### The Performance of Fiscal Stabilisation Policy in Australia

1948-49 to 1963-64

By

D. A. L. Auld

#### Errata

<table>
<thead>
<tr>
<th>Page</th>
<th>Paragraph</th>
<th>Line</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>9</td>
<td>&quot;Employment&quot; should be spelled &quot;employment&quot;.</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>1</td>
<td>&quot;briefly&quot; should follow &quot;consider&quot;.</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>11</td>
<td>&quot;carefully&quot; should follow &quot;consider&quot;.</td>
</tr>
<tr>
<td>10</td>
<td>fn. 4</td>
<td></td>
<td>This footnote should read ...Swan, &quot;Economic Control...1960 and &quot;Longer Run Problems of the Balance of Payments&quot;, ANZAAS, 1955....</td>
</tr>
<tr>
<td>10</td>
<td>fn. 1</td>
<td></td>
<td>The footnote should read; Using ...indicator, the recessions were concentrated in the ....</td>
</tr>
<tr>
<td>10</td>
<td>fn. 2</td>
<td></td>
<td>The demand for labour index is, in the strictest sense, an index of demand relative to supply. (100-U + V) /100 is the ratio of demand to supply and the index is derived by multiplying this by 100.</td>
</tr>
<tr>
<td>12</td>
<td>2</td>
<td>10-11</td>
<td>&quot;carefully&quot; should follow &quot;expenditures&quot;.</td>
</tr>
<tr>
<td>13</td>
<td>1</td>
<td>6-7</td>
<td>The wage index refers here to average wages.</td>
</tr>
<tr>
<td>16</td>
<td>fn. 3</td>
<td></td>
<td>See Appendix A (p. 353).</td>
</tr>
<tr>
<td>17</td>
<td>fn. 1</td>
<td></td>
<td>&quot;Goss&quot; should be spelled &quot;gross&quot;.</td>
</tr>
<tr>
<td>19</td>
<td>1</td>
<td>4</td>
<td>&quot;Exemptions&quot; should be spelled &quot;exemptions&quot;.</td>
</tr>
<tr>
<td>19</td>
<td>table</td>
<td></td>
<td>The cost or gain to Commonwealth revenue of these discretionary tax changes is the cost in the current year.</td>
</tr>
<tr>
<td>20</td>
<td>3</td>
<td>2</td>
<td>Replace semi-colon by comma.</td>
</tr>
<tr>
<td>21</td>
<td>table</td>
<td></td>
<td>Add footnote to the ANNUAL data section of the table to the effect that G.D.E. (Gross Domestic Expenditure) is determined by subtracting imports from G.N.E. (Gross National Expenditure).</td>
</tr>
<tr>
<td>21</td>
<td>table</td>
<td></td>
<td>Column 3 (Quarterly) - index derived from reference in footnote 2, p. 10.</td>
</tr>
<tr>
<td>23</td>
<td>2</td>
<td>25</td>
<td>All branches of government include state and local as well as semi-government authorities employment.</td>
</tr>
<tr>
<td>25</td>
<td>2</td>
<td>9</td>
<td>The A.N.Z. index was sent to me by an official of the Bank. It is published in the A.N.Z. Bank Quarterly Survey.</td>
</tr>
<tr>
<td>28</td>
<td>2</td>
<td>9</td>
<td>Remove brackets.</td>
</tr>
<tr>
<td>29</td>
<td>1</td>
<td>4-5</td>
<td>The federal (Commonwealth) government abolished its taxation of property.</td>
</tr>
<tr>
<td>31</td>
<td>fn. 1</td>
<td></td>
<td>&quot;Monetary&quot; should be spelled &quot;monetary&quot;.</td>
</tr>
<tr>
<td>Page</td>
<td>Paragraph</td>
<td>Line</td>
<td>Comment</td>
</tr>
<tr>
<td>------</td>
<td>-----------</td>
<td>------</td>
<td>---------</td>
</tr>
<tr>
<td>32</td>
<td>2</td>
<td>2</td>
<td>&quot;Wholesale&quot; should be spelled &quot;wholesale&quot;.</td>
</tr>
<tr>
<td>40</td>
<td>3</td>
<td>5-6</td>
<td>Re-phrasing - &quot;...by 2.5 percent between the last quarter of 1955-56 and the first quarter of 1956-57&quot;.</td>
</tr>
<tr>
<td>44</td>
<td>2</td>
<td>14</td>
<td>The first part of the last sentence in paragraph 2 should read, &quot;The smaller increase in spending...&quot;</td>
</tr>
<tr>
<td>49</td>
<td>fn. 1</td>
<td></td>
<td>In footnote 1, delete the reference to Table 63 and add: &quot;Consumer expenditure and personal disposable income have been deflated by a common index.&quot;</td>
</tr>
<tr>
<td>51</td>
<td>3</td>
<td>12</td>
<td>Replace semi-colon by colon.</td>
</tr>
<tr>
<td>54</td>
<td>fn. 2</td>
<td></td>
<td>Page reference should be 299.</td>
</tr>
<tr>
<td>54</td>
<td>2</td>
<td>8</td>
<td>The quotation should read, &quot;Since 1956, despite...&quot;</td>
</tr>
<tr>
<td>66</td>
<td>3</td>
<td>6</td>
<td>The year refers to the calendar year. Similarly on page 67.</td>
</tr>
<tr>
<td>68</td>
<td>3</td>
<td>5</td>
<td>Delete semi-colon after &quot;Taxes&quot;. Similarly after &quot;Transfers&quot; and &quot;Spending&quot; on p. 69.</td>
</tr>
<tr>
<td>69</td>
<td>table</td>
<td></td>
<td>Bracketed figures are percentage changes.</td>
</tr>
<tr>
<td>70</td>
<td>2</td>
<td>3</td>
<td>&quot;Unused&quot; should be spelled &quot;unused&quot;.</td>
</tr>
<tr>
<td>72</td>
<td>2</td>
<td></td>
<td>The reference to Perkins should be J.O.N. Perkins.</td>
</tr>
<tr>
<td>74</td>
<td>3</td>
<td>8</td>
<td>Replace semi-colon by colon.</td>
</tr>
<tr>
<td>77</td>
<td>2</td>
<td>2</td>
<td>Substitute &quot;were&quot; for &quot;was&quot;.</td>
</tr>
<tr>
<td>78</td>
<td>2</td>
<td>5-6</td>
<td>&quot;Dr. Lydall&quot; should read &quot;Professor Lydall&quot;.</td>
</tr>
<tr>
<td>80</td>
<td>fn. 1</td>
<td></td>
<td>Replace semi-colon by colon.</td>
</tr>
<tr>
<td>81</td>
<td>2</td>
<td>10</td>
<td>&quot;Propersity&quot; should be spelled &quot;propensity&quot;.</td>
</tr>
<tr>
<td>85</td>
<td>equation</td>
<td>(5)</td>
<td>Before the AT, c' not just c. This is to indicate that the MPC applied to the tax is not the same as that in the multiplier.</td>
</tr>
<tr>
<td>86</td>
<td>both tables</td>
<td></td>
<td>The government spending and tax items require minus and plus signs respectively.</td>
</tr>
<tr>
<td>92</td>
<td>1</td>
<td>1</td>
<td>&quot;1954&quot; should read &quot;1964&quot;.</td>
</tr>
<tr>
<td>100</td>
<td>2</td>
<td>4</td>
<td>Replace &quot;their&quot; by &quot;its&quot;.</td>
</tr>
<tr>
<td>102</td>
<td>fn. 1</td>
<td>6</td>
<td>&quot;Depressions&quot; should be &quot;Depression&quot;.</td>
</tr>
<tr>
<td>105</td>
<td>2</td>
<td>2</td>
<td>&quot;Progressiveness&quot; should read &quot;progressive&quot;.</td>
</tr>
<tr>
<td>106</td>
<td>2</td>
<td>16</td>
<td>Replace semi-colon by comma.</td>
</tr>
<tr>
<td>108</td>
<td>1</td>
<td>12-13</td>
<td>Remove brackets.</td>
</tr>
<tr>
<td>110</td>
<td>2</td>
<td>14</td>
<td>Remove brackets.</td>
</tr>
<tr>
<td>112</td>
<td>fn. 2</td>
<td>5</td>
<td>After &quot;1953&quot; insert, &quot;New Haven, Conn.&quot;.</td>
</tr>
<tr>
<td>115</td>
<td>2</td>
<td>4</td>
<td>&quot;Insurance&quot; should read &quot;benefits&quot;.</td>
</tr>
<tr>
<td>Page</td>
<td>Paragraph</td>
<td>Line</td>
<td>Comment</td>
</tr>
<tr>
<td>------</td>
<td>-----------</td>
<td>------</td>
<td>---------</td>
</tr>
<tr>
<td>116</td>
<td>fn. 2</td>
<td>2</td>
<td>The title of R. Lester's article should be, &quot;The Economic Significance of Unemployment Compensation 1948-59&quot;.</td>
</tr>
<tr>
<td>116</td>
<td>fn. 2</td>
<td>2</td>
<td>After &quot;Depression&quot;, insert &quot;Princeton, 1956&quot;.</td>
</tr>
<tr>
<td>117</td>
<td>1</td>
<td>8</td>
<td>&quot;Indeterminate&quot; should read &quot;indeterminate&quot;.</td>
</tr>
<tr>
<td>117</td>
<td>2</td>
<td>15</td>
<td>&quot;Special grants&quot; should read &quot;specific purpose grants&quot;.</td>
</tr>
<tr>
<td>130</td>
<td>3</td>
<td>1</td>
<td>&quot;More&quot; should read &quot;most&quot;.</td>
</tr>
<tr>
<td>131</td>
<td>fn. 2</td>
<td>2</td>
<td>&quot;ΔT / Δt&quot; should be &quot;ΔT / ΔY&quot;.</td>
</tr>
<tr>
<td>137</td>
<td>1</td>
<td>4</td>
<td>under 2, the &quot;b&quot; should be &quot;b^2&quot;.</td>
</tr>
<tr>
<td>139</td>
<td>1</td>
<td>4</td>
<td>&quot;is&quot; should be &quot;are&quot;.</td>
</tr>
<tr>
<td>141</td>
<td>2</td>
<td>3-4</td>
<td>&quot;AREA&quot; in line 3 should read &quot;AREAS&quot; and &quot;quadrant&quot; in line 4 should read &quot;quadrants&quot;.</td>
</tr>
<tr>
<td>143</td>
<td>fn. 1</td>
<td>102</td>
<td>&quot;North Holland&quot; should follow &quot;Amsterdam&quot;.</td>
</tr>
<tr>
<td>145</td>
<td>fn. 1</td>
<td>5</td>
<td>Between &quot;in&quot; and &quot;the&quot; insert &quot;Supplement to&quot;.</td>
</tr>
<tr>
<td>141</td>
<td>1</td>
<td>17</td>
<td>Remove brackets.</td>
</tr>
<tr>
<td>155</td>
<td>fn. 1</td>
<td>8</td>
<td>&quot;Exemptions&quot; should be spelled &quot;exemptions&quot;.</td>
</tr>
<tr>
<td>152</td>
<td>fn. 3</td>
<td>8</td>
<td>Remove brackets.</td>
</tr>
<tr>
<td>156</td>
<td>fn. 1</td>
<td>1</td>
<td>The method of averaging personal income applied to a portion of income above a fixed amount. This change was brought in during the 1951-2 Budget Speech. (See page 24)</td>
</tr>
<tr>
<td>156</td>
<td>fn. 2</td>
<td>4</td>
<td>Remove brackets.</td>
</tr>
<tr>
<td>157</td>
<td>2</td>
<td>5</td>
<td>Remove brackets. Similarly in footnote 2.</td>
</tr>
<tr>
<td>163</td>
<td>1</td>
<td>1</td>
<td>[ \frac{GF}{(ME - MF) + GF} ] should read [ \frac{-GF}{(ME - MF) - GF} ]</td>
</tr>
<tr>
<td>166</td>
<td>2</td>
<td>11</td>
<td>&quot;Table V-E&quot; should read &quot;V-G&quot;.</td>
</tr>
<tr>
<td>170</td>
<td>3</td>
<td>2</td>
<td>There should be a minus sign before 0.764.</td>
</tr>
<tr>
<td>170</td>
<td>4</td>
<td>4</td>
<td>&quot;Precise&quot; should be spelled &quot;precise&quot;.</td>
</tr>
<tr>
<td>171</td>
<td>fn. 1</td>
<td>2</td>
<td>Remove brackets.</td>
</tr>
<tr>
<td>172</td>
<td>2</td>
<td>5</td>
<td>&quot;Delfationary&quot; should be spelled &quot;deflationary&quot;.</td>
</tr>
<tr>
<td>172</td>
<td>1</td>
<td>1-2</td>
<td>Remove brackets.</td>
</tr>
<tr>
<td>175</td>
<td>fn. 1</td>
<td>1</td>
<td>Delete the s on consumer.</td>
</tr>
<tr>
<td>175</td>
<td>1</td>
<td>1</td>
<td>Remove brackets.</td>
</tr>
<tr>
<td>179</td>
<td>2</td>
<td>2</td>
<td>Substitute &quot;from&quot; for &quot;between&quot;.</td>
</tr>
<tr>
<td>184</td>
<td>1</td>
<td>8</td>
<td>Substitute &quot;were&quot; for &quot;was&quot;.</td>
</tr>
<tr>
<td>188</td>
<td>2</td>
<td>2</td>
<td>Substitute &quot;benefits&quot; for &quot;insurance&quot;.</td>
</tr>
</tbody>
</table>
Remove brackets.

Insert "discretionary" before "anti-discretionary".

Substitute "are" for "is".

"300" should read "200".

1956-57 should read 1956-58.

After "trend", insert "by least squares regression", before the remainder of the sentence.

"does" should be "do".

Remove brackets.

Delete "individuals may opt to" and insert "some individuals are not required by law to pay as they earn and hence they...."
<table>
<thead>
<tr>
<th>Page</th>
<th>Paragraph</th>
<th>Line</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>276</td>
<td>fn. 2</td>
<td></td>
<td>Title of article should be &quot;Problems in the Interpretation of Australian Statistics of Unemployment&quot;.</td>
</tr>
<tr>
<td>278</td>
<td>fn. 1</td>
<td>2</td>
<td>&quot;was&quot; should be &quot;were&quot;.</td>
</tr>
<tr>
<td>280</td>
<td>fn. 1</td>
<td></td>
<td>The footnote should read, &quot;The changes in 1952-53 are based on 1951-52 prices&quot;.</td>
</tr>
<tr>
<td>293</td>
<td>3</td>
<td>7</td>
<td>&quot;Contractors&quot; should be spelled &quot;contractors&quot;.</td>
</tr>
<tr>
<td>294</td>
<td>table</td>
<td></td>
<td>Beneath table heading insert &quot;figures in brackets are months of lag&quot;.</td>
</tr>
<tr>
<td>295</td>
<td>2</td>
<td>2</td>
<td>Delete &quot;can it&quot; and insert &quot;it can&quot;.</td>
</tr>
<tr>
<td>299</td>
<td>1</td>
<td>3</td>
<td>&quot;briefly&quot; should follow &quot;investigate&quot;.</td>
</tr>
<tr>
<td>306</td>
<td>1</td>
<td>20</td>
<td>&quot;is&quot; should be &quot;are&quot;.</td>
</tr>
<tr>
<td>306</td>
<td>fn. 1</td>
<td></td>
<td>Add &quot;page 297&quot; to the footnote.</td>
</tr>
<tr>
<td>307</td>
<td>fn. 1</td>
<td>3</td>
<td>&quot;was&quot; should be &quot;were&quot;.</td>
</tr>
<tr>
<td>313</td>
<td>2</td>
<td>11</td>
<td>Substitute &quot;were&quot; for &quot;was&quot;.</td>
</tr>
<tr>
<td>313</td>
<td>2</td>
<td>12</td>
<td>Substitute &quot;was&quot; for &quot;were&quot;.</td>
</tr>
<tr>
<td>316</td>
<td>1</td>
<td>7</td>
<td>&quot;is&quot; should be &quot;are&quot;.</td>
</tr>
<tr>
<td>340</td>
<td>2</td>
<td>2</td>
<td>This line should read: &quot;...coefficient of inequality $U$ for ... forecasting. A value of $U = 0$ indicates perfect forecasting while $U = 1$ indicates maximum error&quot;.</td>
</tr>
<tr>
<td>340</td>
<td>4</td>
<td>3</td>
<td>Omit semi-colon.</td>
</tr>
<tr>
<td>341</td>
<td>1</td>
<td>4</td>
<td>&quot;Source&quot; should be spelled &quot;sources&quot;.</td>
</tr>
<tr>
<td>342</td>
<td>2</td>
<td>3</td>
<td>Delete &quot;and over&quot;.</td>
</tr>
<tr>
<td>343</td>
<td>3</td>
<td>6</td>
<td>After &quot;effect&quot; insert &quot;of&quot;.</td>
</tr>
<tr>
<td>353</td>
<td>Item</td>
<td>7</td>
<td>Delete &quot;see&quot;.</td>
</tr>
<tr>
<td>353</td>
<td>1</td>
<td>14</td>
<td>&quot;was&quot; should be &quot;were&quot;.</td>
</tr>
<tr>
<td>354</td>
<td>Item</td>
<td>14</td>
<td>&quot;Years&quot; should be spelled &quot;years&quot;.</td>
</tr>
<tr>
<td>354</td>
<td>Item</td>
<td>20</td>
<td>The ratio &quot;imported intermediate goods&quot; gross national expenditure should be bracketed.</td>
</tr>
<tr>
<td>355</td>
<td>Last paragraph</td>
<td></td>
<td>&quot;were&quot; should read &quot;was&quot;.</td>
</tr>
<tr>
<td>361</td>
<td>Item 10</td>
<td></td>
<td>After &quot;investment&quot; add &quot;(excluding dwellings)&quot;.</td>
</tr>
<tr>
<td>368</td>
<td>1</td>
<td>12-13</td>
<td>&quot;substantially&quot; should follow &quot;alter&quot;.</td>
</tr>
</tbody>
</table>
THE PERFORMANCE OF FISCAL STABILISATION
POLICY IN AUSTRALIA, 1948-49 TO 1963-64

by

Douglas A.L. Auld

This thesis was submitted in partial
fulfilment of the requirements for
the degree of Doctor of Philosophy in
The Australian National University

March 1968
This thesis is my own work.

Douglas A.L. Auld
## CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acknowledgements</td>
<td>x</td>
</tr>
<tr>
<td>Symbols and Abbreviations</td>
<td>xii</td>
</tr>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>PART I FISCAL POLICIES IN THE POST-WAR PERIOD</td>
<td></td>
</tr>
<tr>
<td>Chapter I FISCAL POLICY AND INTERNAL INSTABILITIES 1948-49 TO 1963-64: A BRIEF HISTORY</td>
<td>10</td>
</tr>
<tr>
<td>PART II THEORETICAL ASPECTS OF MEASURING FISCAL POLICY PERFORMANCE</td>
<td></td>
</tr>
<tr>
<td>Chapter II BUDGET RESULTS AND FISCAL POLICY ANALYSIS</td>
<td>80</td>
</tr>
<tr>
<td>Chapter III DISCRETIONARY AND AUTOMATIC FISCAL POLICY</td>
<td>102</td>
</tr>
<tr>
<td>Chapter IV OTHER ASPECTS OF MEASURING FISCAL POLICY PERFORMANCE</td>
<td>134</td>
</tr>
<tr>
<td>PART III MEASURES OF AUSTRALIAN FISCAL POLICY PERFORMANCE</td>
<td></td>
</tr>
<tr>
<td>Chapter V THE BUDGET RESULT AS AN INDICATOR OF AUSTRALIAN FISCAL POLICY</td>
<td>145</td>
</tr>
<tr>
<td>Chapter VI STABILISATION ASPECTS OF DISCRETIONARY CHANGES IN EXPENDITURES</td>
<td>178</td>
</tr>
<tr>
<td>Chapter VII STABILISATION ASPECTS OF DISCRETIONARY TAX CHANGES</td>
<td>207</td>
</tr>
<tr>
<td>Chapter VIII AUTOMATIC CHANGES IN BUDGET COMPONENTS AND ECONOMIC STABILISATION</td>
<td>247</td>
</tr>
<tr>
<td>Chapter IX TIME LAGS AND AUSTRALIAN FISCAL POLICY</td>
<td>282</td>
</tr>
<tr>
<td>Chapter X AN APPLICATION OF ECONOMETRICS TO EVALUATE FISCAL TAX POLICY</td>
<td>304</td>
</tr>
<tr>
<td>Chapter XI FISCAL MARKSMANSHIP</td>
<td>322</td>
</tr>
<tr>
<td>PART IV CONCLUSION</td>
<td></td>
</tr>
<tr>
<td>Chapter XII SUMMARY AND CONCLUSIONS</td>
<td>345</td>
</tr>
<tr>
<td>Appendices</td>
<td>353</td>
</tr>
<tr>
<td>Bibliography</td>
<td>371</td>
</tr>
</tbody>
</table>
# Tables

## Chapter I

<table>
<thead>
<tr>
<th>I - A</th>
<th>Commonwealth Budgetary Expenditures and Transfers in Australia 1948-49 to 1952-53</th>
</tr>
</thead>
<tbody>
<tr>
<td>I - B</td>
<td>Revenue Effect of Discretionary Changes in Commonwealth Taxes, 1948-49 to 1952-53</td>
</tr>
<tr>
<td>I - C</td>
<td>Quarterly and Annual Economic Indicators, 1948-49 to 1952-53</td>
</tr>
<tr>
<td>I - E</td>
<td>Commonwealth Budgetary Expenditures and Transfers in Australia 1952-53 to 1955-56</td>
</tr>
<tr>
<td>I - F</td>
<td>Quarterly and Annual Economic Indicators, 1952-53 to 1955-56</td>
</tr>
<tr>
<td>I - G</td>
<td>Commonwealth Budgetary Expenditures and Transfers in Australia, 1955-56 to 1958-59</td>
</tr>
<tr>
<td>I - J</td>
<td>Quarterly and Annual Economic Indicators, 1955-56 to 1958-59</td>
</tr>
<tr>
<td>I - K</td>
<td>Commonwealth Budgetary Expenditures and Transfers in Australia, 1958-59 to 1963-64</td>
</tr>
<tr>
<td>I - N</td>
<td>Quarterly and Annual Economic Indicators, 1958-59 to 1963-64</td>
</tr>
</tbody>
</table>

## Chapter V

<table>
<thead>
<tr>
<th>V - A</th>
<th>Actual and Full Employment Gross National Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>V - C</td>
<td>Built-in and Discretionary Components of Changes in Leverage, 1957-1959</td>
</tr>
<tr>
<td>V - D</td>
<td>Built-in and Discretionary Components of Changes in Leverage, 1961-1963</td>
</tr>
<tr>
<td>V - E</td>
<td>Values of $\alpha_1$, $\alpha_2$, and $\beta$.</td>
</tr>
<tr>
<td>V - F</td>
<td>Statistics Used to Calculate the Friedman Index of Stabilising Performance</td>
</tr>
</tbody>
</table>

Statistics Used in the Analysis of Fiscal Policy Performance During Inflation 172

Changes in the Weighted Budget Result Due to Discretionary Policy and Built-in Tax Response 173

Full Employment Adequacy and Fiscal Policy 177

Chapter VI

Defence Expenditure 1948-49 to 1963-64 180

Current Departmental Expenditures 1948-49 to 1963-64 (Excluding Defence) 183

Weekly Unemployment Benefit for Married Man with Dependant Spouse 185

Weekly Unemployment Benefit in 1948-49 Dollars 186

Unemployment Benefits and Related Statistics, 1948-49 to 1963-64 187

Social Service Payments (Excluding Unemployment Insurance) 189

The Proportion of General Revenue Grants to the States Determined by Formula 191

The Proportion of Specific Purpose Grants to the States Which Are 'Automatically' Determined 191

The Proportion of Specific Purpose Capital Grants to the States Which Are 'Automatically' Determined 192

Commonwealth Grants To Or For the States 197

Subsidies and Grants to Private Sector 198

Commonwealth Outlay for Capital Expenditure in Australia 202a

Deviations From the Trend in Commonwealth Real Domestic Expenditure 205

Chapter VII

Personal Income Tax Revenue 220

Company Income Tax Revenue 228

Sales Tax Revenue 237

Excise Tax Revenue 240
VII - E  Payroll Tax Revenue  243
   - F  Stabilising Impact of Discretionary Tax Changes  245

CHAPTER VIII

VIII - A  Liability Elasticity For Personal Income Tax  250
   - B  Base Elasticity For Personal Income Tax  253
   - C  Built-in Elasticity of Personal Income Tax  255
   - D  Liability Elasticity of Company Income Tax  260
   - E  Tax Base Elasticity of The Company Income Tax  264
   - F  Built-in Elasticity of Company Income Tax  264
   - G  Built-in Elasticity of The Sales Tax  267
   - H  Built-in Elasticity of The Excise Tax  269
   - J  Built-in Elasticity of The Payroll Tax  270
   - K  Built-in Elasticity for All Taxes  271
   - L  Coefficient of Built-in Tax Flexibility  272
   - M  Built-in Marginal Response of Particular Taxes and Total Tax Liability  274
   - N  Coefficient of Built-in Flexibility for Unemployment Benefits  278
   - O  Automatic Change in Social Service Payments and Grants to the States  280

Chapter IX

IX - A  Inter-Budgetary Fiscal Measures  289
   - B  Estimates of the Administrative Lag for Changes in Tax Policy  294
   - C  Estimates of the Inside Lags for Changes in Tax Policy  296
   - D  Estimated Total Time Lag for Discretionary Fiscal Policy  301

Chapter XI

XI - A  Linear Relationship Between Predicted and Actual Tax Revenues  332
| Chapter I | XI - B | Type of Error for Various Tax Estimates | 336 |
| - C | Linear Relationship Between Predicted and Actual Expenditures | 336 |
| - D | Type of Error for Various Expenditure Estimates | 337 |
| - E | Values of $\theta$ For Various Taxes | 340 |
| - F | Values of the Component of $\theta$ For Tax Estimates | 341 |
| - G | Values of $\theta$ For Various Expenditures | 341 |
| - H | Values of the Components of $\theta$ For Expenditure Estimates | 342 |

**Diagrams**

**Chapter I**

| I - A | Selected Economic Indicators, 1948-49 to 1952-53 | 22 |
| - B | Selected Economic Indicators, 1952-53 to 1955-56 | 42 |
| - C | Selected Economic Indicators, 1955-56 to 1958-59 | 58 |
| - D | Selected Economic Indicators, 1958-59 to 1963-64 | 76 |

**Chapter II**

| II - A | Derivation of $\alpha_1$ | 93 |
| - B | Derivation of $\alpha_2$ | 94 |
| - C | Derivation of $\delta$ | 97 |

**Chapter III**

| III - A | The Full Employment Budget Surplus | 109 |

**Chapter IV**

| IV - A | The Application of Linear Regression to Measuring Fiscal Accuracy | 142 |

**Chapter V**

| V - A | Changes in Leverage and G.N.P. 1952-54 | 151 |
| - B | Changes in Leverage and G.N.P. 1957-59 | 154 |
| - C | Changes in Leverage and G.N.P. 1961-63 | 158 |
V - E  Changes in Leverage and G.N.P. in relation to full employment G.N.P. 1957-59  163
- F  Changes in Leverage and G.N.P. in Relation to full employment G.N.P. 1961-63  164
- G  G.N.P. less Leverage  167
- H  Absolute Value of Leverage  168

Chapter VI

VI - A  Commonwealth Grants To or For the States  193
- B  Discretionary Commonwealth Grants to the States as a Percentage of Total Grants  194
- C  Commonwealth Budget Capital Expenditures  200
- D  Annual Percentage Change in Public and Private Real Capital Spending  202
- E  Commonwealth Budgetary Expenditures and Transfers in Australia  204

Chapter VII

VII - A  Personal Income Tax as a Percentage of Total Personal Income Before and After Discretionary Tax Changes  219
- B  Company Income Tax Paid as a Percentage of Company Income (in the Year the Tax Is Paid) Before and After Discretionary Tax Changes  227
- C  The Effective Rate of Sales Tax Before and After Discretionary Tax Changes  236
- D  Payroll Tax Revenue as a Percentage of Wages Paid by Payroll Taxpayers Before and After Discretionary Tax Changes  242
- E  Total Tax Revenue as a Percentage of Gross National Expenditure Before and After Discretionary Tax Changes  246

Chapter VIII

VIII - A  The Relationship Between Personal Income Taxable Income and Deductions/Exemptions  252
- B  G.N.P., Company Income and Company Income Before Deductions as a Percentage of the Prerecession Peak  263
- C  Commonwealth Unemployment Benefits, 1950-51 to 1963-64, Quarterly Payments  277
Chapter IX

IX - A  Percentage of Personal Income Tax Revenue Collected Through Instalment Payments  

Chapter XI

XI - A  Errors in Forecasting Tax Revenues  

- B  Average Errors in Forecasting Tax Revenues, (i) to (iii) 1949-50 to 1956-57 Compared with 1957-58 to 1963-64, (iv) to (vi).  

