APPENDIX D: SENSITIVITY OF RECEIPT AND PAYMENT ESTIMATES TO ECONOMIC DEVELOPMENTS

The estimates contained in the PEFO are based on forecasts and projections of the economic outlook. Changes to the economic assumptions underlying the estimates will impact on receipts and payments, and hence the size of the underlying cash balance.

This appendix examines the effects on receipts and payments of altering some of the key economic assumptions. Tables D2 and D4 illustrate the sensitivity of key components of receipts and payments to possible variations in the economic outlook. The two scenarios considered are:

- Scenario 1: a 1 per cent reduction in nominal GDP owing to a fall in the terms of trade.
- Scenario 2: a 1 per cent increase in real GDP driven by an increase in labour productivity and labour force participation, with each contributing equally.

The economic scenarios provide a rule of thumb indication of the impact on receipts, payments and the underlying cash balance of changes in the economic outlook. They represent a partial economic analysis only and do not attempt to capture all the economic feedback and other policy responses related to changed economic conditions. In particular, the analysis assumes no change in the exchange rate, interest rates or policy over the forecast period. The impact of the two scenarios on the economic parameters would be different if the full feedback response on economic variables and likely policy actions were taken into account. The analysis does not aim to provide an alternative picture of the economic forecasts under these scenarios, but instead gives an indication of the sensitivity associated with different components of receipts and payments to changes in the economy. As such, the changes in the economic variables and their impact on the fiscal outlook are merely illustrative.

The impacts shown in the tables below are broadly symmetrical. That is, impacts of around the same magnitude, but in the opposite direction, would apply if the terms of trade were to increase or if real GDP were to decrease.

Scenario 1

The first scenario involves a permanent fall in world prices of non-rural commodity exports in 2013-14 consistent with a fall in the terms of trade of around 4 per cent, which causes a 1 per cent fall in nominal GDP by 2014-15. The sensitivity analysis evaluates the flow-on effects on the economy, the labour market and prices. The impacts in Table D1 are stylised and refer to per cent deviations from the baseline levels of the economic parameters.

Table D1: Illustrative impact of a permanent non-rural commodity price fall consistent with a 1 per cent fall in nominal GDP by 2014-15 (per cent deviation from the baseline level)

	2013-14 per cent	2014-15 per cent
Real GDP	0	- 1/4
Non-farm GDP deflator	- 3/4	- 3/4
Employment	- 1/4	- 1/2
Wages	0	- 1/4
CPI	0	- 1/4
Company profits	-3	-3
Consumption	- 1/4	- 1/2

Assuming no change in exchange rates or interest rates, the fall in export prices leads directly to a lower non-farm GDP deflator (from the export component of GDP) and lower domestic incomes. Lower domestic incomes cause both consumption and investment to fall, resulting in lower real GDP, employment and wages. The fall in aggregate demand puts downward pressure on domestic prices.

In reality, a fall in the terms of trade would be expected to lead to a fall in the exchange rate, although the magnitude is particularly uncertain in the short term. In the event of a fall in the exchange rate, the impacts on the external sector would dampen the real GDP effects, and there would be some offsetting upward pressure on domestic prices.

Given these assumptions, the overall impact of the fall in the terms of trade is a decrease in the underlying cash balance of around $3.1 billion in 2013-14 and around $6.0 billion in 2014-15 (see Table D2).

Table D2: Illustrative sensitivity of the budget balance to a 1 per cent decrease in nominal GDP due to a fall in the terms of trade

	2013-14 $b	2014-15 $b
Receipts		
Individuals and other withholding taxes	-0.5	-1.6
Superannuation fund taxes	-0.1	-0.3
Company tax	-1.9	-3.1
Resource rent taxes	-0.3	-0.5
Goods and services tax	-0.1	-0.3
Excise and customs duty	-0.1	-0.1
Other taxes	0.0	0.0
Total receipts	**-3.0**	**-5.9**
Payments		
Income support	-0.1	-0.2
Other payments	0.0	0.1
Goods and services tax	0.1	0.2
Total payments	**0.0**	**0.1**
Public debt interest	-0.1	-0.2
Underlying cash balance impact	**-3.1**	**-6.0**

On the receipts side, a fall in the terms of trade results in a fall in nominal GDP which reduces tax collections. The largest impact is on company tax receipts as the fall in export income decreases company profits. Owing to lags in the tax system, the effect on company tax is larger in 2014-15. Lower company profits are assumed to flow through to lower Australian equity prices, therefore reducing capital gains tax from individuals, companies and superannuation funds.

