

## **APPENDIX B – SENSITIVITY ANALYSIS TABLE**

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### **INTRODUCTION**

The sensitivity analysis estimates the impact on income, expenses and the net result from transactions associated with variations to forecasts of selected economic and financial variables. The major variables that affect Victoria's net result from transactions are economic growth, employment, consumer prices, wages, enterprise bargaining agreements, domestic and overseas share prices, property prices and volumes and interest rates.

To assess sensitivity to change, the level of the economic variable in each case is assumed to be one per cent higher than expected in the budget year, before continuing to grow at the previously forecast rate. For interest rates, the assumption is that they are one percentage point higher than assumed in the budget year and remain one percentage point above the budget assumptions in subsequent years.

It is assumed during the analysis of each variable that all other variables follow their forecast growth. As such, the analysis captures the effect of changing only one variable at a time, and does not allow for the likelihood that other variables would also change. For example, an increase in consumer prices could be expected to affect interest rates, wage claims and other economic variables.

The sensitivity analysis in Table B.1 presents the sensitivity of both the net result from transactions and the net result to selected economic and financial indicators.

**Table B.1: Impact on the general government fiscal results of selected economic indicators being one per cent higher than expected from 2008-09<sup>(a)(b)(c)</sup>**

(\$ million)

	2008-09 Estimate	2009-10 Estimate	2010-11 Estimate	2011-12 Estimate
<b>GSP</b>				
Income from transactions	164	174	185	195
Expenses from transactions	-4	-11	-17	-23
<b>Net result from transactions</b>	<b>168</b>	<b>185</b>	<b>202</b>	<b>218</b>
Other economic flows	..	..	..	..
<b>Net result</b>	<b>168</b>	<b>185</b>	<b>202</b>	<b>218</b>
<b>Employment</b>				
Income from transactions	49	47	50	53
Expenses from transactions	-1	-4	-7	-10
<b>Net result from transactions</b>	<b>51</b>	<b>51</b>	<b>57</b>	<b>62</b>
Other economic flows	..	..	..	..
<b>Net result</b>	<b>51</b>	<b>51</b>	<b>57</b>	<b>62</b>
<b>Consumer prices<sup>(d)</sup></b>				
Income from transactions	266	279	292	305
Expenses from transactions	103	106	105	104
<b>Net result from transactions</b>	<b>163</b>	<b>173</b>	<b>187</b>	<b>201</b>
Other economic flows	-116	..	..	..
<b>Net result</b>	<b>47</b>	<b>173</b>	<b>187</b>	<b>201</b>
<b>Average weekly earnings</b>				
Income from transactions	44	47	50	53
Expenses from transactions	-1	-4	-7	-9
<b>Net result from transactions</b>	<b>46</b>	<b>51</b>	<b>56</b>	<b>62</b>
Other economic flows	..	..	..	..
<b>Net result</b>	<b>46</b>	<b>51</b>	<b>56</b>	<b>62</b>
<b>Enterprise bargaining agreements<sup>(e)</sup></b>				
Income from transactions	..	..	..	..
Expenses from transactions	147	189	210	229
<b>Net result from transactions</b>	<b>-147</b>	<b>-189</b>	<b>-210</b>	<b>-229</b>
Other economic flows	-165	..	..	..
<b>Net result</b>	<b>-311</b>	<b>-189</b>	<b>-210</b>	<b>-229</b>
<b>Domestic share prices</b>				
Income from transactions	3	..	..	..
Expenses from transactions	-0	-4	-4	-4
<b>Net result from transactions</b>	<b>3</b>	<b>4</b>	<b>4</b>	<b>4</b>
Other economic flows	51	..	..	..
<b>Net result</b>	<b>54</b>	<b>4</b>	<b>4</b>	<b>4</b>

**Table B.1: Impact on the general government fiscal results of selected economic indicators being one per cent higher than expected from 2008-09<sup>(a)(b)(c)</sup> (continued)**

(\$ million)

	2008-09 Estimate	2009-10 Estimate	2010-11 Estimate	2011-12 Estimate
<b>Overseas share prices</b>				
Income from transactions	4	..	..	..
Expenses from transactions	-0	-4	-4	-4
<b>Net result from transactions</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>
Other economic flows	46	..	..	..
<b>Net result</b>	<b>50</b>	<b>4</b>	<b>4</b>	<b>4</b>
<b>Property prices</b>				
Income from transactions	52	52	71	70
Expenses from transactions	-2	-6	-9	-13
<b>Net result from transactions</b>	<b>54</b>	<b>58</b>	<b>80</b>	<b>84</b>
Other economic flows	18	..	..	..
<b>Net result</b>	<b>72</b>	<b>58</b>	<b>80</b>	<b>84</b>
<b>Property volumes</b>				
Income from transactions	37	37	39	39
Expenses from transactions	-1	-3	-5	-7
<b>Net result from transactions</b>	<b>38</b>	<b>40</b>	<b>44</b>	<b>46</b>
Other economic flows	..	..	..	..
<b>Net result</b>	<b>38</b>	<b>40</b>	<b>44</b>	<b>46</b>
<b>Interest rates<sup>(d)</sup></b>				
Income from transactions	121	36	38	39
Expenses from transactions	-3	47	53	62
<b>Net result from transactions</b>	<b>124</b>	<b>-11</b>	<b>-16</b>	<b>-23</b>
Other economic flows	2 727	..	..	..
<b>Net result</b>	<b>2 852</b>	<b>-11</b>	<b>-16</b>	<b>-23</b>