- C  Errors in Estimating Expenditures  


- E  Linear Relationship Between the Predicted and Actual Change in Total Tax Revenue, 1949-50 to 1963-64  

- F  Linear Relationship Between the Predicted and Actual Change in Total Tax Revenue, 1949-50 to 1956-57  

- G  Linear Relationship Between the Predicted and Actual Change in Total Tax Revenue 1957-58 to 1963-64  

- H  Linear Relationship Between the Predicted and Actual Change in Total Expenditure, 1949-50 to 1963-64  

- J  Linear Relationship Between the Predicted and Actual Change in Total Expenditure, 1949-50 to 1956-57  

- K  Linear Relationship Between the Predicted and Actual Change in Total Expenditure, 1957-58 to 1963-64
ACKNOWLEDGEMENTS

This thesis is the product of two and one-half years of research at the Australian National University. The research, carried out in the Department of Accounting and Public Finance in the School of General Studies, was made possible through the generous scholarship provided by the University. It has been a delightful experience to work in an institution which has accommodated me with such excellent facilities.

My greatest debt over this period is to my supervisor, Mr John Head. Not only did he guide me through a number of difficult areas of research, but his weekly seminar classes during 1966 considerably stimulated my interest in Public Finance. I would like to thank the Head of the Department, Professor Russell Mathews, for his interest in my work, and for reading earlier drafts of certain chapters of the thesis. Mr Robert Jay was extremely helpful in solving many problems relating to national accounting and budget data. Without his advice, which, to an overseas person was invaluable, the statistical research would have been extremely difficult.

A number of colleagues, both in the School of General Studies and the Institute of Advanced Studies, offered helpful advice on numerous occasions. I would especially like to thank Professor John Pitchford and Professor Burgess Cameron who were always willing to discuss theoretical and empirical problems with me. Dr Conrad Blyth in the Research School of Pacific Studies offered helpful criticism on earlier drafts of Chapter X and Section (b) of Chapter IX. Professor Heinz Arndt was kind enough to discuss an earlier draft of Chapter V.
with me. Mr Antony Waterman, a fellow scholar in the Research School of Social Sciences, was a valuable colleague, and, during 1966, we had a number of worthwhile discussions about post-war economic development in Australia. I also profited from discussions with another colleague, Mr Geoffrey Brennan of my own Department.

In December of 1967, I was the guest of Mr Robert Wallace of Flinders University for two days. We had several informal discussions about Australian fiscal policy which I very much appreciated. I would also like to express my thanks to those who attended the University of Adelaide-Flinders University Staff Seminar and commented on my paper which was based on the results of research presented in Chapter VIII.

There were other individuals whose advice and assistance over the past two years was most welcome. Mr R. Daniels of the Treasury discussed Chapter IX with me in detail. Mr K. Archer, the Commonwealth Statistician, was very helpful in providing me with sources of statistical data and background material. The Department of Social Services and the Department of Labour and National Service were always willing to answer my questions on the publication of data. With the help of these and other persons, my research was considerably facilitated.
SYMBOLS USED IN CHAPTERS V TO XI

Chapter V

Y = gross national product (G.N.P.)
BR = budget result
L = fiscal leverage
Ge = Commonwealth expenditure in Australia on goods and services
G1 = Commonwealth interest payments to Australian holders of Commonwealth securities
Gb = subsidies and grants to the private sector
Gp = cash benefits to Australians (excluding Gb)
Gl = loans for state works and housing plus other loans for capital works
Gm = estimated import content of government spending
Tc = company income tax receipts
to = receipts from other taxes
k = disposable income multiplier
a1 = Musgrave coefficient of fiscal performance
a2 = Musgrave coefficient of fiscal performance
GNPF = full employment gross national product
i = coefficient of full employment fiscal performance
X(t) = the level of national income in the absence of a full employment policy
Z(t) = full employment policy
X' = a series of trend values for X
x = deviations of X from X'
z = deviations of Z from means value of Z series
σx = standard deviation of x series
σz = standard deviation of z series
Rxz = correlation coefficient between x and z
P = consumer price index
L1 = demand for labour index
R = correlation coefficient
Mfa = the implicit weighted budget result at full employment G.N.P.
$M_{fn} = \text{the weighted budget result needed to reach full employment G.N.P.}$

$M_a = \text{actual weighted budget result}$

**Chapter VI**

$W = \text{annual wages and salaries in Australia}$

$R' = \text{rank correlation coefficient}$

**Chapter VIII**

$E^P = \text{built-in elasticity of the personal income tax}$

$T^P = \text{personal income tax}$

$E^P_{1} = \text{the liability elasticity of the personal income tax}$

$B^P = \text{taxable personal income}$

$E^P_{b1} = \text{tax base elasticity of the personal income tax}$

$E^P_{b2} = \text{a component of } E^P_{b}; \text{the built-in elasticity of taxable personal income with respect to total personal income}$

$E^P_{b3} = \text{a component of } E^P_{b}; \text{the built-in elasticity of total personal income with respect to G.N.P.}$

$t^P_0 = \text{the ratio of personal income tax to G.N.P. in the initial period}$

$E^C = \text{the built-in elasticity of the company income tax}$

$T_c = \text{company income tax}$

$E^C_{1} = \text{the liability elasticity of the company income tax}$

$E^C_{b} = \text{the tax base elasticity of the company income tax}$

$B^C = \text{taxable or net company income}$

$t^C_0 = \text{the ratio of company income tax to G.N.P. in the initial period}$

$E^S = \text{built-in elasticity of the sales tax}$

$T_s = \text{sales tax revenue}$

$E^S_{1} = \text{the built-in elasticity of sales tax revenue with respect to the sale of taxable goods}$

$E^S_{b} = \text{the built-in elasticity of the sale of taxable goods with respect to changes in G.N.P.}$

$B_s = \text{net value of goods sold subject to the sales tax}$
\[ \Delta Y_h \] = the hypothetical change in G.N.P. given no change in leverage  
\[ t_{x0}^s \] = the ratio of sales tax revenue to G.N.P. in the initial period  
\[ E^x \] = the built-in elasticity of the excise tax  
\[ T_x \] = excise tax revenue  
\[ t_{x0}^e \] = the ratio of excise tax revenue to G.N.P. in the initial period  
\[ E^e \] = the built-in elasticity of the payroll tax  
\[ T_e \] = payroll tax revenue  
\[ t_{e0}^e \] = the ratio of payroll tax revenue to G.N.P. in the initial period  
\[ E \] = the built-in elasticity of total tax revenue  
\[ \beta_1 \] = the coefficient of built-in tax flexibility for total tax revenue (on a payment basis)  
\[ \beta_2 \] = the same as \( \beta_1 \) (on a payment/accrual basis)  
\[ \mu \] = the coefficient of built-in flexibility for unemployment benefits  
\[ E_{u} \] = the built-in elasticity of unemployment benefits  
\[ r_{u} \] = the ratio of unemployment benefits to G.N.P. in the initial period

Chapter IX

\[ C \] = personal consumption expenditure  
\[ Y_d \] = personal disposable income  
\[ C_d \] = personal consumption expenditure on durable goods  
\[ Q_i \] = (where \( i = 1, 2 \) or 3) dummy variables to represent quarterly time periods  
\[ O \] = A.N.Z. index of factory production  
\[ R^s \] = volume of retail sales in Australia  
\[ O^{MV} \] = index of automobile production (A.N.Z.)  
\[ R^{MV} \] = real value of retail sales of automobiles  
\[ E^F \] = employment in factories

Chapter X

\[ C \] = personal consumption expenditure in 1948-49 dollars
\[ Y \] = personal disposable income in 1948-49 dollars

\[ H \] = instalment credit for retail sales, excluding machinery and plant equipment

\[ H \] = above in 1948-49 dollars

\[ T_P \] = total personal income tax revenue

\[ Y_d \] = change in personal disposable income owing to a change in personal income tax legislation (in 1948-49 dollars)

\[ Y_d \] = change in personal disposable income owing to a change in all other factors except the change due to tax policy changes (in 1948-49 dollars)

\[ T_i \] = the estimated increase in personal disposable income brought about by a change in tax legislation

\[ T_r \] = the estimated reduction in personal disposable income brought about by a change in tax legislation

\[ T_{pi} \] = same as above in 1948-49 dollars

\[ T_{ri} \] = same as above in 1948-49 dollars

\[ T_{ps} \] = the estimated reduction in Commonwealth sales tax revenue owing to a change in legislation

\[ T_{is} \] = the estimated increase in Commonwealth sales tax revenue owing to a change in legislation

\[ T_{is} \] = same as above in 1948-49 dollars

\[ C_d \] = personal consumption expenditure on durables in 1948-49 dollars

Chapter XI

\[ P_{pi} \] = predicted percentage change in personal income tax revenue

\[ A_{pi} \] = actual percentage change in personal income tax revenue

The subscripts ci, s, e, c, ot and t denote similar changes for company income tax, sales tax, excise tax, customs duties, other taxes and total tax revenue respectively.

\[ P_d \] = predicted percentage change in defence expenditure

\[ A_d \] = actual percentage change in defence expenditure

The subscripts w, k, s, os and ex denote similar changes for social services, capital works, grants to the states, other and total spending.
\[ n = \text{number of observations or years of predicted and actual change in taxation or expenditure} \]
\[ \theta = \text{Theil's coefficient of inequality} \]
\[ \theta_j = \text{the proportion of total error in predicting due to over- and under-estimation of the average change} \]
\[ \theta_k = \text{the proportion of total error due to over- and under-estimation of the variance of the change} \]
\[ \theta_m = \text{the proportion of the error which is random} \]

**ABBREVIATIONS**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.E.P.</td>
<td>Australian Economic Papers</td>
</tr>
<tr>
<td>A.E.R.</td>
<td>American Economic Review</td>
</tr>
<tr>
<td>A.F.R.</td>
<td>Australian Financial Review</td>
</tr>
<tr>
<td>A.N.Z. Bank</td>
<td>Australia and New Zealand Bank</td>
</tr>
<tr>
<td>A.S.A.</td>
<td>American Statistical Association</td>
</tr>
<tr>
<td>C. of A.</td>
<td>Commonwealth of Australia</td>
</tr>
<tr>
<td>C.B.A.R.</td>
<td>Commonwealth Bank Annual Report</td>
</tr>
<tr>
<td>C.B.C.S.</td>
<td>Commonwealth Bureau of Census and Statistics</td>
</tr>
<tr>
<td>E.R.</td>
<td>Economic Record</td>
</tr>
<tr>
<td>J.P.E.</td>
<td>Journal of Political Economy</td>
</tr>
<tr>
<td>M.P.C.</td>
<td>marginal propensity to consume</td>
</tr>
<tr>
<td>N.T.J.</td>
<td>National Tax Journal</td>
</tr>
<tr>
<td>O.E.P.</td>
<td>Oxford Economic Papers</td>
</tr>
<tr>
<td>P.F.</td>
<td>Public Finance</td>
</tr>
<tr>
<td>Q.J.E.</td>
<td>Quarterly Journal of Economics</td>
</tr>
<tr>
<td>R.B.A.R.</td>
<td>Reserve Bank Annual Report</td>
</tr>
<tr>
<td>T.I.B.</td>
<td>Treasury Information Bulletin</td>
</tr>
</tbody>
</table>
This thesis appraises the performance of the Commonwealth Government in mitigating fluctuations in domestic prices and employment through the use of taxation and expenditure policies in the post-war period. In general terms, this area of public policy is often referred to as fiscal stabilisation policy or simply fiscal policy. The two objectives of fiscal policy which will be examined are stable prices and full employment. For Australia, full employment will mean the gainful employment of 98.0 to 99.0 per cent of the total workforce. A rate of employment below 98.0 per cent represents under-full employment and the waste of resources. A rate in excess of 99.0 per cent represents over-full employment, and the creation of excess demand pressure and inflation. The term full employment is, of course, compatible with some degree of seasonal and frictional unemployment. Stable prices will mean an annual increase in consumer prices of less than 2.5 per cent. Price stability refers to a 'stable' level of average prices and is compatible with quality or preference-induced price changes in particular goods and services.

By applying the term 'stabilisation' to this area of public policy, it is in no way suggested that the level of national or per capita income should be stable over time. Fiscal policy can be viewed as a balancing factor in the economy, helping to promote a stable rate of real economic growth.

Before proceeding to examine the question of how the performance of fiscal policy can (and cannot) be measured,
it will be useful to briefly consider why these objectives are desirable and how, in general, fiscal policies can be formulated to gain these objectives. Full employment is an obvious social, economic and political goal. High levels of sustained unemployment create hardships, and there is a certain loss of dignity for many individuals if they must continually rely upon unemployment insurance to support their families. In economic terms, unemployment means an irreplaceable loss of output for the economy. From the political point of view, full employment means one less problem that the politicians have to contend with. Long before the concept of counter-cyclical fiscal policy was envisaged, governments were sometimes 'blamed' for recessions and unemployment. As long as the government taxes the citizens of the state, they will expect the government to maintain full employment.¹

Although rising prices may benefit those whose incomes are rising ahead of the price rise, inflation is harmful to those on fixed incomes or incomes that rise more slowly than prices. Debtors benefit from inflation at the expense of creditors, the extent of the redistribution depending on the rate and duration of the price rise. In general, price inflation forces an arbitrary redistribution of income upon the economy.

Fiscal policy has been described as a branch of public finance which emphasizes the conscious use of government expenditure and taxation to secure full

¹ During the late 1870's, the effect of the world-wide depression on Canada was enough to all but destroy the government. See Bruce Hutchison's Mr Prime Minister, chapter 3 (Longmans, Toronto, 1964).
employment and stable prices. By 'conscious use', it is implied that the government is aware of the impact of its present structure of expenditure and revenue on the economy, and is in a position to adjust this structure for the purpose of increasing, decreasing or maintaining constant, the level of effective demand in the economy. When a situation of less than full employment develops, government expenditure and/or revenues should be adjusted in such a manner that aggregate demand is raised to the level where the output of a fully-employed economy is purchased. During price inflation, expenditure and revenue should be changed to ensure that the level of demand is reduced to where it equals the value of output at current fixed prices.

This 'conscious' use of public finance to promote full employment and stable prices can be achieved in many ways but they can be classified into two broad categories. First, the expenditure-revenue structure of the government can be formulated in such a way that it will adjust automatically to dampen a boom or cushion a recession. Secondly, the government can bring about changes in expenditure and taxes through changes in existing legislation. This may take a form of adjusting tax rates or exemptions, or deciding to accelerate (or retard) the rate of current and capital expenditures.

The automatic or built-in forces work in the following manner. Consider an economy which is expanding at a constant full employment rate of growth. Suppose that at some point in time, new additions to the labour force begin to find it difficult to secure employment as

---

demand and subsequently output are reduced. If there is an unemployment insurance scheme which has wide coverage, payments to jobless individuals soon increase, partially offsetting the loss in wages resulting from the less-than-full-employment situation. If there is a progressive personal income tax, a decline in personal incomes induces a proportionately greater decline in tax liability, helping to maintain the level of disposable income.

Such automatic adjustments are not likely to be sufficient to raise the level of demand and output to the previous full employment level. Discretionary policies should therefore be used to supplement built-in adjustments. These may take the form of a change in tax legislation, a change in expenditure or a change in both, in such a manner as to exert an expansionary or deflationary impact on the economy.

The advantage of the built-in adjustment lies in its automaticity. For example, if there is no long probation period before the unemployed receive benefits, the payments are immediately sensitive to changes in employment. Even though it has been theoretically demonstrated that some built-in features could be destabilising under certain conditions, it is generally recognised that built-in features of the budget help to mitigate severe fluctuations in economic activity.

---

1 This could be brought about for example by a sudden decline in export demand.


Discretionary policies are useful since they can be directed towards specific areas or sectors of the economy. In addition, their magnitude can be controlled to some extent. The primary shortcoming is the lag between recognising an economic disturbance and implementing counter-cyclical measures. If the lag is long, the impact of the discretionary policies may occur too late to prevent a sharp increase in unemployment or prices.

It must be remembered that fiscal stabilisation policy cannot be isolated from other objectives of public policy. Economic growth is certainly an objective of government policy but fiscal and other measures designed to encourage growth may conflict with stabilisation policy. A re-allocation of resources may be desirable from the government's point of view, and tax measures may be introduced to achieve or at least encourage this course. They may, however, lead to temporary instabilities in the labour market. In an open economy, fiscal policy management may have to carefully consider the external economic position of the country. Finally, fiscal policy must be conscious of promoting or maintaining some degree of equity among geographical regions and individuals.

Each of these objectives and the policies to achieve them were constantly alluded to and described by the Australian Government, especially in the annual Budget Speech. In two particular instances, the Government expressed its concern that excessive spending on consumer goods was hampering the progress of public works through a

1 Discretionary policies may, by virtue of their magnitude, be destabilising. Extremely restrictive tax measures during a boom can possibly lead to drastic reductions in private consumption and investment, precipitating a recession. One of the main problems of discretionary tax policy is trying to estimate the response of the private sector.
misallocation of resources. It was argued that scarce supplies of labour and other resources were being utilised for the production of 'luxury' consumer goods for which there was strong demand. This was forcing the postponement of essential public works. Measures were proposed to decrease such consumption and free resources for more essential production. The personal income tax change of 1953-54 was a tax reform measure to reduce the progressivity of the rate structure. Allowances to mining companies and special tax treatment for oil and gas exploration are examples of fiscal policy to encourage growth and development in particular sectors of the economy. Stability 'is not by itself a sufficient goal', the Government should 'as far as its powers and resources allow, promote a condition of progress combined with stability'.

In addition to the economic goals of steady growth, efficient resource allocation and some standard of fiscal equity, there were certain social and political objectives which impeded the operation of the stabilisation branch of fiscal policy. These can be described in terms of the social and institutional framework of Australia, certain basic annual commitments, an immigration policy and the political aspects of budget policy.

Australian people possess a good deal of freedom in terms of where they live, what they purchase and how they work. They may decide to live in remote areas or densely

---

3 Fadden, B.S., 1958-9 and 1959-'60.
4 Fadden, B.S., 1953-4 and 1959-'60, p.3 (for both references).
populated urban centres. Above a certain subsistence level, they can decide within the limits of their credit and purchasing power, what goods to buy and how much to save. Many have the opportunity of changing employment or employers. Decisions to invest in stocks, expand capacity and seek new markets will largely be based on personal expectations. These freedoms may not be conducive to a perfect internally stable economy, but, given that they are highly cherished and desired, fiscal policy had to function within this constraint. It might be argued that control over these 'freedoms' would all but eliminate the need for stabilisation.

Expenditure on defence, social services and other government operations placed a restraint on fiscal policy by limiting the flexibility of a large portion of budget expenditure. Depending on world conditions, the defence component was increased substantially within one or two years. Social services and payments to the states are variable but were subject to a politically tolerable minimum. Expenditure policy, which was an important part of overall budget stabilisation policy was thus constrained by certain levels of spending which had to be taken as datum in framing policy.

From the early nineteen fifties to 1963-64, the immigration policy of the federal government became more flexible (more out of necessity than desire), with respect to the annual inflow of persons. In the light of the unemployment in 1952-53, a decision was made "to reduce the intake of migrants."1 Four years later, a target of one per cent of population was set for the gross inflow of persons, the actual numbering being reviewed "in the light

1 Fadden, B.S., 1952-3, p.6.
of economic conditions."\(^1\) The flow of immigrants would be adjustable but it is doubtful if the level of persons admitted could have been reduced below 50,000 per year. Thus the social policy of the government placed some constraint on the flexibility of stabilisation policy.

Finally, the political process itself. The fact that the decision-makers of budget policy had to rely upon votes for their position is a constraint. It is always easy for the politician to advocate tax reductions and increased transfers before an election, or withhold increases when they are necessary.\(^2\) Reduced spending and higher taxes are unpopular, and the reluctance to implement such measures partially explains the unfortunate lag between the need for and legislation of unpopular policies.

It appears that the selection of fiscal policies and their effectiveness in maintaining full employment and stable prices were constrained by a number of factors. The task which follows is an examination of the fiscal policies adopted by the Commonwealth Government between 1948-49 and 1963-64. In evaluating the performance of these fiscal measures, some of the problems, endemic to Australian fiscal policy, will be highlighted. Part I is a brief history of the main economic developments of this period and the fiscal policies which were adopted. Part II discusses the theory and technique of measuring fiscal performance. The first chapter of this Part is concerned with the budget result and fiscal policy. Chapter III examines the question of automatic and discretionary fiscal policy. Further aspects of measuring performance

---

2. The Budget Speeches of 1949-50 and 1955-56 preceded federal elections. In both years, a case could be made for anti-inflationary tax increases.
are outlined in Chapter IV. Part III is devoted to an application of the techniques, discussed in Part II, to the Australian economy. Conclusions are presented in Part IV.
PART I

FISCAL POLICIES IN THE POST-WAR PERIOD


The trend in unemployment is underestimated by traditional measures. The seasonally adjusted unemployment rate for Australia, as shown in the table above, is much lower than the actual unemployment. The gap between these two measures is called the "natural" unemployment. To reduce the gap between 0 and 1, the government embarked on a large-scale program of infrastructure development, financed by borrowing from the Bank of America following the Australian Reserve Bank's "Operation Manpower". The Bank of America is a major player in the U.S. economy, and has become a major lender to countries in the region. Its involvement in the region has been significant, particularly in the area of infrastructure development. The Bank of America has invested heavily in projects in the region, including roads, bridges, airports, and other infrastructure. This has been done through the Bank's own lending, as well as through its role as a lender to other institutions. The Bank has also provided technical assistance and other forms of support to countries in the region, in addition to its financial investments. The Bank of America has been a major player in the region, and its involvement has been significant in terms of both financial and technical support. The Bank has played a key role in the development of infrastructure in the region, and has been a major contributor to the region's economic growth. The Bank's involvement has been significant, and its role in the region's development has been important.
CHAPTER I

FISCAL POLICY AND INTERNAL INSTABILITIES

1948-49 TO 1963-64: A BRIEF HISTORY

During the sixteen year period from 1948-49 to 1963-64, the internal balance of the Australian economy was disrupted by three relatively mild recessions, each preceded by domestic price inflation. The recessions were increasingly severe or prolonged in terms of the number of registered unemployed relative to the jobs available while the periods of price inflation were progressively less pronounced. Australia's balance of payments was inextricably linked with these instabilities in domestic prices and unemployment. Indeed, external disturbances were one of the causes of internal instability. External problems complicated the approach to achieving and maintaining internal stability.

1 Using real G.N.P. as the indicator, the trough of these recessions were the financial years 1952-53, 1957-58 and 1961-62. The price inflation reached its peaks in 1951-52, 1956-57 and 1960-61, using the annual change in the Consumer Price Index. (Base year 1948-49 = 100).

2 The trend in unemployment is illustrated by Professor Hancock's demand for labour index, \((100 - U + V)/100\) where \(U\) is registered unemployed and \(V\) registered vacancies. See K. Hancock, 'The Australian Economy, February, 1963', Economic Record (E.R.), March, 1963 and the same author's 'Unemployment in Australia', Eighth School of Business Administration 1963, University of Adelaide. By graphing \(U\) and \(V\) on a monthly, deseasonalised basis and setting \(U = V\) as full employment, the gap between \(U\) and \(V\) increases in each recession. See A.M.C. Waterman, Fluctuations in the Rate of Growth: Australia 1948-49 to 1963-64. Draft of Ph.D Thesis, A.N.U., 1967, Appendix A.