The weaker economy results in lower aggregate demand, which flows through to lower employment and wages, reducing individuals' income tax receipts. The decrease in disposable incomes leads to lower consumption, which in turn results in a decrease in GST receipts (decreasing GST payments to the States by the same amount) and other indirect taxes.

On the payments side, a significant proportion of government expenditure is partially indexed to movements in costs (as reflected in various price and wage measures). Some forms of expenditure, in particular income support payments, are also driven by the number of beneficiaries.

The overall estimated expenditure on income support payments (including pensions and allowances) increases in both years because of a higher number of unemployment benefit recipients. The increase in unemployment benefits in 2014-15 is partly offset by reduced expenditure on pensions and allowances reflecting lower growth in benefit rates resulting from lower wages growth and lower inflation. At the same time, other payments linked to inflation fall in line with the reduced growth in prices.

The reduction in the underlying cash balance results in a higher borrowing requirement and a higher public debt interest cost.

As noted above, under a floating exchange rate, the fall in the exchange rate would dampen the effects of the fall in the terms of trade on real GDP, meaning the impact on the fiscal position could be substantially more subdued. Also, to the extent that the fall in the terms of trade is temporary rather than permanent, the impact on the economic and fiscal position would be more subdued.

Scenario 2

The second scenario involves a permanent 0.5 per cent increase in both the participation rate and labour productivity, resulting in a 1 per cent increase in the level of real GDP from 2013-14. Once again, the sensitivity analysis evaluates the flow-on effects on the economy, the labour market and prices. The impacts in Table D3 are stylised and refer to per cent deviations from the baseline levels of the parameters.

The 1 per cent increase in real GDP increases nominal GDP by slightly less but the magnitude of the effects on receipts, payments and the underlying cash balance differ from the first scenario because different parts of the economy are affected in different ways.

Table D3: Illustrative impact of an ongoing equal increase in both labour productivity and participation consistent with a 1 per cent increase in real GDP from 2013-14 (per cent deviation from the baseline level)

	2013-14 per cent	2014-15 per cent
Nominal GDP	3/4	3/4
Non-farm GDP deflator	- 1/4	- 1/4
Employment	1/2	1/2
Wages	1/4	1/4
CPI	- 1/4	- 1/4
Company profits	1 3/4	1 3/4
Consumption	1	1

The increases in labour force participation and labour productivity have the same impact on output, but different impacts on the labour market. Higher productivity leads to higher real GDP and higher real wages, while an increase in the participation rate increases employment and real GDP. Imports are higher in this scenario, reflecting higher domestic incomes.

Since the supply side of the economy expands, inflation falls relative to the baseline. The lower domestic prices make exports more attractive to foreigners, with the resulting increase in exports offsetting higher imports, leaving the trade balance unchanged. The exchange rate is assumed to be unchanged.

The overall impact of the increase in labour productivity and participation is an increase in the underlying cash balance of around $2.9 billion in 2013-14 and around $3.7 billion in 2014-15 (see Table D4).

Table D4: Illustrative sensitivity of the budget balance to a 1 per cent increase in real GDP due to an equal increase in both productivity and participation

	2013-14 $b	2014-15 $b
Receipts		
Individuals and other withholding taxation	1.6	1.4
Superannuation taxation	0.1	0.3
Company tax	1.0	1.5
Goods and services tax	0.5	0.5
Excise and customs duty	0.3	0.3
Other taxation	0.0	0.0
Total receipts	**3.5**	**4.0**
Payments		
Income support	-0.1	-0.1
Other payments	0.0	0.1
Goods and services tax	-0.5	-0.5
Total payments	**-0.6**	**-0.5**
Public debt interest	0.0	0.2
Underlying cash balance impact	**2.9**	**3.7**

On the receipts side, individuals' income tax collections increase because of the rise in the number of wage earners and, additionally, higher real wages. The stronger labour market also increases tax collections from superannuation funds because contributions (including compulsory contributions) are higher. The increase in personal incomes leads to higher consumption which results in an increase in GST receipts (with the corresponding receipts passed on in higher GST payments to the States). In addition, the stronger economy results in higher levels of corporate profitability, increasing company taxes.

On the payments side, overall estimated expenditure on income support payments (including pensions and allowances) is slightly higher primarily reflecting growth in benefit rates through their indexation to wages. Lower inflation has a partially offsetting effect.

On balance, the rise in estimated tax collections is only partially offset by increased payments. This improves the underlying cash position, which results in a lower borrowing requirement and lower public debt interest cost.

To the extent that the increases in productivity and participation are temporary rather than permanent, the impact on the economic and fiscal position would be more subdued.