Source: Department of Treasury and Finance

Notes:

- (a) A positive number for income from transactions denotes an increase in revenue. A positive number for expenses from transactions denotes an increase in expenses (and hence a reduction in the net result from transactions and net result). A positive number for other economic flows represents an increase in revenue. A positive number for the net result from transactions and net result also denotes an increase in revenue. Numbers may not balance due to rounding.
- (b) The sensitivity from a one per cent lower than expected outcome of an economic variable, would in most instances, simply be the opposite of the impact shown in the table. However, for some results, the impacts of changes are not symmetrical and therefore care should be exercised when using the table to estimate the impact of lower than expected economic variables.
- (c) Only reasonably quantifiable data has been included in the analysis.
- (d) Reflecting the departmental funding model, it is assumed that an increase in consumer prices within the Budget year does not impact on employee entitlements.
- (e) Represents a one per cent increase in all government enterprise bargaining agreements.
- (f) Assumes a one percentage point increase across the entire term structure, i.e. short and long rates, over the forward estimates period.

### **Sensitivity to economic growth**

Higher than expected gross state product (GSP) is assumed to be associated with higher household consumption, leading to higher goods and services tax (GST) grant revenue and taxation revenue. This would increase both the net result from transactions and the net result.

### **Sensitivity to employment**

Higher than expected employment is assumed to result in additional payroll tax revenue, and would increase both the net result from transactions and the net result.

### **Sensitivity to consumer prices**

The impact of higher consumer prices is assumed to lead to higher Commonwealth-sourced revenue (due to indexation), as well as higher GST and taxation revenue as the value of tax bases rises in nominal terms. However, the higher revenue is partly offset by the higher cost of supplies and services, and some increases in outlays on grants and transfers. Reflecting the operation of the departmental funding model, this increase in expenses is limited to the extent that departments can fund it from increased revenue from specific purpose grants and sales of goods and services. Overall, there is a positive impact on the net result from transactions.

The increase in consumer prices would also result in an immediate increase in the superannuation liability which would adversely affect the net result by way of an actuarial loss. In subsequent years the now higher superannuation liability also increases the superannuation expense slightly.

### **Sensitivity to average weekly earnings**

A rise in the level of economy-wide wages would result in higher payroll tax revenue, contributing to an increase in the net result from transactions and net result. The government's enterprise bargaining agreements are assumed to be unchanged over the projection period.

### **Sensitivity to enterprise bargaining agreements**

Enterprise bargaining agreements have the potential to pose a substantial risk to Victoria's budget position. The government's public sector wages funding policy seeks to maintain the real value of wage increases and seeks productivity offsets for higher wage outcomes to minimise the risk to the budget. An across-the-board rise in the government's enterprise bargaining agreements in excess of the level set out in its wages policy would result in an increase in employee entitlements and a corresponding decline in the net result from transactions.

The increased employee entitlements would increase the value of the superannuation liability and result in a reduction in the net result for the budget year. The higher superannuation liability would flow through to an increase in the superannuation expense in the remaining out-years.

### **Sensitivity to domestic and overseas share prices**

The State's public financial corporations (PFCs) and superannuation funds have holdings of domestic and international shares as part of their respective investment portfolios. Higher domestic and international share prices therefore raise the profits of the PFCs and reduce the value of the superannuation liability due to the increase in superannuation fund assets.

The net result from transactions responds positively to increases in share prices as PFC income tax equivalents (ITEs) rise with profits. Furthermore, the higher than expected level of superannuation fund assets also reduces the superannuation expense beyond the budget year, thereby improving the net result from transactions.

### **Sensitivity to property prices**

Higher property prices have an immediate impact on the net result from transactions through increased collections of stamp duty on land transfer revenue. At the same time, the value of the superannuation liability decreases (due to the increased value of holdings of property in the investment portfolio of superannuation funds) which gives rise to an actuarial gain thereby increasing the net result. In later years, the higher property prices continue to be reflected in higher stamp duty on land transfer and land tax revenues, while the previous increase in superannuation assets reduces ongoing superannuation expenses, all of which increase the net result from transactions.

### **Sensitivity to property volumes**

Higher property transaction volumes would increase stamp duty on land transfer revenue leading to a rise in the net result from transactions and net result.

### **Sensitivity to interest rates**

A one percentage point increase in interest rates is assumed to reflect an increase in the cash rate of one percentage point over the entire forward estimates period, resulting in a one percentage point increase across the entire term structure.

The increase in interest rates reduces the valuation of long term liabilities of the PFCs and raises measured profits of these entities for distribution to the general government (GG) sector through ITEs. This is partly offset by lower public non-financial corporation dividends due to higher borrowing costs, as well as an increase in the borrowing costs of the GG sector.

At the same time, the increase in interest rates reduces the value of the superannuation liability, giving rise to an actuarial gain. In terms of ongoing superannuation expenses, the impact of a higher discount rate on service costs is more than offset by an increase in the annual interest expense on the superannuation liability going forward, leading to an increase in the superannuation expense. Accordingly, both the net result from transactions and the net result fall by the end of the forward estimates.