3 Early post-war price inflation was stimulated by the sudden increase in the world price for wool, which not only gave farmers considerable purchasing power but created an expansion of the money supply as international reserves increased rapidly.

the use of fiscal, monetary and direct controls, internal and external balance were achieved in only two or three years.¹

Fiscal policy, as a method of achieving internal stability, became increasingly popular immediately following the Second World War, as the Commonwealth anticipated substantial increases in unemployment. The Commonwealth's position was enunciated in the Parliamentary document Full Employment in Australia.² The importance of a full employment policy is stressed in the opening sentence: 'Full employment is a fundamental aim of the Commonwealth Government⁴, to be achieved by 'stimulating spending on goods and services to the extent necessary to sustain full employment'.³ The document argued that, 'public capital expenditure is the principal type of expenditure that can be readily varied to offset the variation in the unstable parts of expenditure'.¹ Private consumption expenditure, the document continued, could not easily be varied to offset temporary fluctuations in other

¹ According to the Budget Speeches of 1954-55 and 1964-65, the years 1953-54 and 1963-64 were periods of external and internal balance. The latter part of 1956-57 was also considered to be a period of stability according to the 1957-58 Budget Speech. From the analysis of economic conditions presented in the Annual Reports of the Commonwealth Bank of Australia (1948 to 1959) and the Reserve Bank of Australia (1959 to 1965), overall stability was achieved in the last half of 1953-54 and first half of 1954-55 and in 1959-60. Judging from academic opinion, stability had been achieved in the first half of 1959-60 and the second half of 1962-63. The year 1963-64 was also considered to represent general stability. See I. Bowen, 'The Australian Economy July 1960', E.R., August, 1960; H. Edwards and N. Drane, 'The Australian Economy', E.R., July, 1963 and B.L. Johns, 'The Australian Economy September 1964', E.R., September, 1964.

³ Ibid., p.1.
⁴ Ibid., p.5.
types of spending, except in a limited manner by transfer payments to those with a high propensity to spend.

Although the document deals to a large extent with policies to achieve full employment, there are occasional references to the dangers of over-spending and domestic price inflation. Because of this possibility, the government must 'ensure that total expenditure is not too high' since 'a high level of expenditure would then cause prices to rise with adverse effects on the stability of the economy'. In Part 4 of the document, consideration is given to special problems of full employment policy, one of these being the necessity to carefully plan expenditures to avoid inflation. 'Experience', states the document, 'will progressively improve the technique of this planning'. The policy to maintain full employment was clearly expenditure-oriented and it is implied that variations in spending would be the effective means of preventing inflation. Taxes were the main source of revenue and a means of redistributing income in the community but were (apparently) not regarded as a significant fiscal policy weapon.

The desired objective of full employment by itself, was not a formidable one but in combination with stable prices, it rarely occurred, despite the use of expenditure and other fiscal and monetary policies. Only in periods of external balance during the post-war era was there internal balance as well, reflecting the inter-relationship between internal and external economic conditions in Australia.

1 Ibid., p.6.
2 Ibid., p.9.
(a) INFLATION AND RECESSION, 1948-49 TO 1952-53

During the first four years of this period, the Australian economy suffered from severe inflation as domestic prices increased by 68 per cent from September 1948 to June 1952. In the fourth quarter of 1950-51, the rate of increase reached a peak of 28 per cent per annum.\(^1\)

Wages, which were tied to a cost-of-living index until 1953, increased by 73 per cent in the four year period.\(^2\)

This inflation of prices and wages was accompanied by an acute shortage of labour and supplies as well as extraordinary favourable terms of trade from the March quarter of 1950 to that of September 1951. A simple index of the demand for labour shows that the shortage of labour, which was prevalent until 1952-53, reached its peak in the last quarter of 1950-51.\(^3\)

The favourable terms of trade were the result of export prices, mainly those of wool, increasing at a much greater rate than import prices which themselves rose almost 50 per cent in this period. Export prices, however, increased about 180 per cent between the first quarter of 1949-50 and the third quarter of 1950-51.

The inflation was sustained by a combination of internal and external instabilities. The *Commonwealth Bank of Australia Report* listed the major causes as high personal incomes, post-war public and private investment demands, rising import prices and insufficient supplies of

---

1. See Diagram I-A.
3. See Diagram I-A. The data used are based on the month at the end of the quarter and are adjusted by the appropriate seasonal correctors for that month. See Dr A.P. Hall, *Australian Financial Review*, Nov. 11, 1966.
The Prime Minister summed up the cause of the inflation in the 1948-49 Budget Speech by saying that 'the supply of many commodities is failing to keep pace with demand...'. The following year, Sir Douglas Copland listed the 'fundamental causes' of inflation as high export prices, high import prices, heavy investment and low productivity. The first and third of these contributed to excess demand and, combined with low productivity, brought on strong demand-pull inflationary pressures. The high import prices aggravated the situation by contributing cost-push elements to the process. Although investment expenditure was placing pressure on resources, the desired level was not excessive. The problem, he argued, was an acute shortage of resources to proceed with the necessary expansion. Unless savings could be increased, voluntarily or through taxation, 'investment will have to be considerably reduced...if we are to bridge a very serious inflationary gap'.

By early 1951, wool prices were extremely high and it was obvious that there would be an unprecedented rise in farm income during the year. The resulting demand-induced inflation was reflected in the sudden increase in wages, the net effect being 'an upward flexibility in prices and costs which operates to a high degree'. The detrimental

---

3 Sir Douglas Copland, Inflation and the Australian Economy, Address to Trades Hall Council, Melbourne, Nov. 16, 1950.
4 Copland, A Report on the Australian Economy, 1950, p.6 (manuscript).
5 Copland, Inflation and Expansion, Melbourne, Cheshire, 1951, p.122.
6 Karmel and Brunt, op. cit., p.133.
effect of the automatic wage adjustment on the inflation was noted elsewhere. Professor Copland argued that this link had facilitated the wage-price spiral. The 1950 C.B.A.R. diagnosed the inflation as arising from demands that stem from or operate 'largely through increased pressure for and willingness to grant, wage increases'.

A similar position was maintained by the Bank the following year. Not until 1952-53 did the Budget Speech explicitly recognise the importance of this link and even then the Treasurer said that it would be 'idle and wrong' to discuss the issue. Another reason for the cost inflation was the steady rise in the price of imports. This question received only limited attention by most people except Professor T.W. Swan who argued that a large part of the inflation could be attributed to the cost of imports.

The Budget Speech of 1948-49 stressed the lack of supplies relative to demand as the determining factor in the present inflation. The next year, the Government stated that some rise in prices was 'inevitable...when the demand for goods has increased so much faster than supplies could possibly have done.' The Budget of 1950-51, the first of the newly-elected Government, assessed the economic situation as one of an 'increasing surplus of purchasing power in the hands of the public' which had stimulated investment...so intensifying competition for

2 Fadden, B.S. 1952-53, p.2. In 1950-51, the Treasurer simply noted that wages and prices increased in a 'cumulative manner'.
4 Chifley, B.S. 1949-50, p.4.
resources already too scarce to go around.\textsuperscript{1} At the height of the inflation, the Government summed up the problem as a 'disproportion between money demand for... and supply of goods and services'.\textsuperscript{2}

Fiscal policy involved substantial changes in Commonwealth expenditure in these years. The following figures for Commonwealth budgetary spending are on a National Accounts basis. They are divided into current and capital expenditures and deflated to reflect real spending. They have been adjusted so as to reflect actual expenditure on Australian goods and services or actual transfer payments to Australian residents, companies and other levels of government. The adjustments and the deflators employed to obtain real value spending are described elsewhere in detail.\textsuperscript{3}

\textbf{TABLE I-A}

\textbf{COMMONWEALTH BUDGETARY EXPENDITURE AND TRANSFERS IN AUSTRALIA 1948-49 TO 1952-53 (Millions of 1948-49 dollars)}

<table>
<thead>
<tr>
<th>Year</th>
<th>Category of Expenditure</th>
<th>Current (i)</th>
<th>Capital (ii)</th>
<th>Total</th>
<th>Percentage Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1948-49</td>
<td></td>
<td>627</td>
<td>34</td>
<td>120</td>
<td>781</td>
</tr>
<tr>
<td>1949-50</td>
<td></td>
<td>659</td>
<td>42</td>
<td>158</td>
<td>859</td>
</tr>
<tr>
<td>1950-51</td>
<td></td>
<td>822</td>
<td>50</td>
<td>248</td>
<td>1120</td>
</tr>
<tr>
<td>1951-52</td>
<td></td>
<td>713</td>
<td>49</td>
<td>291</td>
<td>1053</td>
</tr>
<tr>
<td>1952-53</td>
<td></td>
<td>758</td>
<td>49</td>
<td>243</td>
<td>1050</td>
</tr>
</tbody>
</table>

(i) Fixed Capital Expenditure on New Assets
(ii) Loans for Capital Works and Housing

Expenditure increases in 1949-50 occurred in every category, the largest rise being that of loans for capital works and housing. More than 80 per cent of this increase

\textsuperscript{1} Fadden, B.S., 1950-51, p.2.
\textsuperscript{2} Fadden, B.S., 1951-52, p.2.
\textsuperscript{3} See Appendix A.
was for the States' works and housing program. As a proportion of gross domestic expenditure (G.D.E.), budgetary spending remained virtually constant.¹ In the next year, there was a rise in loan fund allocations for the States of 60 per cent in addition to a substantial rise in current expenditure. These increases brought the share of Commonwealth expenditure to G.D.E. up to 27.9 per cent. The deflationary aspect of budgetary spending in 1951-52 was a $109 m. reduction in current expenditures, which more than offset the rise in capital spending. As a percentage of G.D.E., Commonwealth budgetary spending declined to 25.9.

It can be argued that there was a need for social service spending and public investment programs that had been neglected because of the war. In addition, the Government's immigration plan, combined with the necessity of increasing defence spending made it virtually impossible to reduce the level of expenditures to any large extent, especially in 1950-52. One of the reasons for large scale immigration was economic.

A steady flow of migrants would create a labour force which, in part, would be encouraged to work in certain basic industries. This increased labour force, it was argued, would augment the supply of domestically produced goods and therefore reduce the differential between the demand for and supply of goods. This beneficial effect of immigration was considerably offset by two factors. First, the new labour force would itself add to consumer demand, and, secondly, a large amount of capital was required to sustain a rapidly increasing population if the living

¹ Gross domestic expenditure (G.D.E.) is determined by subtracting merchandise imports from gross national expenditure.
standard was not to decline. At the time, it was thought that approximately $2,000 was the amount of capital per immigrant, required to maintain the proposed immigration program of the Government. Much of this would be public expenditure on schools, transportation, housing, hospitals, etc. ¹ In the Budget Speech of 1950-51, the Treasurer stated that 'the Government has been determined that immigration and essential development should go on...and be accelerated'. ² Although Commonwealth expenditure was the main weapon of stabilisation policy in the 1945 document on full employment and price stability, this policy was no longer applicable in the light of other objectives.

Apart from direct controls on wages and prices, the other fiscal stabiliser was taxation. In the last two years of the Labour Government, there were several tax changes but they were clearly inflationary and aggravated the excess demand pressure. The Government, as mentioned before, was aware of the price inflation which had reached a rate of 10 per cent per annum by the end of 1947-48, but attributed the cause to an expected post-war phenomenon. The Budget in the Spring of 1948 granted a major personal income tax reduction which was supplemented six months later by a similar concession. According to the Prime Minister, these were designed to 'lighten the weight of taxation on individuals'. ³

¹ Copland, Inflation and Expansion, p.47.
² Fadden, B.S., 1950-51, p.2.
TABLE I-B
COMMONWEALTH DISCRETIONARY TAX CHANGES 1948-49 TO 1952-53
(Millions of 1948-49 Dollars)

<table>
<thead>
<tr>
<th>Year</th>
<th>Personal Income</th>
<th>Company Income</th>
<th>Sales/Excise</th>
<th>Wool Levy</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1948-49</td>
<td>-41</td>
<td>-3</td>
<td>-1</td>
<td>-</td>
<td>-110</td>
<td>-45</td>
</tr>
<tr>
<td>1949-50</td>
<td>-69</td>
<td>-27</td>
<td>-11</td>
<td>+159</td>
<td>+7</td>
<td>+168</td>
</tr>
<tr>
<td>1950-51</td>
<td>-11</td>
<td>+13</td>
<td>+77</td>
<td>-128</td>
<td>+6</td>
<td>+82</td>
</tr>
<tr>
<td>1951-52</td>
<td>+90</td>
<td>+37</td>
<td>-12</td>
<td>-7</td>
<td>-72</td>
<td></td>
</tr>
<tr>
<td>1952-53</td>
<td>-34</td>
<td>-19</td>
<td>-12</td>
<td>-7</td>
<td>-72</td>
<td></td>
</tr>
</tbody>
</table>

Sources: Budget Speeches, 1948-49 to 1953-54.

The Budget Speech of 1949-50 announced a reduction in the general sales tax rate, a partial rate reduction on some goods taxed at 25 per cent and a number of exemptions which would 'operate to benefit the whole community'. The special initial depreciation allowance was extended for a further period of two years as an assistance to the re-equipment of industry and establishment of new enterprises. The personal income tax reduction would place almost $70m. of purchasing power (in 1948-49 dollars) in the hands of consumers which, when combined with the sales tax reduction, would certainly stimulate spending. In light of the Government's recognition of the demand-pull component of the inflation, and given that certain federal expenditures had high priority, it is difficult to comprehend why these tax reform measures had priority over anti-inflationary policy. In addition to these tax changes, the Commonwealth Treasury estimates the effect of major tax changes on revenue. A tax reduction is considered a cost to revenue and is denoted by a negative sign. A tax increase is a gain to revenue and is denoted by a positive sign. These estimates have been deflated by the Consumer Price Index (1948-49 = 100).


3 From a purely political point of view, the tax measures could partially be explained by the impending election.
reductions, all categories of expenditure showed real increases.

By the first quarter of 1950-51 the rate of increase in retail prices was 12 per cent per annum, labour was scarce and a rapid rise in the price of wool was creating a high level of personal income.¹ In the Budget Speech, the Treasurer stated: 'This rise in wool prices will add to our international reserves...and can be counted as a national advantage because of the larger quantity of imports we can buy. The internal consequences could be very disruptive'.²

With this in mind, the Treasurer announced the first of two anti-inflation measures; a 20 per cent levy on the gross income of woolgrowers which would be applied to future income tax liability. Since very little is known about the consumption behaviour of farm income earners, it is not possible to make a reasonable estimate of the effect on demand of this anti-inflationary measure.³ The second change in policy was an increase in the rate of sales tax on those goods 'which are considered to cause inordinate competition for materials in short supply and skilled manpower'.⁴ It was hoped that these goods (automobiles, electrical appliances and household furnishings) were highly price-elastic and a reduction in purchases would free resources for the production of more essential goods. It therefore had the secondary objective of re-allocating resources to other areas of

¹ The rapid increase in the price of wool is reflected in the Export Price Index. See Table I-C.
² Fadden, B.S., 1950-51, p.4.
³ This particular measure will be discussed in more detail in Chapter VII.
⁴ Fadden, op. cit., p.20.
### TABLE I-C

**ECONOMIC INDICATORS**

**1948-49 to 1952-53**

**QUARTERLY**

<table>
<thead>
<tr>
<th>Year</th>
<th>Quarter</th>
<th>Retail Price Index</th>
<th>Wage Index</th>
<th>Demand for Export Price Index</th>
<th>Export Price Index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>1948-9</td>
<td>1</td>
<td>100.0</td>
<td>100.0</td>
<td>104.0</td>
<td>100.0</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>102.6</td>
<td>102.7</td>
<td>103.2</td>
<td>107.3</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>104.3</td>
<td>104.4</td>
<td>104.4</td>
<td>109.8</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>107.3</td>
<td>107.1</td>
<td>104.3</td>
<td>94.5</td>
</tr>
<tr>
<td>1949-50</td>
<td>1</td>
<td>109.2</td>
<td>109.4</td>
<td>103.0</td>
<td>94.6</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>112.1</td>
<td>111.4</td>
<td>102.8</td>
<td>113.0</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>114.1</td>
<td>113.5</td>
<td>104.0</td>
<td>124.3</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>117.4</td>
<td>116.4</td>
<td>104.7</td>
<td>136.5</td>
</tr>
<tr>
<td>1950-1</td>
<td>1</td>
<td>120.3</td>
<td>119.4</td>
<td>104.1</td>
<td>182.0</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>125.7</td>
<td>135.0</td>
<td>103.4</td>
<td>196.5</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>131.1</td>
<td>139.4</td>
<td>104.5</td>
<td>264.3</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>140.3</td>
<td>147.7</td>
<td>105.5</td>
<td>162.9</td>
</tr>
<tr>
<td>1951-2</td>
<td>1</td>
<td>148.7</td>
<td>154.9</td>
<td>104.7</td>
<td>134.8</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>156.3</td>
<td>163.3</td>
<td>102.6</td>
<td>145.8</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>160.5</td>
<td>169.6</td>
<td>101.9</td>
<td>128.1</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>168.8</td>
<td>173.6</td>
<td>100.3</td>
<td>139.1</td>
</tr>
<tr>
<td>1952-3</td>
<td>1</td>
<td>171.2</td>
<td>179.9</td>
<td>98.1</td>
<td>137.7</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>171.6</td>
<td>182.8</td>
<td>98.7</td>
<td>147.2</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>173.6</td>
<td>183.3</td>
<td>98.6</td>
<td>151.3</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>175.5</td>
<td>185.7</td>
<td>99.1</td>
<td>148.4</td>
</tr>
</tbody>
</table>

**Sources:** C.B.C.S., Monthly Review of Business Statistics and Department of Labour and National Service, Review of the Employment Situation.

**Note:** Columns 1, 2, and 4 are based on the September Quarter = 100.0.

### ANNUAL

<table>
<thead>
<tr>
<th>Year</th>
<th>Budgetary Expenditure as a Per cent of G.D.E.</th>
<th>Taxation Revenue as a Per cent of National Income</th>
<th>Per cent Change in Real Personal Consumption</th>
<th>Per cent Change in Real Private Fixed Investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1948-49</td>
<td>23.5</td>
<td>25.4</td>
<td>+ 6.1</td>
<td>+ 17.1</td>
</tr>
<tr>
<td>1949-50</td>
<td>23.2</td>
<td>22.9</td>
<td>+ 6.1</td>
<td>+ 20.6</td>
</tr>
<tr>
<td>1950-51</td>
<td>27.9</td>
<td>23.8</td>
<td>+ 6.8</td>
<td>+ 0.6</td>
</tr>
<tr>
<td>1951-52</td>
<td>25.9</td>
<td>28.7</td>
<td>- 1.0</td>
<td>- 7.1</td>
</tr>
<tr>
<td>1952-53</td>
<td>27.3</td>
<td>25.2</td>
<td>- 2.5</td>
<td>- 1.0</td>
</tr>
</tbody>
</table>

**Sources:** Table I above and Australian National Accounts, income and expenditure, 1948-49 to 1964-65.
SELECTED ECONOMIC INDICATORS
1948-49 TO 1952-53

DIAGRAM I-A

Demand for Labour Index

Commw. Spending as % of G.D.E.

Taxation as % of N.N.I.

Unemployed as a percentage of the work force

Quarterly % change in Retail Price Index

June 1949

June 1952
production. A third tax change was a number of small personal income tax concessions.

By the fourth quarter of 1950-51, retail prices were advancing at an annual rate of 29 per cent and the index of labour demand had reached a peak of 105.5. During this year, strong deflationary action was advocated to prevent further inflation.¹ The Budget of 1951-52 contained a number of proposals to meet the problem and in the opening statement, the Treasurer estimated a surplus of $229m. which, he said, would contribute in no small measure to the control of the current inflationary pressure.² The Government's analysis of the economy, based on various indications up to April or May of 1951, indicated the existence of a serious gap between the supply of and demand for goods. Conditions dictated a strong policy of deflation which would have to rely upon the tax side of the budget owing to the necessity of maintaining defence, and other expenditures associated with the Korean War, at a high level. This expenditure constraint was outlined in the Budget and Counter-Inflationary Policy section of the Speech where it was stated that 'large sections of governmental expenditure cannot be curtailed'.³ It was pointed out that a serious attempt would be made to limit expenditure wherever possible and mention was made of reducing the public servant staff by 10,000. This was not attained although public employment in all branches of government was 8,000 less in June 1952 than in June 1951, and federal departmental expenditures declined by 4.9 per cent.⁴

¹ Copland, op. cit., p.63 and pp.120-1.
³ Ibid., p.4.
⁴ See Table VI-B of Chapter VI.
The effect on revenue of the tax measures is shown in Table I-B and includes the effect of rate changes as well as an advance payment by companies on their future tax liability. A less generous method of averaging personal income for tax purposes was responsible for a portion of the increased revenue from personal income tax. The scope of these deflationary policies was wide and it was hoped that the impact would have real as well as 'psychological' effects on the level of consumption and private investment. The resulting cash surplus was $197m. in current prices, only slightly below that estimated.

Fiscal policy during the two years 1950-52 was both supported and hindered by monetary policy. The Commonwealth Bank's Special Accounts procedure effectively absorbed some of the increase in bank liquidity during the boom, but, until 1951, the central bank made loans available to the trading banks at low interest rates. Designed as an emergency measure, they were subscribed in rather large quantities. In addition, the central bank was promoting low interest rates through support of the bond market.

In appraising the anti-inflationary fiscal policies of this period, the measures seem weak on the tax side and in the wrong direction on the expenditure side in 1950-51. The next year, they appear too strong on both revenue and expenditure side of the budget. It will be shown later, in Chapter V, that the net income-creating effect of the budget in 1950-51 was quite large while the net income-destroying impact of the budget in 1951-52 was also substantial. When considering the relative inflexibility of Commonwealth spending and the doubtful anti-inflationary effect of the wool levy, alternative
tax measures (excess profits tax, higher sales tax) should have been introduced in 1950-51. The deflationary policies in 1951-52 aggravated the levelling off in economic activity stemming from the collapse of wool prices. At the time of preparing the 1951-52 budget, there was little hint of the impending decline.

By November 1951, the rate of increase of retail prices began to decline and by the third quarter of 1951-52, it had fallen to 11 per cent per annum. The decline was no isolated event. Building activity which had reached a peak three or four months prior to the budget, continued its decline. Retail sales, on a seasonally adjusted basis, had reached their peak in March 1951 and declined slightly until October when the decline was accelerated. The A.N.Z. index of factory production, on a seasonally adjusted basis, started to fall in October and employment declines commenced two or three months later.\(^1\)

One of the major forces behind the downturn was the unforeseen collapse of wool prices which resulted in a decline in real farm income of $606m. This was combined with a small rise in real wages and salaries of $76m., the overall effect being a fall in personal income and spending. One of the few buoyant forces in the economy at this time was Commonwealth capital expenditure which increased 20.0 per cent in real terms compared with a 0.4 per cent rise in private investment. By June 1952,

---

\(^1\) The turning points for these indicators are based on seasonally adjusted monthly data kindly made available by A.M.C. Waterman. Future reference to turning points or trends in retail sales, private building, motor vehicle registration, international reserves and factory production are based on these series.
according to the Commonwealth Bank, the excess demand for labour had disappeared and some recessive tendencies had developed during the year.¹

To counter the recession elements in the economy there was a sales tax reduction and withdrawal of some of the earlier anti-inflationary tax measures on personal and company income. Inflation was still present but had now taken on a 'cost-push' character resulting from earlier demand pressures and the automatic wage adjustment. The persistence of the price-wage increases plus the fact that unemployment was only 1.4 per cent of the work force by the end of June 1952, gave rise to a cautious approach towards stimulating expenditure.

Although Commonwealth current expenditures increased $45m., total spending declined by 0.3 per cent in 1952-53. This fiscal contraction was two-fold; a holding constant of fixed capital spending and a 22 per cent reduction in loans for capital works and housing. This had been foreshadowed earlier in 1952.² At the beginning of 1952-53, the Commonwealth announced its intention to exclude current revenue as a source of finance for capital works.³ In practice, approximately $27m. was financed by the 1952-53 surplus.

The increasing unemployment at the beginning of the year was diagnosed as mainly 'transitional', the result of reduced spending on 'over-optimally planned public

² The C.B.A.R. stated in 1952 (see page 18) ; 'It is doubtful if Australia can at present levels of saving and of taxation continue to support from its own resources, the volume of works achieved in 1951-52'.
³ Fadden, op. cit., p.5.
works'. In addition to the 'transitional' unemployment, the Government acknowledged that the present demand for some goods is inadequate to absorb supplies and in consequence, some unemployment has emerged. The unchanged value of fixed capital expenditure can probably be explained, in part, by the lag between the decision to reduce spending and the actual reduction.

Finally, it appears that a reduction in migration was also considered an anti-recession measure with the decision to reduce the net inflow of immigrants in 1952-53. It is of interest to note that two years earlier, it was implied that a reduction in immigration was a possible anti-inflation measure.

In appraising fiscal policy in 1952-53, the rise in real current expenditure was expansionary but the decline in loans for capital works and housing offset this increase. The tax reductions were expansionary. It will be shown later that the net income-creating effect of the budget in 1952-53 was the result of these discretionary tax reductions and the automatic decline in tax revenues associated with the recession.

(b) RECOVERY AND INFLATION 1953-54 TO 1955-56

The recession of 1952-53 was short lived. In the C.B.A.R. for 1953, it was noted that 'some unemployment occurred although it quickly became apparent that there

---

1 Fadden, B.S., 1952-53, pp.2 and 3.
2 Fadden, op. cit., p.3.
3 The question of time lags and fiscal policy is discussed in Chapter IX.
4 Copland, op. cit., pp.51-52.
was little danger of a major decline in activity'.

