustments are made so that the indicator focuses on those changes in discretionary fiscal policy likely to affect demand in the economy. The change in the resulting fiscal balance is the fiscal impulse. However, as with the CAB, the calculation removes estimates of the cyclical components and the resulting indicator is a mix of non-cyclical factors, and not solely discretionary changes. As with the CAB, estimates of fiscal impulse can and do change between forecast rounds because of revisions to the output gap, changes in taxes and spending (both operating and capital), revisions and changes to nominal GDP (including permanent level shifts).

Fiscal impulse is interpreted as expansionary fiscal policy when the fiscal balance decreases (the government is adding to aggregate demand) or contractionary when the fiscal balance increases (the government is reducing its contribution to aggregate demand).

² Net finance costs are included in the cyclically-adjusted balance. However, they are not cyclically-adjusted and it is not uncommon to remove them so as to focus on the so-called primary balance. Changes in net finance costs between forecast rounds reflect the underlying changes in primary taxes and spending and the impact on debt.

³ Similarly, HM Treasury in the United Kingdom calculate a CAB for the current budget as well as a fiscal impulse measure based on the change in cyclically-adjusted public sector net borrowing (PSNB). This measure, which they term “fiscal stance”, allows for the impact of net investment.



Source: The Treasury

Based on the December forecasts, the expansionary fiscal impulses in 2009 and 2010 sum to around 5% of GDP. The PREFU estimate for these two years summed to around 3½% of GDP. The difference arises in part because of changes to the timing and size of personal tax reductions, offsetting fiscal savings, and the changed fiscal position resulting from the structurally weaker economy. This latter effect is the dominant one. Table 8 on page 35 of the forecasts is instructive here, as it gives an indication of the relative impact of particular changes – policy changes and otherwise – on the residual cash position since PREFU.

Notwithstanding the differences in calculation and coverage, the change in the CAB over the forecast period is quite similar to the estimates of fiscal impulse, with both indicators suggesting an easing of fiscal policy. Importantly, given the nature of the methodology, the estimate of this easing is subject to revision over time.

Finally, although fiscal impulse provides a broad indication of discretionary fiscal policy changes, it does not provide any information on how a change in fiscal policy will be transmitted through the economy. In particular, it ignores any supply-side impacts of policy and does not contain any information about second-round effects, such as how changes in the spending decisions of households and firms may change as a result of changes in interest rates, inflation and the exchange rate. As a result, fiscal impulse is not a measure of the impact of fiscal policy on inflation. Even if the fiscal impulse indicator is unchanged between forecasts it does not mean that the inflation impact will be the same in each forecast. In particular, there may be a different inflationary impact from the same fiscal policy change depending on where the economy is in the cycle; if there is more (less) pressure on resources then the same discretionary fiscal policy change may have greater (lesser) inflation impact. In addition, a different make-up of taxes and spending could mean that the same fiscal impulse has a different impact on inflation.

OECD estimates

Figure 4 on page 11 of the 2009 Budget Policy Statement presents estimates of fiscal easing across OECD economies based on the change in the underlying general government financial balance, which removes the estimated effects of the business cycle as well as one-off factors. These underlying fiscal balances are OECD estimates from the *Economic Outlook* (No.84) released in November 2008. The *Economic Outlook* was finalised on 14 November and fiscal policy assumptions were based as closely as possible on legislated tax and spending provisions. Where policy changes had been announced but not legislated, they were incorporated if it was deemed clear that they would be implemented in a shape close to that announced. In the case of New Zealand, the OECD estimates are based on PREFU.

Because of differences in the definition of the fiscal balance, the fiscal years used and estimates of the cycle, fiscal easing derived from the OECD balances is not directly comparable to the Treasury estimate of fiscal impulse above, although the direction and broad magnitude of change is similar. The issues discussed above regarding the ability of the CAB and fiscal impulse to identify discretionary policy also apply to the use of summary measures such as the OECD CAB estimates.

Data for charts

The table below sets out the Treasury estimates of the indicators discussed above.

June year % of GDP	Fiscal Balance	Fiscal Impulse	OBEGAL ex NZSF retained income	Cyclically Adjusted
1997	2.5	-2.1	1.8	0.9
1998	2.2	-0.2	2.3	2.5
1999	1.4	-0.9	0.1	1.1
2000	0.9	-0.5	0.5	0.3
2001	2.1	1.3	1.2	1.7
2002	3.0	0.8	2.0	2.3
2003	3.2	0.2	3.2	3.2
2004	2.8	-0.4	3.9	3.3
2005	4.5	1.7	4.7	4.2
2006	4.2	-0.3	4.6	4.3
2007	4.0	-0.2	3.7	3.5
2008	3.6	-0.4	3.1	2.6
2009	0.1	-3.5	-0.1	0.3
2010	-1.5	-1.6	-2.3	-1.5
2011	-2.8	-1.3	-3.1	-2.7
2012	-2.8	0.0	-3.1	-3.1
2013	-2.8	0.0	-3.0	-3.2

Source: The Treasury