Referring to the tax cuts and increased grants to the states, the Report went on to say that 'these early steps undoubtedly helped to sustain employment'. By the time the 1953-54 Budget was in preparation, most short-term indicators were showing a steady recovery. Unemployment, which was 2.7 per cent of the work force in the first quarter of 1952-53, was now below 2 per cent. Retail sales and private building had recovered approximately one half of their decline from the pre-recession peak while the A.N.Z. index of factory production had regained its prerecession peak. The Government felt that equilibrium had been restored but a positive stimulus was needed to promote higher levels of production. 'So far as it is in the power of the Government to give that stimulus, this budget should provide it'.

The stimulus was in the form of tax cuts which had a second purpose, that of an anti-cost inflation measure. 'Reducing taxes' the Treasurer said, 'on individuals and businesses, is the best form of assistance we can give in the attack on costs. Essentially, the cost problem is one to be solved by greater efforts and greater efficiency on the part of both labour and management'.

It was argued that by making wages and profits 'more worth earning', (through tax reductions), effort and efficiency would increase, thereby reducing costs. In

---

2 Ibid., p.9.
3 See reference in footnote 1 of page 25.
4 Fadden, B.S., 1953-54, p.2.
5 Ibid., p.4.
addition, there would be greater encouragement for personal and business saving. The tax changes were widespread. There was a personal income tax rate reduction (12 1/2%), increased allowances and abolition of the property income tax. For companies, there was a rate reduction and increased retention allowance for private companies. Sales tax rates were reduced, the payroll tax exemption increased and the entertainment tax abolished. The overall impact was substantial as seen in Table I-D and, combined with the concessions of the previous year, created a climate that was conducive to personal and business spending. To support the recovery, monetary restraints were further relaxed, at least in the early part of the year.¹

<table>
<thead>
<tr>
<th>Year</th>
<th>Personal Income</th>
<th>Company Income</th>
<th>Sales/Excise</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1952-53</td>
<td>-34</td>
<td>-19</td>
<td>-12</td>
<td>-7</td>
<td>-72</td>
</tr>
<tr>
<td>1953-54</td>
<td>-47</td>
<td>-28</td>
<td>-10</td>
<td>-11</td>
<td>-96</td>
</tr>
<tr>
<td>1954-55</td>
<td>-27</td>
<td>-12</td>
<td>-12</td>
<td>-2</td>
<td>-41</td>
</tr>
<tr>
<td>1955-56</td>
<td>+24</td>
<td></td>
<td>+24</td>
<td></td>
<td>+24</td>
</tr>
</tbody>
</table>

Sources: Budget Speeches, 1952-53 to 1956-57.

The Commonwealth government’s budget expenditure policy did little to stimulate the recovery; in fact, the result was a decline in real current as well as capital expenditures. Although loans for State works and housing increased, other loans for capital spending declined.

² See footnote to Table I-B.
TABLE I-E

COMMONWEALTH BUDGETARY EXPENDITURE AND TRANSFERS
IN AUSTRALIA 1952-53 TO 1955-56
(Millions of 1948-49 Dollars)

<table>
<thead>
<tr>
<th>Year</th>
<th>Category of Expenditure</th>
<th>Percentage Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Current (i)</td>
<td>Capital (ii)</td>
</tr>
<tr>
<td>1952-53</td>
<td>758</td>
<td>49</td>
</tr>
<tr>
<td>1953-54</td>
<td>735</td>
<td>42</td>
</tr>
<tr>
<td>1954-55</td>
<td>731</td>
<td>42</td>
</tr>
<tr>
<td>1955-56</td>
<td>750</td>
<td>51</td>
</tr>
</tbody>
</table>

(i) Fixed Capital Expenditure on New Assets
(ii) Loans for Capital Works and Housing

The economy continued to improve and, looking at the price indices, the threat of a permanent inflation had all but disappeared. The retail price index increased from 98.8 in the June quarter of 1953 to 100.1 in the quarter ending June 1954, declining between the third and fourth quarter of the year. The wholesale price index declined during the year. Despite the price stability, the Government announced in the Budget of 1954-55 that 'there can be no mistaking the signs that stresses are again threatening to develop in our economy' even though there was 'stability of general economic conditions combined with a remarkable degree of material progress'. 1 The 'general stability' no doubt refers to prices and the balance of payments, while the 'stress' is in reference to building and manufacturing activity which had risen to levels above that of the 1951 boom. The position in the labour market may have been of some concern to the authorities. Although nowhere as high as the 1948-51 level, the index of demand for labour had reached 101.4 by the middle of 1954.

---

Full employment, according to two separate sources, had been restored in the latter half of 1953. In 1954, the C.B.A.R. stated that the 'demand for labour generated by increased activity was exceeding the supply'.

The central bank had recognised the possibility of inflationary pressures and in November 1953, it estimated that the economy was now entering over-full employment and some restraint was needed. Despite the call to Special Accounts in January 1954 and 'moral suasion' to the trading banks to restrain lending, advances from the latter increased $280m. by the end of the financial year.

There was a general awareness, then, that some demand pressure was again present in the economy. These pressures were recognised by the Treasurer, but the problem of cost inflation appeared to be more crucial. Consequently, the Government proposed certain tax reductions which were 'devised in a way that will ensure the maximum incentive for effort, while making wherever possible, a direct reduction in costs'. This explanation was similar to one of the reasons for the tax reductions in the previous year. The latest tax cuts were limited to sales and personal income tax and their cost to revenue was considerably less than the corresponding measures in 1953.

---


4 Fadden, op. cit., p.5.
Deflationary aspects of the budget policy were to originate on the expenditure side. As long as consumer and business expenditures were at high levels the Government argued that 'it would be wrong to make large additions to public expenditure'. The past two years of stability were partly the result of the overall restraint in public spending and the Treasurer suggested that this was not the time to abandon that practice. Nevertheless, federal spending estimates, according to the 1954-5 Budget Speech, were up by 5.7 per cent and included a $21m. increase for capital works. Table I-E indicates, however, that actual real expenditures, including the Loan Fund allocations for capital works, declined by 2.7 per cent as the ratio of Commonwealth domestic budgetary spending to G.D.E. declined from .243 to .220.

The economy's reprieve from inflation ended quickly. The wholesale price index increased suddenly during the December quarter of 1954, reaching an annual rate of increase of 8 per cent, then settling to a 5 per cent rate of increase throughout the remainder of the financial year. The retail price index advanced steadily, reaching an annual rate of increase of 4 per cent by the end of the same year. Retail sales and factory production continued to increase while building activity decreased somewhat, and remained constant for the latter part of the year. Private gross fixed capital spending was up by 12.2 per cent as manufacturing stocks increased six-fold. Declining unemployment with increased vacancies resulted in the demand for labour index reaching 102.0 by June of 1955.

1 Ibid., p.4. It is interesting to note that after two years, 1952 is referred to as a year of stability.
The developing inflationary pressures were the result of domestic expansion. In a survey of the Australian economy, Professor Downing assessed the economic climate as one of inflation stemming from increased consumption and investment spending, both generated in part by easy credit. Dr Coombs pointed out that the inflation was essentially internal in character, 'owing to large expenditures on durable goods, financed by hire-purchase arrangements'. The Australian Economy 1957, reviewing the post-1953 period, contended that 'the upsurge of expenditure between mid-1953 and the end of 1955 owed little to any external stimulus'. The survey notes that external circumstances at that time could normally have been expected to dampen internal demand, but the increase in hire purchase finance and easier credit more than offset these deflationary tendencies. Other commentators gave similar interpretations of the trends which had developed.

The Treasurer, in the Budget Speech for 1955-56, said that 'by the end of the financial year, we had around us, the unmistakable sign of active inflation' owing to 'a boom chiefly in consumer spending and private investment causing demand to thrust ahead much too fast for the growth of our resources'. 'This most formidable upsurge of spending has been facilitated by a far too generous expansion of credit on the part of the

1 Downing, R. 'The Australian Economy, March 1956', E.R. May 1956. During this year, low interest rates were being maintained through central bank support of the bond market.
2 Coombs, op. cit., p.155.
3 1957 and Beyond, p.7.
banking system...with rapid growth of hire purchase finance'.

No discretionary action was proposed by the Government but a plea was made for restraint on the part of business, the banking system and everyone who had money to spend. The Treasurer said that the Government should conduct its own affairs in a way that would set an example to others. The 'example', as far as spending was concerned, can be seen from Table I-E.

The alternative to this 'fiscal moral suasion' was the 'enforcement of restraint upon the economy through the medium of controls which we as a Government believe the Australian public desire to avoid'.

The 'enforcement of restraint' came six months later, when, on 14 March, the Prime Minister announced a number of tax increases. The increased company tax rate, applied to incomes in 1955-56, was directed towards reducing the level of private fixed capital spending. The sales and excise tax rate increases would have their effect immediately and the gain in revenue in 1955-56 was estimated to be $24m. in real terms. These changes were reinforced by a tighter monetary policy which included the withdrawal of support for the bond market and further directives to the trading banks to restrict lending. Reviewing the situation a year later, the

1 Fadden, B.S., 1955-56, pp.1-4. During the year the central bank made additional calls to Special Accounts and sent directives to the trading banks. Despite this, advances by the banks increased $100m. Dr Coombs admitted that this rise had 'contributed significantly...to the rapid emergence of inflationary pressures', op. cit., p.167.

2 Fadden, op. cit., p.7.

3 Prior to this, on Sept. 27, 1955, the Prime Minister announced a small reduction in planned federal public works as an anti-inflationary device. (See H.R. Debates, 21st Parliament, p.970).
Government noted that 'by the early part of 1956, it was evident that fairly drastic measures were necessary to curtail demand'.

Throughout 1955-56, the pressure on the labour market eased according to the demand for labour index. In May of 1956, Professor Downing estimated that by March, the demand for labour had been reduced. His view was supported by Professor Karmel some time later. D.C. Rowan estimated that there was a reduction in the demand for labour beginning in October-November of 1955.

Factory production and retail sales declined during the first part of the year but recovered later, at which time private building activity decreased sharply.

Consumption, in real terms, was up only by 2.9 per cent while the major expansionary force came from public and private fixed capital spending. These conflicting trends took place in a framework of rising prices during the year.

The concurrence of declining demand pressure and rising prices was officially explained by a lagged response of prices to earlier demand pressure. Rowan and Karmel also considered this a possibility, emphasising that such lagged responses were due to present higher costs (mainly wages) which were responding to earlier

---

1. 1957 and Beyond, p.9.
3. Increases in the Consumer Price Index during 1955-56 were

<table>
<thead>
<tr>
<th>Quarterly Period</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage Change</td>
<td>+0.9</td>
<td>+1.3</td>
<td>+0.9</td>
<td>+3.1</td>
</tr>
</tbody>
</table>

The price increases continued into the next year, the September (1956) Quarter rise in the Index being +2.5 per cent.

4. C. of A., 1957 and Beyond, pp.11-12.
demand pressure in the economy. Professor Karmel further suggested that imports in 1954 and 1955 may have relieved some of the pressure on scarce local supplies. This demand pressure on local goods became more acute when import restrictions were re-imposed.

The import restrictions were necessary in view of the position of Australia’s international reserves. With the relaxation of controls in 1954, reserves, as expected, declined. Towards the end of 1954, import prices began to rise as export prices continued to fall, further worsening the terms of trade. The restrictions were imposed in April 1955, but the deterioration of trade terms and continued import demand resulted in reserves falling below their mid-1950 level by the beginning of 1956. This trend was immediately reversed following the imposition of the March deflationary policies.

What can be said about the various fiscal measures from September 1953 to March 1956? The tax reductions which were granted in 1953 were clearly justified in view of the conditions shown by the available indicators at the time of preparing the budget and in light of the planned level of federal spending. Rather than hold taxation at 1952-53 rates and increase spending, the tax stimulus was chosen since it would also reduce costs and encourage savings. The cost-reducing and savings-encouraging aspects of these tax changes are discussed

---

2 In the 1956-57 Budget Speech, the Government attributed part of the economic slowdown in the latter half of 1955-56 to the March 1956 restrictive measures. The decline in automobile expenditure and building were, however, well under way when the measures were announced.
3 See footnote 5, p.28.
in Chapter VII. In spite of the tax reductions, the net impact of the budget in the recovery year was income-destroying.¹

A year later, in the 1954-55 Budget Speech, the Government recognised that stresses, in terms of pressure on resources, had appeared during the past year. Such pressure, the Treasurer argued, could lead to higher prices and costs and it was therefore essential that costs rise no further. Although the Government tried to shift some of the responsibility for stabilisation to the private sector by stating that industry and trade 'have responsibilities as great if not greater than that of the Government', two tax reductions were proposed as means of lowering costs.²

These tax reductions may have had some effect on costs but in a full employment situation, the lower personal income tax and reduced sales taxes would inevitably lead to an increase in consumer demand which would be inflationary. The main anti-inflation weapon fielded against demand pressures was a decline in real expenditure. As a result of this latter action, the net impact of the budget was deflationary.³ This was supplemented by deflationary monetary policy.⁴

In the 1955-56 Budget Speech, the Treasurer went into a lengthy analysis of economic conditions in order to explain the prevalent inflationary pressures. He

¹ See p.150 of Chapter V.
² Fadden, B.S., 1954-55, p.4.
³ See p.151 of Chapter V.
⁴ Dr. Coombs mentions that the Treasury Bill reduction by the Commonwealth 'made a useful contribution to reducing the money supply and so countering the upward trend in expenditures', op. cit., pp.160-61.
exhorted industry and trade to exercise restraint and emphasised that the federal government should set an example. Later, in the same speech, he outlined the following increases in spending: social services (+$59m.), payments to the states (+$42m.), and capital works (+$17m.)--with an overall increase in expenditures estimated to be 8 per cent. If an 8 per cent increase in planned spending was the 'example' to be followed by consumers and business, then price and balance of payments problems would be unavoidable. The real increase in expenditure, however, was only 2.9 per cent, and combined with substantial increases in tax revenue, the net impact of the budget was deflationary. Additional measures, in the form of monetary policies, failed to prevent the development of instabilities. In March, 1956, with an election behind them, the Government could safely introduce deflationary policies to curb the flow of imports and reduce spending.

Monetary and fiscal policies of this period were criticised by Rowan; the former being too weak and the latter subject to a variety of lags, both administrative and political, which made it impossible to apply counter-cyclical fiscal policy at the right time. If the March measures were designed specifically to limit domestic inflation, they were late with reference to the peak of the boom. This fact would hardly have been discernible

---
1. See p.172 of Chapter V.
2. Rowan estimates a political-administrative lag of 10 to 20 months. He suggests that more control should be given to monetary policy where such lags do not exist. There is no mention, however, of the possible monetary lags which may render such policy ineffective as a short run stabiliser. (See H.G. Johnson, The Canadian Quandary, Toronto, McGraw-Hill, 1962, Chapter 12).
at the time of preparing the 'baby budget'. If the measures were designed to impede the fall in reserves, the timing of discretionary action would depend on how far the authorities were willing to allow the reserves to decline. When announcing the policy in March, the Prime Minister noted that there were two objectives to be achieved, price stability and a reduction in the flow of imports.¹

Professor Downing gave qualified support to the policies of March 1956, pointing out two important restraints on fiscal policy, an immigration program requiring a minimum amount of public expenditure per migrant and certain public works which were necessary for development.² Although the sales tax increase would probably reduce private consumption, an income tax increase would have been superior for another reason. He argued that it would have been easier for the Arbitration Court to reject wage demands since the burden of the tax would have been distributed more equitably. The consumption tax falls more heavily on lower wage income groups where pressure for increases is likely to be strongest. The interesting fact here is Professor Downing's concept of stability, a balance between full employment with stable prices and full employment with price inflation of 5 per cent per annum. This is similar in attitude to Sir Douglas Copland's warning that

¹ When announcing the various economic measures, the Prime Minister emphasised the role that import controls would play in halting the fall in reserves. The tax on automobiles and petrol was designed as a means of cutting expenditure that promoted imports. (See H.R. Debates, 22nd Parliament, Volume 9, pp.786 to 797).

² Downing, op. cit., p.17.
excessive concern for price stability might impede any real progress.\(^1\)

The Commonwealth gave no specific stability guidelines during this period, 1953 to 1956, and hence it is rather difficult to determine how much the economy deviated from the level of economic activity desired by the government. In these years, G.N.P. rose 20.6 per cent or 15.0 per cent in real terms. Retail prices rose about 10 per cent during the period with more than a full-employed labour market at all times. If Professor Downing's 'internal' guidelines are applied, there was no need for deflationary policies until September 1955, when the rate of increase of retail prices reached 5 per cent per annum. The Government may have been quite willing to sacrifice some price stability for a real growth rate of 5 per cent per annum, and, if so, criticism of fiscal policies must be based on individual appraisal of what constitutes stability, external and internal. From the government's point of view there may be some political advantages to be gained from an economic policy that is not too rigorously defined.

## TABLE I-F

**ECONOMIC INDICATORS**

**1952-53 TO 1955-56**

### QUARTERLY

<table>
<thead>
<tr>
<th>Year</th>
<th>Quarter</th>
<th>Retail Price Index</th>
<th>Wage Index</th>
<th>Demand for Labour Index</th>
<th>Export Price Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>1952-3</td>
<td>1</td>
<td>96.3</td>
<td>96.8</td>
<td>98.1</td>
<td>93.5</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>96.6</td>
<td>97.0</td>
<td>98.7</td>
<td>100.0</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>97.7</td>
<td>97.3</td>
<td>98.6</td>
<td>102.7</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>98.8</td>
<td>98.5</td>
<td>99.1</td>
<td>100.8</td>
</tr>
<tr>
<td>1953-4</td>
<td>1</td>
<td>100.0</td>
<td>100.0</td>
<td>99.4</td>
<td>100.0</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>100.2</td>
<td>100.3</td>
<td>100.3</td>
<td>97.4</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>100.2</td>
<td>100.5</td>
<td>100.6</td>
<td>93.7</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>100.1</td>
<td>100.5</td>
<td>101.4</td>
<td>97.2</td>
</tr>
<tr>
<td>1954-5</td>
<td>1</td>
<td>100.9</td>
<td>100.5</td>
<td>101.4</td>
<td>90.9</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>101.4</td>
<td>101.1</td>
<td>101.4</td>
<td>88.7</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>102.1</td>
<td>102.3</td>
<td>101.5</td>
<td>87.8</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>103.2</td>
<td>102.7</td>
<td>102.0</td>
<td>85.5</td>
</tr>
<tr>
<td>1955-6</td>
<td>1</td>
<td>104.8</td>
<td>103.2</td>
<td>101.5</td>
<td>79.5</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>105.8</td>
<td>104.6</td>
<td>101.2</td>
<td>81.5</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>107.1</td>
<td>105.5</td>
<td>100.6</td>
<td>79.5</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>110.2</td>
<td>107.6</td>
<td>100.4</td>
<td>84.2</td>
</tr>
</tbody>
</table>

**Sources:** See Table I-C.

**Note:** Columns 1, 2, and 4 are based on Sept. Quarter = 100.0.

### ANNUAL

<table>
<thead>
<tr>
<th>Year</th>
<th>Budgetary Expenditure as a Per Cent of G.D.E.</th>
<th>Taxation Revenue as a Per Cent of National Income</th>
<th>Per cent Change in Real Personal Consumption</th>
<th>Per cent Change in Fixed Investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1952-53</td>
<td>27.3</td>
<td>25.2</td>
<td>- 2.5</td>
<td>- 7.1</td>
</tr>
<tr>
<td>1953-54</td>
<td>24.3</td>
<td>24.1</td>
<td>+ 7.1</td>
<td>+13.6</td>
</tr>
<tr>
<td>1954-55</td>
<td>22.0</td>
<td>23.4</td>
<td>+ 6.9</td>
<td>+ 9.3</td>
</tr>
<tr>
<td>1955-56</td>
<td>21.9</td>
<td>23.2</td>
<td>+ 2.9</td>
<td>+ 5.2</td>
</tr>
</tbody>
</table>

**Sources:** See Table I-C
DIAGRAM I-B
SELECTED ECONOMIC INDICATORS
1952-53 TO 1955-56

Demand for Labour Index

Comm. Spending as % G.D.E.  
Taxation as % N.N.I.

Unemployment as a percentage of the work force

Quarterly % change in Retail Price Index (1952-54) and The Consumer Price Index (1955-56)

June 1953  June 1955
been explained in terms of earlier demand pressure affecting the present level of costs and prices.¹ Other indicators showed that there was no particularly strong expansionary or deflationary trend at that time and attention was centered on the balance of payments problem.² "The need to strengthen the balance of payments continues to be the dominant problem in the Australian economy."³ During the past two years, the country had accumulated a trade deficit of $500m. and the terms of trade were becoming even less favourable.

The Federal Treasurer's approach to the new financial year was one of cautious optimism. "While some relief has been obtained from the pressures which have affected our economy...we have still not reached a fully balanced situation. That applies particularly to the external side of our economic affairs..."⁴ Internally, the Treasurer observed that 'demand has been reduced' but 'it still seems to be running ahead of supply'.⁵ In preparing the budget, the latest indication of the labour market would likely be the end of June, 1956, at which time there were 32,500 vacancies and 31,500 registered unemployed. On a seasonally adjusted basis, these figures were 42,200 and 31,000

¹ This concurrence of rising prices and weakening labour demand is discussed in 1957 and Beyond, pp.12-13 and in the Budget Speech, 1956-57, p.3. See also Rowan, op. cit., p.195 and Karmel, op. cit., pp.5-6.
² Factory production was increasing slowly after a decline in the first half of 1955-56. Car registrations were declining; private building activity was constant and retail sales had levelled off. Foreign reserves were increasing rapidly.
⁴ Fadden, B.S., 1956-57, p.2.
⁵ Ibid., p.2.
respectively indicating that there was still a small margin of excess labour demand.

Taxation proposals were limited as the Government felt that any tax reduction 'would have the effect of adding to demand'.¹ There were, however, several minor concessions, deductions and allowances. The cost to revenue in 1956-57 was estimated at less than $1m. Expenditures on goods and services plus transfers were expected to increase almost 5 per cent but combined with an estimated revenue increase of $200m. (the full effect of the March 1956 tax increases would be felt this year), there would be a cash budget surplus of $217m. which would be paid into the Loan Consolidation and Investment Reserve. From the following table, it is seen that budget expenditures, in 1948-49 dollars, increased by only 1.4 per cent. The reduction in the rate of spending was mainly due to the small increase in current expenditure.

<table>
<thead>
<tr>
<th>Year</th>
<th>Category of Expenditure</th>
<th>Current</th>
<th>Capital</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955-56</td>
<td>(i) Fixed Capital Expenditure on New Assets</td>
<td>750</td>
<td>51</td>
<td>1011</td>
</tr>
<tr>
<td>1956-57</td>
<td>(ii) Loans for Capital Works and Housing</td>
<td>753</td>
<td>55</td>
<td>1025</td>
</tr>
<tr>
<td>1957-58</td>
<td></td>
<td>781</td>
<td>58</td>
<td>1064</td>
</tr>
<tr>
<td>1958-59</td>
<td></td>
<td>841</td>
<td>60</td>
<td>1139</td>
</tr>
</tbody>
</table>

|          | (ii)                              |         |         | + 2.9 |
|          | (ii)                              |         |         | + 1.4 |
|          | (ii)                              |         |         | + 3.8 |
|          | (ii)                              |         |         | + 7.0 |

¹ Ibid., p.15.
The central discussion of the Budget Speech was the balance of payments problem which was partly, claimed the government, the result of internal inflationary pressures spilling over into a demand for imports when local supplies were either in short supply or highly-priced. The deflationary measures had been of some aid, but given the present position of the country's reserves and prospects for trade conditions, import restrictions were necessary and would remain 'unless there is a major improvement in our export earnings or unless capital inflow is much larger than in recent times'. A second topic of the Budget Speech was the cost-price spiral which was the delayed result of earlier pressure, accentuated now by such factors as higher import prices, and the automatic wage adjustment employed by State governments. The latter was a 'major element' of the problem, and, for that reason, the Commonwealth had asked the states to abandon the system as a measure to combat inflation. In summary, according to the Treasurer, the problem was one of wanting both present and future goods in the form of high personal consumption and capital spending.

Prices and wages continued to increase until the January-February period of 1957 when retail prices declined slightly and then remained almost constant for the rest of the year. Quarterly wage increases for this year were 1.2, 1.2, 0.4 and 1.3 per cent. Other indicators of economic activity fluctuated throughout most of the year. Motor vehicle registrations and factory production were up the first half and down the

---

1 Ibid., p.3.
2 Ibid., p.6.
second half of the year. Retail sales showed a slight decline then rose at the beginning of 1957. Private building, which had declined sharply the year before, was increasing rapidly in 1956-57. Gross fixed private investment fell by 0.6 per cent, and the increase in the value of stocks was only one-seventh of the increase in previous year. The most encouraging trend in the economy was the export surplus of $445m. or $621m. at 1953-54 prices.

With the exception of the second quarter of the year, when unemployment declined on a seasonally adjusted basis, registered unemployed persons increased, and reached 1.8 per cent of the work force by June 1957. Vacancies had declined to 0.8 per cent of the work force. The only absolute decline in the actual employment figures, according to Waterman's calculations, was in the commerce sector where a decline which began in early 1956 continued until the beginning of 1957.

Appraisal of economic events in 1956-57 varied. Professor Arndt refers to 'a mild recession' or 'hangover' in domestic activity although not as severe as that of 1952-53.1 Another commentator suggested that 'the 12 months following March 1956 were marked by continuing if unspectacular, prosperity'.2 According to the central bank, 'the year 1956-57 was marked by a dramatic improvement in the health of the Australian economy'.3 The Annual Report noted that internal and external stability were being approached as domestic

---

2 Waterman, A.M.C., op. cit., chap. 10, p. 69 of draft.
prices stabilized and export earnings increased substantially. The Australian Economy 1957 was more cautious, saying that 'unemployment did occur in some areas but the number registered as unemployed did not at any time exceed one per cent of the work force'.

Unemployment had increased in December 1956 and January 1957 but 'thereafter levelled off'. On a raw data basis, this did occur, but, at the same time vacancies declined from 30,120 in January to 18,450 in June. On a seasonally adjusted basis, unemployment increased and vacancies remained relatively constant during this six month period. The Australian Economy 1957 concluded that the economy had moved towards balance during the second half of the financial year 1956-57.

With the possibility of a continued fall in export prices and the full impact of the March deflationary measures during 1956-57, the prospect for any expansion was limited. The growth rate, in real terms, did slow down but internal activity was sustained by recourse to hire-purchase finance, substitution of domestic for

---

1 1957 and Beyond, p.10. The source of the statistics for this statement is not given. If deseasonalised estimates of unemployed persons and work force are used, the rate of unemployment exceeds one per cent in each quarter of the year 1956. (Unemployed figures were those of the Commonwealth Employment Service while work force estimates were kindly made available by Michael Keating, Dept. of Economic History, Research School of Social Sciences, A.N.U.).

2 Ibid., (first reference), p.15.

3 Two years later in the Australian Economy 1959, it was noted that '...1956-57 was a really good one for Australia'.

4 The Prime Minister reported that the full year gain in revenue of the March measures would be $222m. Estimates in Statement 2 of the 1956-57 Budget Speech, on the effect of the March measures, suggest that the original estimate was excessive. (See Sec. (c) of Chapter VII).
imported goods and the fortuitous rise in export prices. Real personal consumption was not very high and this was attributed in part to a high savings propensity of farm and export income earners.¹

Following on the C.B.A.R. and the Australian Economy, the Federal Treasurer stated in the Budget Speech for 1957-58 that the economy had 'reached a state of substantial balance, both internally and externally at a high level of trade and industrial activity'.² The unemployment was due to 'adjustments within particular industries' and not to any 'general weakness of labour demand'.³ The Government stated that it was impossible to foretell future events, especially those of an external nature, but the mood was one of optimism for the coming year. The budget was therefore formulated with the specific intention of preserving stability, the tax concessions having been designed to give relief to the family man, strengthen Australian industry to meet overseas competition and correct certain anomalies in the system. The tax reductions, in terms of 1948-49 prices, are given in the following table.

The outlook for continued stability, both internally and externally, was somewhat darkened by rapidly falling export prices and rising unemployment. These trends, fortunately, did not manifest themselves in any serious decline in economic activity even though growth fell below the post-war trend. Internal activity, measured by private building, factory production, motor vehicle registrations and retail sales was generally

² Fadden, op. cit., p.l.
³ Ibid., p.l.
### TABLE I-H

**COMMONWEALTH DISCRETIONARY TAX CHANGES**

1955-56 TO 1958-59

(Millions of 1948-49 Dollars)

<table>
<thead>
<tr>
<th>Year</th>
<th>Personal Income</th>
<th>Company Income</th>
<th>Sales/Excise</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955-56</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>March (1956)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1956-57</td>
<td>-8</td>
<td>-16.xx</td>
<td>-3</td>
<td>-2</td>
<td>-29</td>
</tr>
</tbody>
</table>

**Sources:** Budget Speeches 1955-56 to 1958-59 and Hansard March, 1956.

- **x** This is the estimated effect of this increase for March-June.
- **xx** The rate change in 1957-58 applied to incomes the year before so the effect on revenue is in 1957-58, whereas the depreciation allowance, costing $47m., applied to 1957-58 incomes and has a revenue effect in 1958-59.

Expanding, albeit slowly in some areas. Personal consumption was the strongest sector. Despite a decline of $358m. or 34 per cent in farm income and a small rise of $109m. or 2 per cent in wages and salaries, total consumption increased by about 5 per cent and on durables alone, by 8 per cent. At 1948-49 prices, the decline in personal disposable income was $103m. and the increase in consumption, $144m.¹

Consumption, and thus a large part of internal activity, was sustained by three factors: the fiscal measures of 1957-58, an increase in hire purchase financing and a reduction in personal savings. The tax reductions were allegedly designed to be reform measures but their stabilising aspects were more important. The company and payroll tax reductions would ‘assist

¹ Australian National Accounts 1948-9 to 1964-5, Tables 32, 49 and 63.
businesses' while income tax and sales tax reductions 'were more likely to stimulate consumer expenditure'.\(^1\)

As mentioned earlier, the increase in consumption was substantial. Private investment increased by 6.6 percent in real terms.

These tax measures were assisted by the Commonwealth Government's spending program during the year. In May 1957, the Commonwealth authorised an additional $28m. to be raised for the states and local authorities.\(^2\) This was followed by increased Budget estimates of $45m., $39m. and $29m. for grants to the states, social services and capital works respectively. As unemployment increased sharply in January 1958, the federal government agreed to grants of $10m. and $6m. to the states and local authorities to assist with employment-creating works.\(^3\) Finally, in June 1958, it was agreed that there should be an additional $20m. grant from the Loan Fund to the states for public works.

Hire-purchase finance was the second major factor sustaining personal consumption. Loans from such companies rose $114m. or 24 per cent during the year, half of which was for the purchase of motor vehicles and durable goods, both household and electrical.\(^4\) This consumption spending was further bolstered by a reduction in personal saving, which, the central bank said, had reached its lowest since 1948-49. Saving thus 'bore the brunt of the reduction in export income'.\(^5\) As

---

\(^1\) The Australian Economy, 1958, p.7.
\(^2\) Ibid., p.6.
\(^3\) Ibid., p.6.
a percentage of total personal income, savings had been as high as 17.9 per cent in 1950-51 and as low as 9.45 per cent in 1948-49. But in 1957-58, the percentage dropped to 6.71 per cent as individuals attempted to increase their level of consumption.¹

Monetary policy gave some support to the Government's fiscal measures by easing credit conditions. Early in the financial year, a central bank directive suggested that advances could rise although some discretion should be maintained. Further advances were suggested in December, but not to hire-purchase companies. In February 1958, there was a release of $30m. from Special Accounts in order to maintain funds for housing and rural development. This release was further supplemented by $100m. between March and June.

By the end of 1957-58, there was no general consensus with regard to the economy's performance and as one economist stated: 'The year 1957-58 has produced some apparently curious movements'.² Despite unemployment and a sharp decline in farm income, Cochrane estimated that there had been substantial gains in productivity. The central bank stated that the economy had completed its second year of less expansive conditions.³ The Australian Economy compared the June-December period of 1955 with that of 1957, concluding that there had been much expansion with little impairment to growth.⁴ There was one indisputable fact;  

---
³ C.B.A.R., op. cit., p.3.  
domestic prices were unusually stable with consumer prices rising by less than one per cent during 1957-58.

Regardless of any difference of opinion about what had happened, there was general agreement that the economy, at the beginning of 1958-59, was not all that sound; certainly not immune to any continued decline in export income. Writing at the end of 1957, Professor Arndt warned that the economy would see further deflationary trends if the drought continued or if the balance of payments deteriorated further. Aside from the political advantages of an expansionary budget in 1958-59, he argued there could well be a real case for such a budget. The *Australian Economy 1959* reported that 'by early 1958...the continued economic growth stood in some danger' and 'when 1958-59 began, the employment position was causing some anxiety'.

The *Budget Speech* of 1958-59 opened by saying that the Government was planning for a deficit of $220m. to be financed by borrowing from the central bank. 'We are doing this advisedly because we judge that in the circumstances of our economy, expansionary action of that kind is more appropriate than the conventional course of trying to match total receipts and total outgoings'. According to the Government, consumer expenditure and investment were lagging and some assistance was needed to offset the low export earnings. But the economy, 'taken as a whole, made notable progress' and the unemployment 'did not at any stage reach large proportions'.

---

1 Arndt, op. cit., p.310.
2 Ibid., p.1.
Budget contained no tax concessions of any significance, the stimulus coming from increased expenditures. Total expenditure on goods, services and transfers (according to the budget), was expected to increase about 6 per cent, with increases of 6.3, 10.6, and 4.1 per cent in payments to states, social service benefits and capital works respectively. In view of these expenditures, there was no possibility, the government argued, to reduce taxes since the full effect of the 1957-58 concessions would impinge upon this year's revenue.  

Actual real expenditures were higher than those estimated, the increase being recorded in Table I-G.

In general, the budget was commended. The central bank indicated that one of the factors sustaining the level of economic activity was the federal government's fiscal policy. Professor Mathews commented that these policies had prevented a possible recession as a result of continuing unfavourable trade conditions.

The employment position did not appreciably improve in 1958-59. Total employment rose slowly in most sectors except factory employment, where there was a decline in the number of female workers. The largest increase was in the public sector, a reflection of the government's spending. Vacancies were somewhat higher.

---

1. The Government was referring to the new company depreciation provisions which were announced in the Budget Speech of 1957. Since they would apply to company income in 1957-58, the loss of revenue would occur in 1958-59.


4. Public employment was estimated by subtracting total private employment from total civilian employment.
than in the previous year. Retail sales and factory production showed substantial gains with new car registrations and building activity increasing in the second half of the year. In real terms, private investment increased by 1.8 per cent. The rise in real G.N.P. was 8.7 per cent, reflecting a 13 per cent increase in real exports.

In February 1959, it was thought by some observers that 'the upward trend in unemployment had been checked and may have been reversed', and that there was now 'little reason to be concerned about the level of unemployment'.

Even though the level of unemployment in the third quarter of 1958-59 was 2.3 per cent, attention turned to the question of inflation. Prices had risen 'despite the general absence of excess demand'.

The increases, suggested Boxer, were a reflection of wage increases, and, if the employment situation strengthened, further inflation could be expected. By the end of 1958-59, retail prices had increased by 2.5 per cent, wages by 2.1 per cent and the number of registered unemployed was 2.2 per cent of the work force.

Conclusions about policy objectives and policy results in this period are not too clear. The Budget of 1956-57 was directed towards two objectives; deflation of domestic price increases and the attainment of external balance. The problem of costs and prices was discussed at length, and, in relation to the balance of payments, the Treasurer said that inflation 'affects export prospects, import demand and the flow of overseas

---


investment...immediately and in the long run'. How the one affects the other was not discussed nor was there any reference to the impact of fiscal and monetary policy on the interdependence of employment, prices and balance of payments.

Despite the evident slowdown in economic activity, the government allowed the full impact of the March 1956 restrictions to coincide with only a small increase in real spending in 1956-57. This suggests that the government was willing to accept some level of unemployment in order to achieve price and external stability. What the acceptable level of unemployment was, is not discernible but there is some indication of this in the budget speeches. In September 1957, the federal Treasurer said there was no 'general weakness' in the labour market despite the rate of unemployment being 1.8 per cent. A year later, he said that unemployment had not reached large proportions. The rate was now 2.3 per cent. Although unemployment was not a central issue in the Budget Speech of 1957, there were expenditure measures, mentioned above, to provide public employment. During 1957 and 1958, these amounted to $126m. (in current value) in grants to the states and local government authorities for public works.

During the last two years of this three year period, the economy was courting a recession. Fortunately this was averted by the proper combination of offsetting

---

1 Fadden, op. cit., p.4.
2 It will be shown later that the net impact of the budget was deflationary. See p.172.
forces. In addition to the reduction in savings to maintain consumption and the availability of hire-purchase finance, the two latter budgets of this period were of a counter-recession nature. If the three years are viewed as a whole, it would thus appear that federal fiscal policy contributed to preventing a recession while at the same time maintaining some degree of price and external stability. The cost was a mild, but persistent, excess supply of labour.¹

Statistically, real G.N.P. rose 15.9 per cent, the average annual increase in consumer prices was 2.8 per cent, the number of registered unemployed averaged 1.9 per cent of the work force and there was an accumulated trade surplus. The price and unemployment figures for 1957-58 and 1958-9 lend support to Boxer's proposal that the highest tolerable level of unemployment (2 per cent) means an annual price inflation of \(1\frac{1}{2}\) to 2 per cent, which falls within Professor Downing's range of stability.² Whether or not the structural makeup of the economy and external forces create such a trade-off, is a matter which remains to be investigated.³

(d) INFLATION, RECESSION AND RECOVERY, 1959-60 TO 1963-64

At the time of preparing the Budget for 1959-60, most indicators pointed to a healthy state of expansion

¹ See Diagram I-C.
³ Our own work in this area has been strictly exploratory. From the evidence obtained by regressing quarterly changes of the Consumer Price Index on the rate of unemployment, it appears that a two per cent rate of unemployment was associated with an annual increase in consumer prices of 2.5 to 3.0 per cent during the 1948-49 to 1963-64 period.
## TABLE I-J

### ECONOMIC INDICATORS
1955-56 to 1958-59

#### QUARTERLY

<table>
<thead>
<tr>
<th>Year</th>
<th>Quarter</th>
<th>Price Index</th>
<th>Wage Index</th>
<th>Demand for Labour Index</th>
<th>Export Price Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955-6</td>
<td>1</td>
<td>104.5</td>
<td>103.2</td>
<td>101.5</td>
<td>79.5</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>105.9</td>
<td>104.6</td>
<td>101.2</td>
<td>81.5</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>106.9</td>
<td>105.5</td>
<td>100.6</td>
<td>79.5</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>110.2</td>
<td>107.6</td>
<td>100.4</td>
<td>84.2</td>
</tr>
<tr>
<td>1956-7</td>
<td>1</td>
<td>112.9</td>
<td>108.9</td>
<td>99.6</td>
<td>90.3</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>113.0</td>
<td>110.2</td>
<td>99.8</td>
<td>91.8</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>112.6</td>
<td>110.6</td>
<td>99.2</td>
<td>92.7</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>113.7</td>
<td>112.0</td>
<td>99.0</td>
<td>93.1</td>
</tr>
<tr>
<td>1957-8</td>
<td>1</td>
<td>113.9</td>
<td>112.4</td>
<td>98.7</td>
<td>87.6</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>113.7</td>
<td>112.5</td>
<td>99.1</td>
<td>75.4</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>114.3</td>
<td>112.4</td>
<td>98.5</td>
<td>73.3</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>114.8</td>
<td>113.8</td>
<td>98.4</td>
<td>71.0</td>
</tr>
<tr>
<td>1958-9</td>
<td>1</td>
<td>114.9</td>
<td>114.3</td>
<td>98.2</td>
<td>67.5</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>115.8</td>
<td>114.3</td>
<td>98.9</td>
<td>66.3</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>116.3</td>
<td>114.8</td>
<td>98.5</td>
<td>67.5</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>116.8</td>
<td>117.4</td>
<td>98.7</td>
<td>74.4</td>
</tr>
</tbody>
</table>

**Sources:** See Table I-C

**Note:**
Columns 1, 2 and 4 are based on Sept. (1953) Quarter = 100.0.

#### ANNUAL

<table>
<thead>
<tr>
<th>Year</th>
<th>Budgetary Expenditure as a Per Cent of G.D.E.</th>
<th>Taxation Revenue as a Per Cent of National Income</th>
<th>Per Cent Change in Real Personal Consumption</th>
<th>Per Cent Change in Real Private Fixed Investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955-56</td>
<td>21.9</td>
<td>23.2</td>
<td>+ 2.9</td>
<td>+ 5.2</td>
</tr>
<tr>
<td>1956-57</td>
<td>22.1</td>
<td>23.6</td>
<td>+ 1.0</td>
<td>- 0.6</td>
</tr>
<tr>
<td>1957-58</td>
<td>22.2</td>
<td>25.3</td>
<td>+ 3.5</td>
<td>+ 6.6</td>
</tr>
<tr>
<td>1958-59</td>
<td>22.0</td>
<td>23.0</td>
<td>+ 3.6</td>
<td>+ 1.8</td>
</tr>
</tbody>
</table>

**Sources:** See Table I-C.
DIAGRAM I-C

SELECTED ECONOMIC INDICATORS
1955-56 TO 1958-59

Demand for Labour Index

Commw. Spending as % G.D.E.
Taxation as % N.N.I.

Unemployment as a Percentage of The Work Force

Quarterly Percentage Change in The Consumer Price Index

June 1956
June 1958
in the economy.\textsuperscript{1} Prices, both wholesale and retail, were rising, but at annual rates of less than two per cent. Retail sales, motor vehicle registrations and factory production were all rising, and unemployment was declining slightly. As of 30 June, 1959, there were still 65,700 registered for employment compared with 67,100 a year before. Vacancies had increased by 4,000 to 20,000 as of the same date. This marked the third year of a slight excess supply of labour, but there were signs that this would be reduced in the coming year.

These internal indicators plus the improved balance of payments position in 1958-59, encouraged the Treasurer to state that: 'Our current prospects are accordingly more favourable than those of twelve months ago'.\textsuperscript{2} In fact, certain statements in the Budget Speech suggest the possibility of a recurrence of inflationary pressures if the expansion proceeded too quickly. The Budget policy was 'not aimed at giving any general boost to spending...rather...some carefully-chosen incentives to effort and enterprise and...a degree of restraint...'.\textsuperscript{3} The Speech re-affirmed the Government's desire to see expansion which was founded on internal stability. In spite of the Government's expressed desire to reduce the rate of Budget spending, the Treasurer estimated an increased outlay on goods and services plus transfers of 6.2 per cent over that of 1958-59, including an extra $19m. for capital works and $70m. for payments to the states. The actual change in spending, in real terms,

\textsuperscript{1} The available statistics would probably give some indication of economic trends ending May or June.


\textsuperscript{3} Ibid., p.20.
was an increase of 1.1 per cent as cost increases offset much of the higher level of spending. (See Table I-K below).

**TABLE I-K**

COMMONWEALTH BUDGETARY EXPENDITURE AND TRANSFERS IN AUSTRALIA 1958-59 TO 1963-64
(Millions of 1948-49 Dollars)

<table>
<thead>
<tr>
<th>Year</th>
<th>Category of Expenditure</th>
<th>Percentage Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Current (i)</td>
<td>Capital (ii)</td>
</tr>
<tr>
<td>1958-59</td>
<td>841</td>
<td>60</td>
</tr>
<tr>
<td>1959-60</td>
<td>851</td>
<td>65</td>
</tr>
<tr>
<td>1960-61</td>
<td>897</td>
<td>67</td>
</tr>
<tr>
<td>1961-62</td>
<td>988</td>
<td>73</td>
</tr>
<tr>
<td>1962-63</td>
<td>1012</td>
<td>76</td>
</tr>
<tr>
<td>1963-64</td>
<td>1081</td>
<td>80</td>
</tr>
</tbody>
</table>

(i) Fixed Capital Expenditure on new Assets
(ii) Loans for Capital Works and Housing.

There was only one major tax change in 1959-60, a rebate of 5 per cent on total personal income tax liability based on present rates. This was not primarily designed to stimulate expansion but was granted 'to give relief where the case is strongest and where the greatest economic and social advantage appears to be'.¹ The increase in personal disposable income would be $36m. in the current year. Other minor tax measures included increased personal allowances, company allowances and an increase in depreciation allowances for mining companies. The total cost to revenue of these changes is listed in Table I-L.

The state of the economy which, 'at the beginning of 1959-60 continued to be somewhat uncertain', changed rapidly.² All indicators of economic activity showed

### TABLE I-L

**COMMONWEALTH DISCRETIONARY TAX CHANGES**

1958-59 TO 1963-64

(Millions of 1948-49 Dollars)

<table>
<thead>
<tr>
<th>Year</th>
<th>Personal Income</th>
<th>Company Income</th>
<th>Sales/Excise</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1958-59</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1959-60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1960-61</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Budget</td>
<td>+19</td>
<td>+16</td>
<td></td>
<td>-3</td>
<td>+32</td>
</tr>
<tr>
<td>Nov. x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feb. x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1961-62</td>
<td>-10</td>
<td>-6</td>
<td>-13</td>
<td>-3</td>
<td>-32</td>
</tr>
<tr>
<td>Budget</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1962-63</td>
<td>-3</td>
<td>-1</td>
<td>-9</td>
<td></td>
<td>-13</td>
</tr>
<tr>
<td>1963-64</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

x Increased sales tax rates on automobiles were applied in November, 1960 and removed in February, 1961. The estimated impact is based on sales of the taxable goods in the period.

xx The Treasury Information Bulletin for April, 1962 estimates the impact of the February 1962 sales tax rate reductions on revenue. For the personal income tax estimate, see Chapter VII.

xxx The investment allowance was proposed in February, 1962 and would have some impact on revenue in 1961-62.

substantial gains during the year. There was a notable increase in consumer spending on durables and a real increase in private fixed capital spending of 11.5 per cent. Domestic prices continued to increase at rates above those of the previous year, and, by June 1960, the consumer price index was 4.7 per cent above that of a year ago. The annual increase in the work force was absorbed into gainful employment in addition to the absorption of almost 19,000 unemployed.1 By the end of the year, the

index of labour demand showed a situation of full employment - in a setting of price instability.

In early February, the Treasurer, Mr. Holt, admitted that there were inflationary pressures but there was 'no crisis'.¹ On 25 February, 1960, the Government announced the removal of most of the restrictions on imports as a means of augmenting the supply of domestically produced goods and thereby reducing some of the demand pressure. 'The position was not critical but it held a threat of serious instability if certain trends were allowed to develop further'.² Part of the inflation was of a cost nature with employers willing to pay higher wages to maintain their labour force in a period of rising demand. Arbitration tribunals, said The Australian Economy 1960, were facilitating the cost-price spiral in their attempt to equalise wages in the country. The Government was therefore justified in stating that a wage increase in early 1960 would only accelerate the development of instabilities.

Monetary policy offered only limited assistance to arresting the inflation. The central bank called in statutory reserve deposits and requested that the trading banks curtail new loans, but at the same time they were promoting low interest rates through their support of the bond market. Besides, there were non-bank sources of funds and it would take very strong measures to curtail this trend.³

---

¹ Quoted in the Australian Financial Review (hereafter referred to as the A.F.R.), February 18, 1960, p.1.
² The Australian Economy 1960, p.17.
³ The importance of non-bank financial intermediaries as a source of financing is discussed in the R.B.A.R., 1960.
The pattern of economic activity during 1950-60 was described as 'one of continued expansion and prosperity'.\(^1\) The Annual Report of the Reserve Bank noted further that increases in prices during the next year were likely, and that, regrettably, 'many sections of the community are still accepting continued price increases as inevitable'.\(^2\)

With reference to the relaxation of import controls, tighter credit conditions and the reduction of the federal deficit, it was stated that 'the Government expected its measures would produce their effects gradually'.\(^3\) By the middle of 1960, there was little indication that the pace of economic activity was relaxing and the question was being asked: 'Can the boom be sustained without a dangerous degree of inflation?'\(^4\)

Because of other policy objectives, 'a frontal attack on inflation is time and again postponed'.\(^5\) Bowen goes on to argue for 'short, severe action...to end the inflation', incorporating the maximising of investment and minimising of consumption which is 'more direct... than mere cutting of expenditures'.\(^6\) Judging from the trend in private investment at this time, a more 'frontal attack' was called for.

At the time of preparing the 1960-61 Budget, domestic prices were increasing and international reserves declining at an increasing rate. If the latest statistics available for Budget preparation were those of

\(^{1}\) Ibid., p.12.  
^{2}\) Ibid., p.15.  
^{4}\) Bowen, op. cit., p.307.  
^{5}\) Ibid., p.308.  
^{6}\) Ibid., pp.320 and 322.
30 June, the only encouraging sign was a slight decline in private building. There is some evidence that the boom reached its peak at the time of the Budget but the relevant information was of course unavailable when Budget policy was framed.

On 16 August, 1960, the Government announced, in the Budget Speech, increased taxation of companies and the withdrawal of the personal income tax rebate granted the year before. These two measures constituted the main fiscal adjustments on the tax side of the Budget and would increase revenue by $70m. They were designed to provide a cash surplus of $30.9m and 'further than this, to do something towards reducing the current pressure of demand in the economy', since 'by the middle of 1960, it became more generally recognised that something further needed to be done to check the boom'.

On the expenditure side of the budget, both current expenditures and capital expenditures on new assets increased 3.1 per cent in real terms. Loans for capital works and housing shouldered the burden of the Government's anti-inflation expenditure policy, being reduced 11.0 per cent. As in 1959-60, the net effect of the budget in 1960-61 was income-destroying, although the impact was considerably less than in the earlier year.

During the next three months, the Government saw little evidence to suggest that their deflationary

---

1 The restrictive policy had been anticipated in the press, but it was condemned as '...proof of the failure of overall policy'. A.F.R., August, 11, 1960.


4 See page 172 of Chapter V.
policies of February and August were curbing the expansion. By mid-November, the Government would have, at best, preliminary figures for the quarter ending September, which would show the following increases over the previous year (in current terms).

- **Private Fixed Capital Expenditure**: +20.5%
- **Personal Consumption**: +6.1
- **Durable Goods Consumption**: +10.8
- **Retail Prices**: +4.4
- **Minimum Wages**: +5.3

**Sources:** *Australian National Accounts (Quarterly), Monthly Review of Business Statistics.*

In addition to these annual changes, the following trends were probably discernible: reserves falling quickly; private building, new car registrations and production showing mild increasing trends, and retail sales levelling off. In short, there was no indication of a firm reduction in domestic spending, and although, in retrospect, the demand pressure had eased, it is questionable if this fact was clear in October-November.

The inter-budgetary measures of 17 November were rather more dramatic than the Budget by virtue of their timing and nature. The major fiscal measure was an increase in the sales tax on automobiles to 40 per cent and on motor cycles to 25 per cent. Previous rates were 30 and $16\frac{1}{3}$ per cent respectively. The Government also announced the partial non-deductibility of interest costs for certain companies, and proposed legislation to increase the ratio of public securities to total assets of life assurance companies to 30 per cent. In addition, the Government re-affirmed its support for the tight money policies of the Reserve Bank whereby a substantial reduction in advances was to be made within a few months.
As the *Australian Economy* 1961 remarked, '...these measures had a considerable impact on the business world'.

This announcement accentuated the decline in some sectors and probably initiated the decline in others. Personal consumption and private investment fell and even just six weeks after these measures were proposed, there was a strong upward trend in the number of registered unemployed. The deflationary tendencies persisted and increased, and it was generally felt that the November measures had been introduced to protect the balance of payments at the cost of unemployment and stagnation. On 28 February the Government withdrew the sales tax increase of three months ago. At the time of this decision, most sectors of the economy were feeling the effect of the previous deflationary measures, and by 30 June, 1961, there were more than 100,000 unemployed with the demand for labour index at its lowest post-war level.

The Reserve Bank remarked that 'This sudden change in the employment situation seems to have reflected the check to rising demand and some reaction to the high level of imports in 1960 rather than a loss of confidence in the longer term outlook'. In analysing the expansion-contraction transformation of the economy, the Report went on to say that 'The situation changed abruptly about the middle of the year. The policy steps taken in mid-November are commonly seen as the force initiating the change but the effect may perhaps better

---

be viewed as an earlier and less drastic adjustment than might have occurred....\(^1\) Whether or not the expansion would have settled to a more stable growth path or accelerated into hyper-inflation, remains a matter of conjecture. The year as a whole was described as 'a period of reaction and readjustment' and one of 'considerable transformation'.\(^2\) By the end of the year, the re-adjustment and transformation were far from complete.

At the beginning of the 1961-62 financial year, the main task of the authorities was 'to get recovery moving soon enough and strongly enough to reduce unemployment substantially'.\(^3\) The first step took place in June when the Commonwealth approved increases in Loan Fund allocations to the states plus an increase in funds for housing. The Budget followed and was presented in the trough of the recession.\(^4\) The unemployment problem was 'the most urgent feature of our present situation. We have always stood for full employment...we put it foremost now in our immediate economic plans'.\(^5\)

The main line of attack against rising unemployment was an estimated increase in federal expenditures of almost 8 per cent. This included increases of $22m. for capital works, $64m. for the states and $55m. for social services. The actual increase was greater, owing to

---

1. Ibid., p.18.
further expenditure on capital works and payments to the states during the year. Table I-K shows that the real increase in Commonwealth budgetary expenditures was 10.1 per cent. Aside from some minor allowances, the only tax concession was a reduction in sales tax rates on certain goods at a cost to revenue of about $18m., designed to 'encourage buying of certain classes of goods...and by that means, to assist a number of industries which have had to reduce output and employment'. The net impact of the budget was substantially income-creating.

The economic climate brightened somewhat, and by the December quarter of 1961, private building, retail sales, new car registrations and factory production all showed increases. Reserves, now above the 1960 peak, were increasing and retail prices were falling at a rate of one per cent per annum. The labour market, however, was slow to respond to the upturn, and in January the Prime Minister stated that 'the existing volume of unemployment cannot be allowed to persist'.

This was a portent of things to come, and on 8 February the Government announced its expansion program to stimulate spending and provide employment. The measures introduced were as follows:

Taxes: (a) a five per cent rebate on personal income tax liability to be applied in the last four months of 1961-62, (b) a company investment allowance of 20 per cent.

---

1 Ibid., p.12.
2 See page 158 of Chapter V.
4 The Australian Economy, 1962.
(c) a reduction in the rate of sales tax on motor vehicles from 30 to 22½ per cent.

Transfers; (a) an increase in unemployment benefits.

Spending; (a) the states were granted $20m. for employment creating projects,
(b) housing advances were increased $10 then $15m.,
(c) the Loan Council approved more funds for semi-government authorities,
(d) the Development Bank received an additional $10m. in capital,
(e) progress was accelerated on all federal works where possible.

The loss in Commonwealth revenue of these tax changes is seen in Table I-L. The impact of the 'extra-budgetary' expenditures can be seen by comparing estimated and actual expenditure for 1961-62.

<table>
<thead>
<tr>
<th>Expenditure Item</th>
<th>Estimated Increase</th>
<th>Actual Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Services</td>
<td>+55m (8.4)</td>
<td>+69m (+10.4)</td>
</tr>
<tr>
<td>Departmental</td>
<td>+18m (7.9)</td>
<td>+21m (+ 9.1)</td>
</tr>
<tr>
<td>Payment to States</td>
<td>+64m (9.1)</td>
<td>+87m (+12.3)</td>
</tr>
<tr>
<td>Capital Works</td>
<td>+22m (7.8)</td>
<td>+41m (+14.6)</td>
</tr>
</tbody>
</table>

Note: Amounts are in current dollars.

The effect of the 'baby budget' in February was widespread and would have, according to one observer, a 'very substantial impact on expenditures'. The measures were formulated to promote quick expansion and, as the Reserve Bank's Annual Report noted, expedite a recovery which up to that time was not encouraging. One of the major reasons for the slow upturn was that 'funds which might have been available for expenditure were employed to reduce indebtedness and increase liquidity, tending to delay the recovery of production and production.'

---

employment'. The infusion of a substantial amount of disposable income through the income tax concession, would help to remove the barrier to consumer spending.

The pace of the recovery continued and gathered strength as consumption and private investment spending advanced in the second half of the financial year. Unemployment declined but was still 3.0 per cent of the work force by June 30. The Government felt that the economy was moving to a 'strong position both internally and externally'. Externally, the position was strong with an export surplus of $250m. Internally, however, the only reason for optimism was the fact that the trough of the recession had passed.

The task in 1962-63, according to the Reserve Bank was the 'bringing back into effective production our remaining unused resources and of ensuring a rate of growth sufficient to employ the growing work force'. Reviewing economic developments in 1962, J.O.N. Perkins suggested that expansionist policies would be required in the coming year since there was some indication that the recovery was weakening. The Budget, he said, brought no public enthusiasm since it lacked 'popular' policies. The deficit, nevertheless, reflected a high rate of spending; an expansion policy which was desired since it would permit the undertaking of some long overdue public works.

---

1. R.B.A.R., op. cit., p.5. Unlike 1957-8, there was a rise in the proportion of personal income saved in 1961-2.
The Budget Speech itself reflected the Government's desire to reduce the level of unemployment. The Treasurer announced a deficit of $236m. 'signifying the determination of the Government to follow through with its expansion program. Unemployment has to be reduced further'. There would be no tax concessions for the coming year since the full impact of the February reductions would be brought to bear on federal revenue in the current year. The Treasurer estimated the full year effect of these to be $150m., considerably more than the aggregate full year effect when the measures were announced in February. The Government also felt that more tax reductions could lead to over-expansion now or in the future, and it was wiser to limit any stimulus to spending. Two important expenditures were $25m. to the states for employment-creating works and $54m. to be spent on development projects in Australia. The latter was not fully realised and the total real increase in 1962-63 was considerably less than in the previous year. As a consequence, the income-creating effect of the budget was limited.

The pace of economic activity during 1962-63 was not as rapid as the Government desired. Unemployment fell, but levelled off in the second quarter before resuming its decline. Automobile sales were stagnant and factory production fluctuated about a mild upward trend. Private fixed capital expenditure and personal consumption were up 9.4 and 6.4 per cent respectively in real terms. The expansion 'could have been more vigorous' since 'full utilisation of resources had not been attained'.

Australian Economy 1963, also noted the slow recovery and supported the view of the Reserve Bank that there was a strong preference for liquidity; a preference which was causing some concern for the Reserve Bank.¹

Professor Hancock placed the blame for this hesitant recovery on fiscal policy. 'The aggregate level of expenditure merits some comment because of the failure of the expansion measures...since the beginning of 1962 to promote greater general recovery'.² Not only was federal expenditure just keeping pace with its earlier rate of growth, but revenue policy had done little to assist private spending. This attitude was implied also by Perkins in a study of anti-cyclical policies during 1960-1964.³ A few months later, H. Edwards and N. Drane supported the Government’s policy in saying that 'its various parts are mostly in accord with sound principles'.⁴ With direct spending on goods and services and benefits to those with a high marginal propensity to consume, the expenditure side of the budget would have considerable impact.

By the beginning of 1963-64, it appeared that the problem of unemployment was no longer a central issue in drafting fiscal policy in spite of the small reduction of only 12,000 registered unemployed from one year ago. There was certainly some feeling that the level of jobless persons was still too high.⁵ The past year, in

¹ Ibid., p.16.
⁵ Ibid., and R.B.A.R., op. cit., p.5.
the Treasurer's mind, was one of 'strong, continuous growth' with favourable possibilities for the coming year.\(^1\) It had been a year of stability of prices, a condition which the Treasurer had, in the past, considered of paramount importance to growth. The Budget of 1963-64 was outlined as a growth one, having a 'strong, expansive effect' which would stem from an estimated 10 per cent increase in expenditures.\(^2\) In real terms and including allocations to the states, the increase was only 6.0 per cent. The major tax change was a reduction in the sales tax on some foodstuffs which, according to the Treasurer, was designed to lower the cost of living and encourage consumption of certain foods produced domestically. For personal incomes there was a slight change in the rate structure and increases in allowances. Finally, businesses were given two small concessions: the deduction of certain expenses and an increase in the retention allowance for private companies.

The expansion which ensued encouraged one observer to state in March 1964, that the 'economy is sounder than at any time since the Second World War'.\(^3\) Six months later, another observer remarked that 'the Australian economy is once again at full employment'.\(^4\) Various economic trends at the end of 1963-64 pointed to the long-desired objective of internal and external

---

2. Ibid., p.16.
stability. Whether or not this fine-line of stable expansion could be maintained was again in the minds of the authorities.¹

In a span of five years, there had been nine major changes in federal economic policy: five annual budgets and four inter-budget policy changes. Many of these changes were criticised and a sample of academic and journalistic appraisal is presented below.² Much of the criticism was directed towards the ill-timing of measures and their magnitude. They were usually considered too late and either too large (November 1960) or not large enough (August 1961) in terms of their impact on the private sector. Although there is a good deal of speculation about what might have happened if the Government had done something else, it must remain, for the most part, speculation.

What can be said is that the cycle which did occur was probably precipitated by the firm intention of the Government to reduce the internal inflation through the rather novel approach of trying to flood the domestic market with imports and so reduce the pressure on scarce supplies. Given certain assumptions, this operation might have been performed successfully. But there were three important questions involved; would private

² '...the Budget makes very little contribution to recovery...' Hall, 'The Australian Economy August 1961' E.R., Sept. 1961, p.270. Referring to the February measures, Professor Karmel remarked '...they instill no great confidence in the Commonwealth's economic policy', op. cit., p.11. Comments in the A.F.R. reflect journalistic attitude at the time; '...the Government timed its November measures badly', Feb. 16, 1961; '...there has been a bad mistake, a serious miscalculation of the temper of the economy', Feb. 23, 1961 (from an editorial entitled 'To the Brink of Despair'.)
### TABLE I-N

**ECONOMIC INDICATORS**  
1958-59 TO 1963-64

#### QUARTERLY

<table>
<thead>
<tr>
<th>Year</th>
<th>Quarter</th>
<th>Consumer Price Index 1</th>
<th>Wage Price Index 2</th>
<th>Demand for Labour Price Index 3</th>
<th>Export Price Index 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1958-59</td>
<td>1</td>
<td>97.9</td>
<td>96.7</td>
<td>98.2</td>
<td>86.6</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>98.7</td>
<td>96.8</td>
<td>98.9</td>
<td>85.1</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>99.1</td>
<td>97.1</td>
<td>98.5</td>
<td>86.6</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>99.6</td>
<td>99.3</td>
<td>98.7</td>
<td>95.5</td>
</tr>
<tr>
<td>1959-60</td>
<td>1</td>
<td>100.0</td>
<td>100.0</td>
<td>98.9</td>
<td>100.0</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>100.6</td>
<td>103.1</td>
<td>99.5</td>
<td>102.3</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>101.4</td>
<td>104.4</td>
<td>99.4</td>
<td>97.5</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>103.2</td>
<td>104.9</td>
<td>99.8</td>
<td>97.4</td>
</tr>
<tr>
<td>1960-61</td>
<td>1</td>
<td>104.4</td>
<td>105.3</td>
<td>100.0</td>
<td>89.9</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>105.1</td>
<td>105.9</td>
<td>99.8</td>
<td>89.9</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>105.9</td>
<td>106.7</td>
<td>98.0</td>
<td>92.9</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>106.6</td>
<td>107.1</td>
<td>96.8</td>
<td>96.4</td>
</tr>
<tr>
<td>1961-62</td>
<td>1</td>
<td>106.4</td>
<td>109.5</td>
<td>96.6</td>
<td>94.4</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>106.0</td>
<td>109.4</td>
<td>96.7</td>
<td>93.4</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>105.8</td>
<td>109.4</td>
<td>97.5</td>
<td>96.3</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>105.7</td>
<td>109.5</td>
<td>97.7</td>
<td>96.6</td>
</tr>
<tr>
<td>1962-63</td>
<td>1</td>
<td>106.0</td>
<td>109.4</td>
<td>98.0</td>
<td>93.4</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>106.1</td>
<td>109.6</td>
<td>97.7</td>
<td>97.3</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>106.1</td>
<td>109.8</td>
<td>98.2</td>
<td>104.3</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>106.5</td>
<td>111.4</td>
<td>98.3</td>
<td>108.3</td>
</tr>
<tr>
<td>1963-64</td>
<td>1</td>
<td>106.6</td>
<td>111.9</td>
<td>98.6</td>
<td>107.2</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>106.6</td>
<td>112.3</td>
<td>98.9</td>
<td>116.2</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>107.2</td>
<td>112.5</td>
<td>99.5</td>
<td>119.2</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>108.3</td>
<td>116.7</td>
<td>99.7</td>
<td>109.2</td>
</tr>
</tbody>
</table>

**Sources:** See Table I-C  
**Note:** Columns 1, 2, and 4 are based on September (1959) Quarter = 100.0

#### ANNUAL

<table>
<thead>
<tr>
<th>Year</th>
<th>Budgetary Expenditure as a Per Cent of G.D.E.</th>
<th>Taxation Revenue as a Per Cent of National Income</th>
<th>Per Cent Change in Real Personal Consumption</th>
<th>Per Cent Change in Real Private Fixed Investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1958-59</td>
<td>22.0</td>
<td>23.0</td>
<td>+ 3.6</td>
<td>+ 1.8</td>
</tr>
<tr>
<td>1959-60</td>
<td>21.3</td>
<td>22.9</td>
<td>+ 6.7</td>
<td>+11.5</td>
</tr>
<tr>
<td>1960-61</td>
<td>21.3</td>
<td>24.6</td>
<td>+ 1.8</td>
<td>+ 7.2</td>
</tr>
<tr>
<td>1961-62</td>
<td>23.7</td>
<td>23.7</td>
<td>+ 2.4</td>
<td>- 5.0</td>
</tr>
<tr>
<td>1962-63</td>
<td>22.3</td>
<td>22.3</td>
<td>+ 6.4</td>
<td>+ 9.4</td>
</tr>
<tr>
<td>1963-64</td>
<td>22.5</td>
<td>22.3</td>
<td>+ 4.8</td>
<td>+ 9.8</td>
</tr>
</tbody>
</table>

**Sources:** See Table I-C.
DIAGRAM I-D

SELECTED ECONOMIC INDICATORS
1958-59 TO 1963-64

Demand for Labour Index

Commw. Spending as % of G.D.E.
Taxation as % of N.N.I.

Unemployment as a % of The Work Force

Quarterly Percentage Change in The Consumer Price Index

June 1959  June 1963
consumers and businesses direct their spending away from domestically produced goods towards imports in such a magnitude to reduce the demand pressure; would this flow of imports bring on balance of payments problems; and, how long would it take for such a plan to have an impact on the economy?

To the first question, there was no definite answer. On the second question, the Government was sure that their level of reserves could absorb the import impact. What they could not foresee was the rate of decline of reserves and the speculation that might ensue. To the third question the answer is indefinite. Professor Karmel has mentioned a lag of 6 to 12 months while Waterman's implied estimate is 3 to 4 months. The Government was therefore employing a technique about which little was known, and, having decided on this course, was prepared to stand by it.

It was previously mentioned that many of the Government's policies were criticised but it should be noted that criticism varied to some extent. For instance, shortly after the presentation of the 1960-61 Budget, it was reported that the effect of the new policies would be a 'very large and indeed powerful depressant'. The higher revenue and lower rate of spending would result in a surplus having 'substantial deflationary implications'. Later comments on this Budget suggest that the deflationary effects were negligible. The

1 Karmel, op. cit., p.8 and Waterman's thesis, pp.17 and 18 of draft chapter XI.
November measures were criticised as being too strong, their impact occurring after the boom had passed. These ill-timed deflationary policies were a combination of the Government's impatience and inflexibility. They were impatient in allowing only three months for the deflationary tax measures to have some effect, and inflexible in maintaining their course of action with regard to the relaxed import restrictions.

There may be evidence to suggest that anti-recession policies were constrained by a preoccupation with price stability and external balance, but there was another problem: that of interpreting trends in the economy during these years.\(^1\) Both Professor Hancock and Dr Lydall have commented on this problem of a lack of current statistics from which evaluations can be made and policy suggested.\(^2\) It would be folly to expect the government to change its policy when certain indicators showed an upturn or decline for one or two months only. They must rely on the aggregate movement of many indicators or longer run trends in certain indicators of activity, both of which involve lags between change and publication of the change. There was a good deal of criticism of the 'stop-go' policies of the Government. Such policies are justifiably criticised if they produce a series of recessions and inflations. Flexibility on the other hand, is commendable.

---

2. Hancock, op. cit., 'The dearth of quickly available indicators of the present and prospective levels of economic activity is a major deficiency in Australian statistical services', p.12; and Lydall, op. cit., '...there is still not a sufficient number of quick indicators of the state of the economy', p.11.
The main criticism then, of the Government's policy was the reliance on monetary policy and unrestricted imports to combat inflation. The re-imposition of some import controls together with a mild but widespread deflationary budget in 1960-61 would have been more appropriate, regardless of the criticism that would have been made about reversing import policy. Mild approval is given to the Government's policy during the period January 1962 to June 1964 when federal tax and expenditure policies contributed largely to the recovery. Although 'stop-go' methods of stabilisation are unacceptable, there is something to be said for flexible 'slower-faster' fiscal policy, given the capricious nature of the Australian economy.
PART II

THEORETICAL ASPECTS OF MEASURING FISCAL POLICY PERFORMANCE
CHAPTER II

BUDGET RESULTS AND FISCAL POLICY ANALYSIS

In post-Keynesian discussions of fiscal policy, the view is often held that the government can stimulate demand by incurring a budget deficit and curtail demand by incurring a budget surplus. Attention is thus focussed on the budget result as the central concept of fiscal stabilisation policy. It therefore seems natural to begin a discussion of measures of fiscal performance with an investigation of the possibilities of using budget result concepts.

(a) THE BUDGET RESULT AS A MEANS OF FISCAL POLICY

To avoid possible misunderstanding, it should be stressed that in looking at budget result concepts as measures of fiscal performance, there is not, in any sense, a commitment to the naïve view that the budget result is in itself a means of fiscal policy. This naïve view, that the budget result is a means of fiscal policy, has been critically analysed by Bent Hansen in his book, The Economic Theory of Fiscal Policy.\(^1\) The key to Hansen's argument is to be found in the definition of a fiscal parameter or means of fiscal policy. A fiscal parameter is some variable over which the government has administrative control.\(^2\) Tax revenue is therefore not a parameter since a change could be brought about by one or more variables, some of which are outside the administrative control of the government.

---


\(^2\) Ibid., p.35.
Turning to the budget as a whole, it can be seen that if the budget contains revenue or expenditure items which are not parameters, then the budget result cannot be considered as a parameter or means of fiscal policy. However, even if it is assumed that all components of the budget are pure fiscal parameters, the budget result would still be a determined or endogenous variable, not a fiscal parameter. Consider the expression for the budget result

\[ B = G - T \]

where \( G \) is total budget expenditure and \( T \) is total budget tax revenue. In this budget identity, it is obvious that not all the variables can simultaneously be regarded as parameters. If \( B \) and \( G \) are controlled, \( T \) must be endogenously determined, and similarly for \( G \), if \( T \) and \( B \) are controlled. Hence, if, as supposed above, \( G \) and \( T \) are pure fiscal parameters, it follows that \( B \), the budget result, must be an endogenous variable.

Another way of demonstrating this point is to consider a simple model of the economy which includes an expression for the budget result. Defining \( Y \) as national income, \( I \) as private investment, \( G \) as government spending, \( T \) as taxes, \( C \) as consumption and \( B \) as the net budget result, the model is:

\[ C = a + b(Y-T) \quad [1] \]

\[ B = G - T \quad [2] \]

\[ Y = C + I + G \quad [3] \]

where \( a \) is a constant and \( b \), the marginal propensity to consume. It is obvious that the identity \([2]\) is redundant; for any change in \( B \) requires a change in \( G \) and/or \( T \), both of which are included in \([1]\) and \([3]\). The budget result or balance is an endogenous variable and cannot therefore be a means of fiscal policy.
THE BUDGET RESULT AS AN INDICATOR OF FISCAL POLICY

If the budget result is not a means of fiscal policy, can it nevertheless be used as an indicator of the effect of fiscal policy? Can it be considered, in Hansen's words, 'an index which shows the changes in the economic situation...that are brought about by certain changes...in the fiscal policy parameters'? In order to explore this possibility, the form of the budget must be considered.

(i) Alternative Budget Concepts

There are several ways of presenting a budget and it is not altogether clear what type of budget is most suitable if the budget result is to be considered as a possible indicator of fiscal policy. There has been much discussion in the United States (and recently some in Australia), as to whether or not a national accounts, cash or accrual budget is the most appropriate for purposes of economic analysis. In the United States, this problem received considerable attention during a symposium on budget result concepts. The most important questions considered were the items to be included in the budget and how the timing of the budget components reflect increases or decreases in private demand.

Opinion differed on these matters, with some participants in the symposium suggesting that the budget

---

1 Hansen, op. cit., p.49.

2 In Australia, this question has been discussed in recent Budget Speeches and Treasury Information Bulletins. A critical examination of recent Commonwealth thinking of the question is to be found in R.H. Wallace and M. Artis, Fiscal Policy in Post-War Australia, A.N.Z.A.A.S., Jan. 1966, pp.14-21.

should include all transactions of the public sector taking into account the net balance of government loans. Professor Shoup advanced the proposal that no item be included in the budget if nothing can be done about it for fiscal policy purposes.¹ On the question of timing, it was suggested that the impact of corporation taxes, in terms of the effect on investment decisions, occurs when the liability accrues, not when payment is actually made.² For the personal income tax, the effect on spending is likely to occur at the time of payment. If so, a fiscal policy budget should include corporation tax accruals and personal income tax payments. Expenditures also create a timing problem. If capital works are paid for as each section of a project is completed, the actual annual or quarterly expenditure represents the amount of purchasing power of budget origin received by the private sector. It was pointed out during the symposium, that payment upon completion of a project might well reflect wages and salaries paid out by the contractor during the past year or more.

These and other problems associated with alternative budget concepts are still being debated and no general consensus has been reached. Ideally, all expenditure and tax components, of a fiscal nature, which affect the level of demand should be included in the budget in the period when their impact on demand occurs. For practical purposes, this is not always possible due to insufficient empirical data on the demand-increasing and demand-reducing effects of budget components.

¹ Ibid., p.137.
² Ibid., p.127.
(ii) Simple Budget Result

Perhaps the simplest possible indicator of fiscal performance is the absolute value of the budget result. Thus, if the budget result is a deficit, it might be thought that the budget is expansionary. Similarly, if the budget result is a surplus, a contractionary effect might be expected. Empirically, an advocate of this measure would expect to find a negative correlation between budget surplus and the change in national income.¹

It is easy to see, however, that such an indicator cannot possibly provide reliable results. Suppose, for example, that this year’s surplus is less than last year’s, and was achieved by reducing tax rates. Clearly, a rise rather than a fall in national income should be expected. A similar analysis applies to budget deficits.

Another frequently cited indicator of fiscal policy is the change in the budget result from one period to the next. In this analysis, an increased surplus is said to be restrictive while a reduction is considered to be expansionary. Empirically, this should be indicated by a negative correlation between the change in the surplus and the change in national income.²

The use of the change in the budget result to indicate the expansionary or contractionary nature of fiscal policy is based on the naïve concept that all government expenditures and taxes are equal in terms of their per dollar effect on demand. It is difficult.

¹ For deficits, one would expect a positive correlation between a deficit and a change in national income.
² For deficits, one would expect positive correlation between a change in a deficit and a change in national income.
however, to imagine that one dollar of public works expenditure increases demand to the same extent that one dollar of estate tax reduces demand. Such 'equality' of expenditure and taxation components of the budget result provides no reliable estimate of the economic impact of the budget.

The inadequacy of using the actual change in the budget result to indicate fiscal policy can be demonstrated in the following manner. The effect on national income of an increase in public works expenditure is given by

$$\Delta Y = \frac{1}{1 - c} \cdot \Delta G_k$$

where $\Delta G_k$ is the increase in public works expenditure and $c$ is the marginal propensity to consume. The effect on national income of an increase in the estate tax is given by

$$\Delta Y = \frac{1}{1 - c} \cdot c(\Delta T_e)$$

where $\Delta T_e$ is the increase in estate tax revenue. If these were the only two components of the budget, their combined effect on national income is given by

$$\Delta Y = \frac{1}{1 - c} \cdot \Delta G_k + \frac{1}{1 - c} \cdot c(\Delta T_e)$$

Rewriting this

$$\Delta Y = \frac{1}{1 - c} \left( \Delta G_k - c \cdot \Delta T_e \right)$$

it is immediately seen that the bracketed portion of this expression, $(\Delta G_k - c \cdot \Delta T_e)$, is an indicator of the effect of the change in the budget on economic activity. This budget result is, of course, different from the change in the absolute budget result discussed earlier. The expression $(\Delta G_k - c \cdot \Delta T_e)$ is a weighted budget result, the weights of the components corresponding to the 'first round' effect on demand of changes in budget components.
(iii) The Weighted Budget Result

The important difference between the simple and weighted change in the budget result can be illustrated by an example. Suppose a budget contained three expenditure components; welfare payments \( (G_w) \), interest payments \( (G_i) \) and expenditure on goods and services \( (G_e) \). Revenue components for the same budget are personal income tax \( (T_p) \) and company income tax \( (T_c) \). Two hypothetical budget programs for consecutive years are as follows.

<table>
<thead>
<tr>
<th>Year 1 ($ m.)</th>
<th>Year 2 ($ m.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>( G_w )</td>
<td>10</td>
</tr>
<tr>
<td>( G_i )</td>
<td>20</td>
</tr>
<tr>
<td>( G_e )</td>
<td>60</td>
</tr>
<tr>
<td>( T_p )</td>
<td>50</td>
</tr>
<tr>
<td>( T_c )</td>
<td>( \frac{50}{+10} )</td>
</tr>
</tbody>
</table>

The result is a surplus in both years. Under the simple budget criterion, the change in the surplus from \( +10 \) m. to \( +12 \) m. dollars would indicate contractionary policy.

Suppose that appropriate weights or 'first round' responding coefficients are attached to the components of these two budget programs. If these weights are 1.0, 0.5 and 0.75 respectively for the expenditure components \( G_w, G_i \) and \( G_e \), and 0.9 and 0.7 respectively for the tax components \( T_p \) and \( T_c \), the weighted budget components are:

<table>
<thead>
<tr>
<th>Year 1 ($ m.)</th>
<th>Year 2 ($ m.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>( G'_w )</td>
<td>10</td>
</tr>
<tr>
<td>( G'_i )</td>
<td>10</td>
</tr>
<tr>
<td>( G'_e )</td>
<td>45</td>
</tr>
<tr>
<td>( T'_p )</td>
<td>45</td>
</tr>
<tr>
<td>( T'_c )</td>
<td>( \frac{35}{+15} )</td>
</tr>
</tbody>
</table>
The budget result in both cases is a surplus. However, unlike the simple budget result, the weighted budget result declines from one year to the next, indicating an expansionary budget in terms of demand-creation of budget origin. Other examples can be derived to illustrate that an increase in the simple or unweighted budget deficit may be, on a weighted basis, a decline. The change in the simple budget result only indicates the change in the government's 'cash' position. The change in the weighted budget result is an indicator of the net 'first round' effect of the demand-creating and demand-destroying components of the budget.

If the weighted budget result shows an increased deficit or reduced surplus, it can be concluded that there has been a 'first round' increase in demand of budgetary origin. A smaller deficit or larger surplus means a reduction in 'first round' demand of budgetary origin. In this way, the change in the weighted budget result can be employed as an indicator of fiscal policy.

For practical applications of the weighted budget result analysis, there is the problem of determining the value of the responding coefficients. In certain cases, such as social service payments, it seems quite reasonable to assume a responding coefficient of unity. For the company income tax, the problem is slightly more complicated since it is necessary to make assumptions regarding the shifting of the tax. In addition to these problems, the responding coefficients may fluctuate from one period to the next. Expectations and other factors are apt to cause changes in the coefficients for various taxes. In an open economy, some account should be taken of the changing import component of government spending. Wherever possible, changes in the responding coefficients
should be made to account for changes in the 'first round' effect of budget components.

(iv) Criticism of the Weighted Budget Result

In the previous section, it was shown how the weighted budget result could be used as a reliable indicator of fiscal policy. By calculating changes in the weighted budget result from one period to the next, the 'first round' net impact of the budget on demand could be determined. Hansen, however, is more skeptical about the weighted budget result as an indicator of fiscal policy.

Initially in his argument, it is assumed that revenue and expenditure components of the budget are parameters. Since the change in each component is likely to have a different effect on the target variable e.g. employment, demand or prices, there must be a separate examination of each component. For example, consider a budget containing two revenue components $T_1$ and $T_2$ and two expenditure components $G_1$ and $G_2$. If these 'parameters' change, the effect of the change in the budget balance on employment ($N$) is

$$dN = \frac{\partial N}{\partial T_1} \cdot dT_1 + \frac{\partial N}{\partial T_2} \cdot dT_2 + \frac{\partial N}{\partial G_1} \cdot dG_1 + \frac{\partial N}{\partial G_2} \cdot dG_2$$

[8]

For i revenue components and j expenditure components,

$$dN = \sum \frac{\partial N}{\partial T_i} \cdot dT_i + \sum \frac{\partial N}{\partial G_j} \cdot dG_j$$

[9]

Rewriting this as

$$dN = \sum \frac{\partial N}{\partial T_i} \cdot dT_i - (\sum \frac{\partial N}{\partial G_j} \cdot dG_j)$$

[10]

the right-hand side can obviously be regarded as a weighted budget result. The weights for the i revenue components and j expenditure components are the

---

1 Hansen, op. cit., Chapter III, part 4.
corresponding employment multipliers. With a different 'target', the weighted budget result in equation [10] is analogous to that discussed in Section (iii).

Hansen emphasises however, that tax revenue and expenditure components of the budget cannot generally be considered as parameters. The revenue from any one tax, for example, could be changed by a change in one of several 'pure' fiscal parameters; and, for a given change in revenue, the impact on the target variable, e.g. employment, will vary with the underlying parameter change. For a completely rigorous analysis, Hansen suggests that the corresponding pure parameter changes, e.g. tax rates or allowances, must be substituted for each tax and expenditure component in the expression above. Thus,

\[ dN = \frac{2N}{\lambda a_1} \cdot da_1 + \frac{2N}{\lambda a_2} \cdot da_2 + \cdots + \frac{2N}{\lambda a_m} \cdot da_m \]  

where \( a_1, a_2, \ldots, a_m \) are pure parameters which determine one component of the budget. Expression [11] is evidently not a budget result in any conventional sense.

Hansen's criticism of the weighted budget result should not, however, preclude its use as a reasonable indicator of fiscal policy. For such purposes, a weighted budget result of the sort discussed in Section (iii) above, and analogous to Hansen's equation [10], is used. Ideally, the responding coefficients or weights of the components should be varied with the nature of the underlying parameter change. The use of a common weight for e.g. personal income tax revenue can be explained as follows.

Each parameter change has, according to Hansen, a unique effect on some target e.g. demand. In the case
of the personal income tax, the parameter change will also bring about a particular change in tax revenue, corresponding to a particular increase or decrease in personal disposable income. Therefore, if only one parameter is changed (assuming away any built-in flexibility), the effect of the change in the parameter on demand is indicated by the change in tax revenue times the appropriate respending coefficient. This respending coefficient is the marginal propensity to consume out of the change in personal disposable income which has occurred as a result of the change in that parameter.

Suppose there are two parameters and both are changed e.g. a change in tax rates and a change in personal allowances. Each parameter change has a unique effect on demand and on tax revenue. The effect on demand of the two parameter changes is indicated by the sum of the weighted changes in tax revenue. The weights for each tax revenue change are the unique marginal propensities to consume associated with the particular parameter change.

In addition to changes in revenue brought about by changes in the pure parameters, it is very likely that there will be built-in or automatic changes in tax revenue as well. The effect on demand of an automatic change in revenue is the revenue change times the respending coefficient associated with no parameter change.

In general, if \( da_1, da_2, \ldots, da_m \) are changes in pure parameters, each of which has a unique effect on tax revenue \( dT_{a_1}, dT_{a_2}, \ldots, dT_{a_m} \) then the aggregate effect on demand of these parameter changes is indicated by
\[ r_1 \cdot dT_{a_1} + r_2 \cdot dT_{a_2} + \ldots + r_m \cdot dT_{a_m} \]

where \( r_1, r_2, \ldots, r_m \) are the unique responding coefficients associated with the parameter changes \( da_1, da_2, \ldots, da_m \). If \( dT_o \) is the built-in change in tax revenue and \( r_o \) the responding coefficient associated with no parameter change, the total impact of the personal income tax system on demand is

\[ dE = r_o \cdot dT_o + r_1 \cdot dT_{a_1} + r_2 \cdot dT_{a_2} + \ldots + r_m \cdot dT_{a_m} \]

An indication of the effect of personal income tax policy on demand is then the change in tax revenue times a responding coefficient which is a weighted average of the unique responding coefficients associated with each parameter change. It is recognised that the weighted average coefficient would, in practice, vary from year to year since the same combination of parameter changes (and no change) is unlikely to occur in every year. For practical purposes, a reasonable estimate of this weighted average would seem to be the marginal propensity to consume out of disposable income.

Extending this to all components of the budget, the change in the weighted budget result is then an indication of the first round change in demand of budgetary origin. Relating this to conditions in the economy, an evaluation of the stabilising or destabilising effect of the budget on employment or prices is possible.

(c) FISCAL LEVERAGE AS AN INDICATOR OF FISCAL POLICY

The concept of fiscal leverage is an extension of the weighted budget result discussed above. It is defined as the weighted budget result multiplied by the
disposable income multiplier.¹ In 1954, Professor Musgrave employed the concept of fiscal leverage in connection with a new application of the Musgrave-Miller coefficient of built-in flexibility.²

When fiscal leverage is computed on an annual basis, it is assumed that all multiplier effects work themselves out within the year under consideration. On a quarterly basis, the model can be altered to accommodate various multiplier time periods.³ The problem with fixed time periods (annual) is that a payment of wages in late December will have most of its effect the next year (if calendar years are the basis for computing leverage). This is offset to some extent by wages paid late in the previous year.

Fiscal leverage can be used in a number of ways to indicate the performance of fiscal policy. The following subsections explore three possible ways in which fiscal leverage may be useful in making an evaluation of fiscal

---

¹ If \( G_1, G_2, \ldots, G_n \) are the expenditure and transfer components of the budget representing net domestic spending with corresponding coefficients \( r_1, r_2, \ldots, r_n \) and \( T_1, T_2, \ldots, T_m \) are the domestic revenue components of the budget with corresponding coefficients \( s_1, s_2, \ldots, s_m \); then the weighted budget result is \( [(r_1 G_1 + r_2 G_2 + \ldots + r_n G_n) - (s_1 T_1 + s_2 T_2 + \ldots + s_m T_m)] \). This is the 'first round' net demand-creating effect of the budget, which can be negative or positive. Leverage is thus the weighted budget result times the disposable income multiplier \( 1/(1-b) \) where \( b \) is the marginal propensity to consume domestically produced goods and services out of disposable income. Leverage can be viewed as the component of national income generated by the government sector.


³ Musgrave (op. cit.) uses quarterly data and adjusts for varying multiplier time periods.
policy. Each of these methods will later be applied to the Australian economy.

(i) The Musgrave Measures of Fiscal Performance

To measure performance in any recession or recovery year, Musgrave employs the actual change in G.N.P., \( \Delta Y \) and the change in fiscal leverage, \( \Delta L \) to compute one of two coefficients. The first coefficient, \( \alpha_1 \), is defined as the proportion of the otherwise inevitable fall in G.N.P. offset by a change in leverage. The formula is \( \frac{\Delta L}{\Delta L - \Delta Y} \). This coefficient is computed whenever G.N.P. without a change in leverage would have declined. The following diagram illustrates the derivation of this coefficient.

**DIAGRAM II - A**

*Derivation of \( \alpha_1 \)*

\[ A \]
\[ B \]
\[ C \]
\[ D \]
\[ E \]
\[ F \]
\[ G \]

Between one period and the next, G.N.P. has declined from DA to GE, a decline equal to AB. The 'otherwise inevitable' change incorporates the effect of other stabilisation measures. Monetary and other non-fiscal measures are therefore taken as given.
change in leverage ($\Delta L$) is $+EF = BC$, and therefore

without this change, G.N.P. would have declined to GF, a

fall of AC. The proportion of the otherwise inevitable

fall in G.N.P. offset by the change in leverage is

$$\frac{BC}{AC} = \frac{BC}{BC + AB} = \frac{\Delta L}{\Delta L - \Delta Y}$$

which is the formula for $\alpha_1$.

It is possible that, without a change in leverage, G.N.P. would increase. Whenever this occurs, the

coefficient $\alpha_2$ is computed.\(^1\) This is the proportionate increase in the otherwise inevitable rise in G.N.P. owing to the change in leverage. The formula is $\frac{\Delta L}{\Delta Y - \Delta L}$. The following diagram explains the derivation of this coefficient.

**DIAGRAM II - B**

Derivation of $\alpha_2$

\[\text{Diagram showing changes in periods and leverage.}\]

Between one period and the next, G.N.P. has increased from SR to WT, an increase of VT. Leverage has increased by TU; without the change in leverage, the rise in G.N.P. would have been only VU. The proportionate increase in the otherwise inevitable rise

\[^1\text{During a mild recession where G.N.P. increases, or in a weak recovery year, a positive value for }\alpha_2\text{ indicates stabilising performance.}\]
in G.N.P. owing to the leverage change is

$$TU = \frac{\Delta U}{\Delta V} = \frac{\Delta L}{\Delta Y} - \Delta L$$

The formula for the coefficient $\alpha_2$.

The computed values for $\alpha_1$ and $\alpha_2$ are sometimes difficult to interpret. Consider the coefficient $\alpha_1$. A positive value means there has been an increase in leverage which has offset the decline in G.N.P. If $\alpha_1 = 1.0$, the increase in leverage has just offset the otherwise inevitable decline in G.N.P., i.e. the situation where $\Delta Y = 0$. A coefficient greater than unity occurs when $\Delta Y > 0$, i.e. when the otherwise inevitable decline is more than offset. A negative value of $\alpha_1$ means that the change in leverage has intensified the decline in G.N.P. Perfect stabilisation in the literal sense of the word occurs when $\alpha_1 = 1.0$, but in a growing economy, one would presumably look for a value of $\alpha_1 > 1.0$ as an indicator of perfect performance.

The coefficient $\alpha_2$ is applied when G.N.P. without a change in leverage would have increased. A positive value here indicates that the change in leverage has boosted the otherwise inevitable rise. Where, in a growing economy, the rise is very small and there are unemployed resources, a positive value of $\alpha_2$ is clearly desirable. If, however, the change in leverage has pushed G.N.P. over the full employment level, a positive value is not desirable. A reduction in leverage.

---

1. It must be remembered that the coefficient $\alpha_1$, is only applied for positive changes in G.N.P. where the change in G.N.P. is less than the change in leverage.

2. This ignores negative values of the coefficient resulting from a positive change in G.N.P. greater than the change in leverage. In such cases, the coefficient $\alpha_2$ is applied.
resulting in an actual G.N.P. near full employment, would give a negative value of $a_2$, which in this case would indicate good fiscal policy. The value of $a_2$ must therefore be evaluated in the light of existing conditions in the economy.1

A further problem of interpretation arises when the values of $a_1$ and $a_2$ are used to make intertemporal comparisons of fiscal performance. For example, values of $a_1$ equal to 4.0 in one recession and 2.0 in another simply mean that the change in leverage in the first recession offset a greater proportion of the otherwise inevitable fall in G.N.P. than in the second recession. If, in the first recession, the otherwise inevitable fall in G.N.P. was small, -$10m., for example, then the change in leverage had the effect of producing a $30m. rise in G.N.P. If, in the next recession, the otherwise inevitable decline was larger, -$100m., the impact of the change in leverage, given $a_1 = 2.0$, produced a $100m. increase in G.N.P.2 It would appear that the better performance was in the second recession.

Suppose that the values of $a_1$, in the two recessions were both less than unity; for example 0.9 and 0.5. If the otherwise inevitable decline in G.N.P. was small in the first recession where $a_1 = 0.9$, only a small increase in leverage would be required to offset 90 per cent of the decline. If the otherwise inevitable decline in

---

1 Musgrave (op. cit.) was able to apply the coefficient without ambiguity only because the full employment level of G.N.P. was never achieved in the years covered by his study.

2 The coefficient $a_1$ can be expressed $1 - \frac{\Delta Y}{\Delta Y_h}$ where $\Delta Y_h$ is the hypothetical change in G.N.P. given no change in leverage. Since $\Delta Y_h$ in this example is -$100m. and $a_1$ is equal to 2.0, the actual change in G.N.P. is easily computed.
G.N.P. was large, a value of $\alpha_1 = 0.5$ indicates that a substantial increase in leverage was required to offset half the decline. The above coefficients then, are not entirely suitable for making intertemporal comparisons of fiscal policy.

(ii) Measuring the Impact of the Budget in Relation to Full Employment Gross National Product

On the previous page, it was seen that the Musgrave coefficients are sometimes difficult to interpret in a growing economy. In order to obtain a more satisfactory measure of fiscal performance, a third coefficient, $\hat{\delta}$, similar to $\alpha_1$ and $\alpha_2$, can be derived to indicate the effect of fiscal policy on the economy. Here, the change in leverage is employed to measure what proportion of the otherwise inevitable gap between G.N.P. and full employment G.N.P. is offset by the change in leverage. The coefficient $\hat{\delta}$ is equal to $\frac{\Delta L}{(Y_f - Y) + \Delta L}$ where $Y_f$ is full employment G.N.P. The following diagram will explain the derivation of this coefficient.

DIAGRAM II - C

Derivation of $\hat{\delta}$
Between one period and the next, actual G.N.P. has declined from KA to LC. The potential or full employment G.N.P. has risen to LB. Leverage has increased by an amount CD, such that without the change in leverage, actual G.N.P. would be only LD. The proportion of the otherwise inevitable gap between actual and full employment G.N.P. is equal to \( \frac{CD}{BD} \) which is equal to \( \frac{CD}{\Delta L} \). By substitution, this is equal to \( \frac{(LB - LC)}{(Y_f - Y) + \Delta L} \), the formula for \( \theta \). Perfect performance is indicated here by a coefficient of unity. A coefficient of less than unity indicates an insufficient fiscal stimulus; and a coefficient greater than unity indicates excessive fiscal stimulus.

The difference between \( \theta \) and the Musgrave coefficients can be seen in the following simple examples. Suppose \( Y_{t-1} = \$1100m., Y_t = \$900m. \) and \( Y_{t-1} = \$840m. \). If the change in leverage, \( \Delta L \), is \( +\$80m. \), then \( \alpha_1 = 4.0 \) which suggests very good performance. Calculation of \( \theta \), however, reveals that only 28.5 per cent of the otherwise inevitable gap between G.N.P. and G.N.P. was offset. Next, suppose that \( Y_t \) is greater than \( Y_{t-1} \), i.e. \( \$1200m. \), and the change in leverage is \( +\$260m. \). In this case, \( \alpha_2 \) is equal to 2.60 which appears to indicate good performance. The coefficient \( \theta \), however, is 1.63, and clearly indicates that the fiscal stimulus was excessive. Not only then does \( \theta \) indicate to what extent fiscal policy has offset the otherwise inevitable shortfall of resource utilisation, but, more important, it removes the ambiguity of \( \alpha_2 \).

(iii) Fiscal Leverage and Long Run Average Performance

Fiscal leverage can also be used as an indicator of average fiscal policy performance over a number of
periods. This measure uses a technique which was theoretically developed some time ago by Professor Milton Friedman. His approach is basically as follows.

Given that $Z(t)$ is the level of national income including the effect of a full employment policy, $X(t)$ the level of national income excluding the effect of full employment policy and $Y(t)$ the effect or impact of full employment policy, then

$$Z(t) = X(t) + Y(t)$$  \[12\]

Friedman then makes use of the statistical relationship

$$
\sigma_Z^2 = \sigma_X^2 + \sigma_Y^2 + 2\rho_{XY}\sigma_X\sigma_Y \tag{13}
$$

where $\sigma_X$, $\sigma_Y$, and $\sigma_Z$ are the variances of the $X$, $Y$ and $Z$ series and $\rho_{XY}$, the correlation coefficient. It is then demonstrated that the correlation between $X$ and $Y$, $\rho_{XY}$, is of crucial importance. If $\rho_{XY}$ falls between $R = -1$ and $R = -\frac{1}{2}(\sigma_X/\sigma_Y)$, this indicates that, during the period under consideration, full employment policy has been more stabilising than destabilising. If $\rho_{XY} = -1$ the policy has been perfectly stabilising.

In a fiscal policy context, $Y(t)$ can be regarded as the weighted budget result times the appropriate multiplier i.e. fiscal leverage. The variable $X(t)$ then becomes actual G.N.P. minus leverage. By transforming $X(t)$ and $Y(t)$ into deviations from trends, this technique can be used to indicate average fiscal performance in a growing economy.  \[2\]

---


2 Ibid., p.122.
(d) **THE WEIGHTED BUDGET RESULT AT FULL EMPLOYMENT AS AN INDICATOR OF FULL EMPLOYMENT ADEQUACY**

In addition to deriving the coefficient \( \delta \), the weighted budget result concept can be used in a slightly different manner to indicate fiscal policy performance in achieving full employment gross national product.\(^1\) (G.N.P.\(_f\)). This particular measure involves calculation of the weighted budget result at G.N.P.\(_f\) (denoted by \( M_{fa} \)) and comparing it with the budget result needed to obtain G.N.P.\(_f\). The latter budget result is denoted by \( M_{fn} \). The full employment adequacy of fiscal policy is indicated by the ratio \( M_{fa}/M_{fn} \), a value of 1 indicating perfect policy.

The weighted budget result at full employment (\( M_{fa} \)) is calculated by applying the appropriate respending coefficients to full employment tax receipts, keeping expenditure (except unemployment benefits) at their actual level. Full employment tax receipts can be estimated by increasing actual receipts by a percentage equal to the ratio G.N.P.\(_f\)/G.N.P. times the average built-in elasticity of the tax.\(^2\) Unemployment benefits at G.N.P.\(_f\) are determined by the level of seasonal and frictional unemployment at G.N.P.\(_f\).

The calculation of \( M_{fn} \), the budget result needed to reach full employment, is next. In order to make this calculation, certain assumptions about private investment and consumption are required. Investment at

---

1 This application of the concept of a weighted budget result is to be found in Musgrave, op. cit., pp.216-19. The full employment budget result has also been used to measure discretionary fiscal policy. This will be discussed in the next Chapter.

2 Other methods of adjustment are possible. See Musgrave, op. cit., p.216.
G.N.P.\textsubscript{f} can be assumed equal to investment at actual G.N.P. Or, the ratio of investment to G.N.P.\textsubscript{f} can be assumed equal to the actual ratio of investment to observed G.N.P. Consumption at G.N.P.\textsubscript{f} can be treated in this latter manner.\\(^1\)

Assuming that government spending is to be used to reach G.N.P.\textsubscript{f}, government spending needed to reach G.N.P.\textsubscript{f} is equal to the estimated level of G.N.P. at full employment minus investment and consumption at G.N.P.\textsubscript{f}.\(^2\) Given the estimates of tax receipts at G.N.P.\textsubscript{f} and the appropriate respending coefficients, the value of M\textsubscript{fn} can then be calculated. The test for fiscal adequacy, as mentioned above, is the ratio M\textsubscript{fa}/M\textsubscript{fn}. If the ratio is greater than one, the demand-creating effect of the budget has been too large. If less than one, the impact has been too small.

---

\(^1\) Other possible alternatives are discussed in Musgrave, op. cit., p.217.

\(^2\) Similarly, the reduction in personal income tax needed to achieve G.N.P.\textsubscript{f} could be estimated.
CHAPTER III

DISCRETIONARY AND AUTOMATIC FISCAL POLICY

(a) THE DISTINCTION BETWEEN DISCRETIONARY AND AUTOMATIC FISCAL POLICY

In the previous chapter, it was shown how the change in the weighted budget result could be used as a reasonable indicator of fiscal policy. The change in the budget result, however, incorporates changes in taxation and expenditure occurring under existing legislation, as well as changes which are the result of current legislation. The former type of change is generally referred to as an automatic or built-in change while the latter type is known as a discretionary change. It is important to determine what proportion of the total change in a budget component is discretionary and what proportion is automatic. Such a separation allows the impact of current policy changes on the level of demand to be compared with the impact of changes occurring under existing legislation. It is then possible to see when discretionary policy was applied and in what direction.

The traditional approach in Keynesian theory is to treat all changes in government spending, (with, perhaps, the exception of unemployment benefits), as discretionary.¹ Changes in tax revenue are considered built-in if there has been no change in legislation.

¹ In empirical studies, the distinction between automatic and discretionary changes is usually made for taxes only. Two notable studies which include automatic expenditure changes are D. Lusher, 'The Stabilizing Effectiveness of Budget Flexibility', in Policies to Combat Depressions, N.B.E.R. Princeton, 1956, and P. Eilbott, 'The Effectiveness of Automatic Stabilizers', A.E.R., June, 1966.
affecting taxes. If tax rates, allowances or some other parameter has been changed, then part or all of the change in revenue is a discretionary change. This, then, is the familiar treatment of changes in budget components. In practice, however, certain expenditures, mainly personal transfers and, in some cases, grants to other levels of government, do change without any change in legislation.

An automatic change in tax revenue from one year to the next is primarily determined by economic factors. The yield from the personal income tax will change, under existing legislation, as a consequence of a change in taxable income. This can be brought about by changes in wages, salaries and the level of unemployment. Population change will have a small effect by way of exemptions and allowances for dependents of taxpayers. Excise tax yield automatically varies directly with the volume of taxable goods sold while sales tax revenue depends on the volume of sales and the price of taxable goods. There is, then, a fairly clear idea of how tax revenue responds automatically to economic conditions.

Automatic or built-in changes in expenditure are determined by a number of factors. Unemployment benefits respond directly to changes in the level of unemployment. Other social service payments, will, under existing legislation, change automatically with demographic and social conditions. For example, child allowances, under a comprehensive benefit scheme, will vary directly with changes in the number of children in the benefit-receiving age group. In Australia, the level of unemployment may increase the number of persons eligible to receive certain benefits, e.g. old age pensioners, under a means test. More generally, by
encouraging or discouraging immigration or emigration, the rate of unemployment and level of wages will have an indirect effect on the automatic change in social service transfers. Another type of expenditure which may incorporate automatic changes is grants to other levels of government. Grants to the states in Australia are partly determined by a formula involving the change in wages and population.

Conceptually, then, it is not difficult to distinguish between automatic and discretionary changes in taxation and expenditure. Nor is it difficult to determine the factors causing the automatic change. The distinction to be emphasised is simply that most year to year automatic changes in taxation are induced by secular and cyclical changes in economic activity, while most automatic expenditure changes are induced by demographic or a combination of demographic and economic factors.

(b) METHODS OF SEPARATING DISCRETIONARY AND AUTOMATIC CHANGES IN BUDGET COMPONENTS

The separation of an automatic from a discretionary change within the total change in some budget component requires that either the discretionary or the automatic change be identified. One method of making the

---

1 With regard to the expenditure changes, the ease of identifying automatic changes applies only to those expenditures which are determined by specific rates or formula. It is possible that, for other expenditures, e.g. post office services, there is an implicit commitment of a per capita level of service. With changes in population, and costs of providing the service, part or all of the change in post office expenditures could be considered automatic. The difficulty in determining whether or not such implicit standards exist is considerable, and, as a result, expenditures other than those which are 'formula-determined' are treated as discretionary.
separation for taxes is suggested by Wilfred Lewis in his book *Federal Fiscal Policy in the Postwar Recessions.*

This method involves multiplying current tax accruals by the ratio of the previous year's to the current year's actual tax rates. Lewis does not specify what is meant by tax rate; he only says: '...if tax rates at the prerecession peak were 10 per cent greater than they were at the trough of the recession,... actual accruals at the trough were increased by 10 per cent to place them on a comparable basis.' Thus, if tax rates in the prerecession and current period are \( r_{t-1} \) and \( r_t \) respectively, and \( T_t \) is current tax accruals, current accruals at prerecession tax rates are equal to \( (T_t) \frac{r_{t-1}}{r_t} \). If Lewis is referring to the effective tax rate, then this method of adjustment is not adequate since it does not account for any progressiveness in the rate structure, which, by itself, automatically increases or decreases the effective tax rate from one period to the next. The method is equivalent to multiplying the tax base in the current year by the prerecession tax rates.

In addition to the likelihood that adjustments may be required for taxes which have a progressiveness rate

---


2 Ibid., p.31.

3 Ibid., p.31.

4 With progressive taxes, the error involved in using this method to adjust for discretionary changes will vary with the degree of progressiveness in the rate structure.

5 Let \( B_t \) be the current year tax base. Then \( T_t = B_t \cdot r_t \). The Lewis formula for tax accruals at prerecession tax rates is \( (T_t) \frac{r_{t-1}}{r_t} \) and by substitution, this becomes \( B_t \cdot \frac{r_{t-1}}{r_t} \).
structure, there may be other changes, in the tax base, which this method does not consider. For example, a higher personal income tax rate may induce housewives to seek employment in order to maintain family disposable income. The tax base is therefore higher than it would be otherwise, although this would partly be offset by a reduction in personal allowances. If such factors, as progressiveness and changes in the base, do not figure predominantly, this method should reflect the correct magnitude of the automatic change.

A second method of estimating current tax revenue, at a constant tax rate, is to apply a previously calculated marginal tax change to the current period. If $\Delta T_{t-1}$ was the change in tax revenue in a previous period when there were no changes in legislation, and $\Delta B_{t-1}$ was the change in the tax base, then the marginal response was equal to $\left( \frac{\Delta T}{\Delta B} \right)_{t-1}$ which is denoted by $F$. If there has been a rate change in the current period, the change in revenue before the rate change is estimated by $(\Delta B_t)(F)$, where $\Delta B_t$ is the change in the tax base in the current period. This method cannot, of course, be used when the base is unknown or when the change in legislation has taken the form of a change in the tax base. Application of this particular technique requires that conditions in period $(t-1)$ be the same as those in the current period. To name three such conditions; the factors determining the tax base must be the same, the degree of progressiveness, (for a progressive income tax), must be uniform over the various income ranges and, finally, any lag between accrual and payment must not differ from one period to the next. In many situations, these requirements preclude the application of this technique.
The third method of separating built-in and discretionary changes in tax revenue is to use the government's estimates of the effects on revenue of discretionary tax changes. Accepting this method presupposes that the inaccuracies of government forecasts are less than the inaccuracies of the previous methods of adjustment. An advantage of the government estimate of the revenue effect is that certain factors, associated with the change in legislation and noted in the previous paragraph, are considered. An estimate of the change in revenue resulting from higher sales tax rates, for example, is based on an approximation of the price elasticity of demand for taxable goods and the particular rate change.

This method results in an ex ante estimate of the impact of the change in legislation on revenue (equal to $\Delta T$), and an ex ante estimate of the total change in revenue (equal to $\Delta T$). The only ex post information is the actual change in revenue (equal to $\Delta T$). There is no check on, or confirmation of, the accuracy of $\Delta T$, only a check on the estimated total change in revenue by comparing it with the actual change. If the difference between $\Delta T$ and $\Delta T$ is large, then the estimated discretionary change should be adjusted, perhaps by increasing or decreasing the estimated discretionary change by the percentage difference between estimated and actual changes in total revenue. The other possibility is to use another method of separating discretionary and built-in changes.

---

1 An indication of the accuracy of forecasting tax revenue can be obtained by systematic examination of government forecasts. This will be discussed in Chapter IV.
The separation of automatic and discretionary changes, in the expenditures mentioned above, is not difficult. To obtain current unemployment benefits at last year's rates, actual current payments are multiplied by the ratio of last year's to this year's rate of benefit. If, for example, the weekly benefit was $10 last year and $15 this year, current payments at last year's rate are determined by multiplying actual current payments by two-thirds. For other social service payments, a similar adjustment can be made. For practical purposes, the most appropriate adjustment for year to year changes in total benefits, (excluding unemployment insurance), would be to increase benefits by the rate of increase in population. Grants to the states are, as mentioned above, partly based on a formula incorporating population and wage changes. As long as the formula is known, the automatic change, resulting from changes in population and wages, is easily determined.

(c) THE FULL EMPLOYMENT BUDGET SURPLUS AS AN INDICATOR OF DISCRETIONARY FISCAL POLICY

In recent years, the full employment budget surplus (F.E.B.S.) has been used to evaluate discretionary fiscal policy. The first use of this concept, as an analytical tool, appears to have been in the 1962 Economic Report of the President. The F.E.B.S. is defined as the surplus generated by a given budget program at full employment G.N.P. (G.N.P.). A given

budget program implies that the level of expenditure, rates of transfer payments and tax rates are fixed. Tax revenue at G.N.P. will be higher or lower than actual revenue depending on the relationship between actual G.N.P. and G.N.P.. The use of this concept can be explained with the aid of a diagram.

**DIAGRAM III-A**

Actual G.N.P. as a Percentage of Potential G.N.P.

The horizontal axis measures the operating level of the economy relative to G.N.P.. The vertical axis measures the surplus or deficit which would occur when a particular budget program functions at various levels of economic activity. The line aa is the locus of points representing the surplus or deficit occurring at different operating levels of the economy given a particular budget program. At high levels of economic activity, e.g. 99 per cent, some transfers, (mainly unemployment benefits), are below what they would be if the economy was operating at a lower level, e.g. 95 per cent. Tax revenues, at the 99 per cent operating level, would be above those occurring at the 95 per cent level.
Thus, with fixed expenditures and tax rates, the surplus is greater, the higher the operating level of the economy.

The line bb represents a different budget program applied to the same period of time. At any particular operating level, the surplus is smaller (or the deficit larger) than in the case of the budget program represented by aa. This indicates that the budget program represented by bb incorporates higher spending and/or lower rates of taxation than the program represented by aa. Given the budget program represented by bb, an automatic change in the surplus or deficit, induced by a change in G.N.P., is reflected by a movement along the budget line, while a discretionary change is reflected by a shift in the budget line. In Diagram III-A, a move from $X_1$ to $X_2$ reflects an automatic rise in revenue, (and/or some decline in transfers), while a change in the surplus at $G.N.P.$ from $X_b$ to $X_a$ indicates a discretionary change involving lower expenditure, higher tax rates or some combination of tax and expenditure change. Thus, when alternative budget programs are applied to the same period of time, a change in the F.E.B.S. indicates a discretionary change in policy. The size of the change gives some idea of the magnitude of the discretionary change.

The direction of the change in discretionary policy cannot, however, be determined when the F.E.B.S. relates to different years. As Robert Solomon has pointed out, "...the passage of time does change the size of the full

---

1 Another possibility would be similar directional changes in taxes and spending, the overall result reducing the surplus at each operating level.
employment budget surplus.\(^1\) Given a growing labour force and increasing capital stock, the potential G.N.P., and hence full employment revenues, increase each year, thereby increasing the F.E.B.S. As a result, an unchanged F.E.B.S. does not indicate the absence of discretionary policy. Any comparison of the F.E.B.S. in one year with that of a subsequent year must take account of the automatic increase in full employment tax revenues.

One possible method of overcoming this problem is to represent the surplus or deficit, in the above diagram, as a percentage of G.N.P.\(^f\). If tax revenue elasticity with respect to changes in G.N.P.\(^f\) is slightly less than unity, then an unchanged percentage from one year to the next indicates that there has been no discretionary change.\(^2\)

Even if the assumptions regarding the calculation of the F.E.B.S. are allowed,\(^3\) it follows from the

---


2 If the tax elasticity with respect to changes in G.N.P. was unity, the ratio of the F.E.B.S. to G.N.P. would increase. If \(T_1\) was tax revenue at full employment, \(E\) was budget expenditure and \(Y_1\) full employment G.N.P., the ratio of the F.E.B.S. to G.N.P. equals \((T_1-E)/Y_1\). If full employment G.N.P. increased by \(q\) per cent, it would equal \(Y_1(1+q)\) in the next year. A tax elasticity of unity means that taxes at this new full employment G.N.P. are \(T_1(1+q)\) and the ratio of F.E.B.S. to G.N.P. is \([T_1(1+q)-E]/Y_1(1+q)\). It can be shown that these two ratios are not equal. There is some empirical support for a tax revenue elasticity slightly less than unity. F.C. Miller estimates that tax revenue increases about 0.22 times the increase in potential G.N.P. If taxes are one-quarter of G.N.P., this indicates an elasticity of 0.88. (See 'The Full Employment Budget Surplus and Canadian Fiscal Policy, 1957-1962', Canadian Tax Journal, Dec., 1964.)

3 The full employment budget analysis assumes that an overall elasticity can be applied to actual tax revenue as a means of obtaining an estimate of revenue at full employment. This implies that the ratio of each tax revenue to total tax revenue at full employment is the
earlier discussion on the simple budget result, that the
F.E.B.S. cannot provide a reliable estimate of
discretionary fiscal policy when there is a comparison
of the surplus in different years. Suppose that, after
accounting for the automatic increase in tax revenue
associated with a higher full employment G.N.P., the
F.E.B.S. increased by $10m. This result, according to
the analysis above, indicates restrictive discretionary
fiscal policy. Suppose, however, that the increase in
the F.E.B.S. was the result of a tax rate increase,
which increased revenue $20m., and an increase in
expenditures of $10m. If the responding coefficients
for taxation and expenditure were 0.4 and 1.0
respectively, the economic effect of the change was
expansionary, not restrictive. Only if the appropriate
responding coefficients were applied would this
technique be capable of indicating the performance of
discretionary fiscal policy.

(d) CRITERIA FOR EVALUATING THE STABILISING PERFORMANCE
OF DISCRETIONARY CHANGES IN PARTICULAR ITEMS OF
EXPENDITURE

During the past 30 years, a good deal has been
written on the subject of public spending and cyclical
stabilisation policy.¹ In most of the earlier

³ (continued from p.111)

same as the ratio at actual G.N.P. In addition to the
problems associated with such a rough adjustment, there
may be problems of lags in tax payments, and tax
revenues which do not parallel existing economic
conditions. In Australia, the problem of defining a
full employment level of farm income tax revenue, the
lags in company income tax payments and other factors
preclude an estimate of the full employment surplus from
which a reasonable estimate of discretionary change can
be derived.

¹ For a general survey of the advantages and
disadvantages of public spending as a stabilisation
device, see R. Dahl and C. Lindblom, 'Variation in
Public Expenditures' in Income Stabilization for a
Developing Democracy, Yale University Press, 1953.
literature there is one predominant theme: public expenditure should increase substantially in time of recession and decrease (or increase as little as possible) in periods of inflation. The control of public spending in this manner will, it is alleged, ensure a balance between demand and supply in the economy, limiting fluctuations in unemployment and prices. As a result of problems in the timing of public works expenditure, the lengthy impact lags and inflexibility on the part of some expenditures, the desired balance has not always been achieved through the use of expenditure policies.¹

It can be argued that public expenditures should not be used as a tool of stabilisation policy since sudden increases or decreases in expenditures, because of economic instability, may seriously distort the allocation of resources between public and private goods. The traditional 'efficiency' argument for using expenditure as opposed to tax policy, on the grounds that it has a greater impact on demand per dollar of change, fails to consider the possible costs in terms of a misallocation of resources which discretionary stabilisation expenditure policy may produce. However, since expenditure policy has been used as a weapon of stabilisation policy, it is essential that such changes be assessed in light of their impact on the level of demand.

If expenditure policy is deliberately used to alter the level of demand in the economy, its effectiveness will depend on the flexibility of the various components

¹ These particular problems are discussed in Chapters VI and IX.
of total expenditure. Some components tend to increase automatically from year to year while others are changed by changes in legislation. The question is: how much freedom exists for discretionary changes, and can such changes be tailored to the current level of total demand in the economy? The following discusses these questions with reference to the major categories of Commonwealth current and capital expenditure.

Current expenditure on goods and services can be divided into two categories, defence and departmental. The first of these, defence, should be considered inflexible in a stabilisation context. It is true that domestic expenditure on defence could be accelerated or reduced during relatively peaceful periods to some extent. However, the demand for higher defence spending could occur at any time regardless of economic conditions, and allocative considerations must therefore take priority over the question of stabilisation.

Departmental expenditures are comprised of wages and salaries plus other costs of administration. The degree of flexibility here will depend upon the government's desire to alter the quantity and quality of services which the various departments provide. Theoretically, the government could hire and dismiss large numbers of people depending on the level of demand in the economy. In addition to the problem of a misallocation of resources, such action would be difficult to justify politically. A more practical approach is to assume that in a growing economy, the

---

1 This would normally be at Budget time although in Australia, a significant proportion of public expenditure is determined by the Loan Council which meets independent of the Budget.
expense of providing public services increases by a constant rate. By slightly increasing or decreasing expenditure above or below this rate in periods of unemployment or inflationary pressure, such expenditures could be used to assist in stabilising the level of demand.¹ A benchmark for evaluating the performance of such expenditures in a stabilisation context could be the long run average rate of increase. A rate of growth above this trend during a recession would indicate correct performance while a rate of growth below this trend during a period of price inflation would indicate similar performance.²

A third category of current spending is transfers to persons. The main items in this category are social service benefits, repatriation benefits and unemployment insurance. Most of these tend to increase automatically at a steady rate from year to year with the exception of the latter transfers which may vary considerably.

With an increasing population, social service benefits increase (in current terms) from year to year. The real change depends upon the change in prices. During periods of inflation, there will be considerable pressure to increase the rate of benefits to maintain their real purchasing power. During a recession, the argument for increasing benefits is based on the reasonable assumption that the marginal propensity to spend for benefit recipients is very high, and any rise

---

¹ If the demand for public goods of this nature is a constant per capita amount, then deviations from the trend, determined by population increase, represent the allocative cost.

² A similar approach has been adopted by Artis and Wallace to measure discretionary changes in total expenditure. Op. cit., Section (2).
in benefits will stimulate demand. The effectiveness of such a measure is enhanced by the administrative and political ease of implementing an increase in the rates of benefits. It would be politically difficult to legislate a reduction in benefits. There appears to be more scope then, for anti-recession rather than anti-inflationary changes in policy. Repatriation benefits are similar to social service benefits and therefore offer little or no scope for anti-inflation policy.

Unemployment insurance is the only expenditure item which is automatically highly sensitive to changes in economic conditions.\(^1\) The importance of unemployment insurance as a stabilising device during recessions has been highlighted in a number of theoretical and empirical treatments of fiscal policy. The literature also contains a limited number of studies devoted specifically to this feature of fiscal policy.\(^2\) The stabilisation aspects of the purely automatic change in unemployment benefits will be discussed later when attention is focused on the built-in features of the budget. There is little to be said about discretionary changes in unemployment benefits since their primary purpose is an automatic one. One important fact regarding discretionary change is the rate of the benefit. The administration of unemployment insurance should be flexible enough to allow for an immediate rise in the rate of benefit during a recession.

---

1. In most circumstances, benefits will rise during a period of recession and decline when there is excess demand and inflation.

Interest payments to Australian firms and individuals offer no scope for discretionary fiscal policy as the amount in any one year depends largely upon previous loan raisings. In addition, there is very little information with respect to the impact of such transfers on demand. Interest payments should therefore be considered an inflexible component of expenditure having an indeterminant impact on demand.

Another major category of spending is grants to the states. In Australia, this particular item accounts for a large share of budget expenditure. The procedure for making grants to states or provinces in any one country varies considerably from automatic payments based on some predetermined formula to specific purpose matching grants designed to encourage public spending in particular areas. In Australia, the largest share of the grant is based upon a formula with conditional and special grants supplementing the formula-determined payments. Some conditional grants, like the grant for the maintenance of tuberculosis hospitals, are automatic in the sense that they are based on previous legislation whereby the grant depends on what the state spends for this purpose. Other conditional and special grants are entirely discretionary, and it is this proportion of the total grant which affords some opportunity for discretionary fiscal policy.

The remaining major category of current expenditure is subsidies and grants to the private sector. These  

---

1 Grants to the states were approximately 20 per cent of Commonwealth spending per annum during the 1948-49 to 1963-64 period.

2 Special grants could be on a conditional as well as unconditional basis.
are specific purpose in nature, designed to promote production or offset certain costs such as transporting feed in times of drought. The major subsidy is for the dairy industry. Increasing or decreasing subsidies in periods of recession and inflation would have some effect on the level of demand but large absolute changes would be difficult to make.

Turning to capital works spending, earlier writers held that this component of expenditure was flexible and consequently important for cyclical stabilisation.² It was soon realised that the timing of such public works was of crucial importance and systematic examination of the lags involved partially dampened the enthusiasm for using public works as a counter-cyclical measure. A second factor limiting public works flexibility was the recognised need for a steady increase in public capital expenditures to meet the demand for public goods. Resource allocation, as mentioned above, and growth considerations are also important factors determining the level of public works.

Even with these limitations, counter-cyclical public capital works have been used to mitigate fluctuations in the overall level of demand by accelerating expenditure during a recession or reducing it during periods of inflationary pressure. In order to accelerate public capital works, sub-projects or new developments are commenced earlier than planned and

where possible, the present rate of construction is increased. As an anti-inflationary measure, the rate of construction is reduced and new projects postponed.

The counter-cyclical performance of capital spending can be measured in several ways. One way is to examine the change in real capital spending during periods of inflation and recession, in the light of the simple criteria that it should decline in the former and increase in the latter. Another method would be to establish a desired ratio of public and private investment to full employment G.N.P. and observe whether or not changes in public capital expenditure have been able to maintain this ratio. Like other expenditures, large fluctuations in public capital expenditure may involve substantial allocative costs.

A third method, similar to that discussed for departmental expenditure, would be to establish an annual average rate of increase in public capital spending. Evaluation of public capital spending, in terms of stabilisation performance, would then be made with reference to deviations from this average rate of growth. Although the selection of an average annual rate of growth may present some difficulty, this seems to be a reasonable approach to the question of evaluating stabilisation performance in the field of expenditures.

(e) CRITERIA FOR EVALUATING THE STABILISING PERFORMANCE OF DISCRETIONARY CHANGES IN TAXES

Evaluating the contribution which discretionary tax changes make towards stabilisation is more difficult than in the expenditure case. The problem lies in determining the precise impact on consumption and/or
investment in each particular situation of economic instability. The impact of a 10 per cent reduction in personal income tax in one recession may be quite different from the same reduction in another recession, depending on consumer behavior regarding savings, future expectations and the availability of credit. Empirical studies which seek to indicate the determinants of consumption and investment are, of course, helpful in analysing the impact of tax changes. It must be borne in mind, however, that such functional relationships are estimates of average behavior and cannot be expected to describe the effects in any one particular year. In a later section some of these empirical relationships will be discussed and comments made on their usefulness in measuring fiscal performance. For the moment, the stabilising implications of discretionary changes in various taxes will be discussed in general terms.

(i) Personal Income Tax

A basic assumption which underlies most conventional thinking on fiscal stabilisation is that personal consumption is, in some manner, a function of personal disposable income. Since a change in personal income tax rates, allowances or concessions will alter the level of personal disposable income, tax policy can therefore influence consumption.\(^2\) In a period of unemployment, a tax reduction will stimulate consumption which will, in turn, lead to a rise in employment.

---

1. For an analysis of taxes and stabilisation policy, see Carl Shoup, 'Taxation and Fiscal Policy', in Income Stabilization for a Developing Democracy.

2. A general increase in the tax rate will have a substitution effect in favour of present consumption. In almost every case, however, the income effect will be sufficient to bring about a reduction in the rate of spending.
Similarly, during a period of excess demand, a higher tax rate will reduce consumption, equating demand and supply at a full employment level of output. If this relationship were reliable, then adjustments in personal income tax rates would be an effective means of stabilising the level of demand. Unfortunately, the real world is not so simple. There are a variety of circumstances which may thwart the efficiency of changes in personal income tax legislation as a tool of stabilisation policy.

1. Inventories of consumer goods may be very large, requiring a considerable expansion in consumer spending to reduce them to a 'normal' level. As a result, there may be no improvement in the employment situation for many months.

2. If consumers have reduced their savings or have incurred large debts, a tax reduction may serve to increase savings or reduce debt.

3. During a period of excess demand, an increase in personal income tax rates may have little effect in reducing consumption if individuals resort to instalment credit or a reduction in savings to maintain their high level of spending and standard of living.

4. The existence of instabilities caused by under- or over-optimal investment may not respond to changes in consumption induced by a change in the personal income tax.

The possible existence of these and other conditions which may hinder the desired tax policy makes it necessary to examine each discretionary tax change carefully. If the above conditions are absent, or only of marginal significance, it can generally be said that given correct timing, a personal income tax rate reduction (increase) in periods of recession (inflation) is conducive to reducing unemployment (or prices increases).

Another factor which must be considered is the income class affected by the discretionary tax change.
It is generally accepted that the marginal propensity to consume in the lower income brackets is greater than in high income brackets. If a tax reduction is structured in such a way that a large part of the increase in disposable income accrues to the high income brackets, the impact on consumption is likely to be less than in the case where the increase in disposable income accrues to those with low incomes.¹

The effect of a change in tax legislation on consumption will also depend on the pattern of consumer behaviour and the nature of the tax change. If consumers operate under a permanent income hypothesis, it matters little whether the tax change is spread over a year or concentrated in a quarterly period. If, however, consumers behave such that current consumption in a quarterly period is significantly determined by changes in disposable income in the same or previous quarter, the method of making a tax change is important. A tax rebate, for example, granted within a quarterly period would have a greater impact on current consumption in the quarterly period than if the rebate was spread over the financial year.

(ii) Company Income Tax

Under the assumption that the company income tax is not shifted, an increase in the tax rate reduces after-tax profits and the supply of internal funds available for investment. Decreases in tax rates lead to higher after-tax profits and supply of internal funds. If company investment decisions depend to some extent on

¹ A more formal discussion of this problem, which highlights the importance of recognising different propensities to spend, is to be found in Musgrave, op. cit., p.438.
the level of after-tax profits, then the tax rate is an effective weapon of stabilisation policy.¹ Various econometric studies have been conducted to determine whether investment is best explained by changes in the rate of return or the supply of available internal funds. Although three investment functions have been tested for the post-war Australian economy, they are not particularly valuable for analysing the impact of the company tax rate on investment.² What little evidence there is, points to the availability approach.³

The impact of tax rate changes will vary between companies. Large enterprises possessing adequate reserves and having access to domestic and overseas capital markets will be unaffected by all but very large changes in the tax rate. For small or new companies, a tax rate change may be crucial for investment decision-making. Finally, for all companies, the role of expectations, the provision for loss offset and the presence (or lack) of any income effect may influence the level of investment.⁴

The precise impact of changes in the company tax rate on investment cannot readily be determined, but it seems likely that increased rates will have some

¹ If investment is influenced by profitability, the provision of loss offset will also be of some consequence. For a discussion of this question, see Musgrave, op. cit. Chapter 19 (A).


⁴ Musgrave, op. cit., Chapter 14.
restrictive impact on investment while rate reductions will create a more favourable atmosphere for increased investment. Changes in depreciation provisions affecting the supply of internal funds available for investment should not be overlooked as a stabilisation measure.

The discussion above assumes that the company tax is not shifted. The alternative incidence assumptions are that the tax is, in part or wholly, shifted forward. If the latter assumption is made, then the stabilisation aspects of changes in the company income tax rate can be discussed in a sales tax framework.

(iii) Sales and Excise Tax

The traditional assumption regarding changes in sales and excise taxes is that they are shifted forward to consumers in the form of higher prices. Given this assumption, it follows that a reduction in the sales or excise tax may stimulate consumer expenditure through a reduction in prices and increase in real income. Similarly, an increase in tax rates may reduce consumer expenditures.¹

It has been argued that the sales tax is a more effective stabilisation measure than the personal income tax. First of all, the income tax has a substitution effect in favour of present consumption if the rate is increased. A permanent sales tax increase is neutral or discriminates against present consumption.²


² The actual effect of the change in the sales tax will depend on assumptions about consumer behavior regarding savings. See Musgrave, op. cit., Chapter 12, Section B.
Secondly, if the sales tax change is a temporary one, it has a strong substitution effect in favour of current consumption if the rate is reduced, and against current consumption if the rate is increased. A temporary increase in sales tax rates would therefore provide a strong deterrent against current consumption. The third argument, supporting the greater efficiency of the sales tax as a stabilisation measure, concerns the marginal propensity to consume. Assuming that this propensity declines as income rises, the sales tax, because of its regressiveness, will have a greater initial effect on demand than the income tax.

It is sometimes argued that the sales tax cannot be used as an anti-inflationary measure since the higher tax leads to an increase in prices. On traditional incidence assumptions, however, the price rise is a once-and-for-all increase, reducing real income and closing the inflationary gap if the change is of the correct magnitude. If, however, wages and salaries are tied to a cost-of-living index which includes sales-taxable goods, the traditional incidence assumption does not hold and, as a result, the effectiveness of the rate increase is somewhat reduced. Instead of a once-and-for-all increase in prices, there is a cumulative increase in costs and prices. However, for a complete cancellation of the anti-inflationary effects of the tax increase, all costs would have to rise simultaneously.

---

1 Ibid.

2 It has been demonstrated that the lack or presence of a money illusion on the part of consumers does not affect the superior efficiency of the sales tax as a stabilisation measure. See E.C. Brown, 'Analysis of Consumption Taxes in Terms of the Theory of Income Determination', A.E.R., March 1950.
following the tax increase. The unlikelihood of this occurring leads to the conclusion that an increase in the sales tax will probably have some deflationary impact in an excess demand situation. In a purely cost-push inflation, it can be seen that the appropriate anti-inflationary measure may be a rate reduction, not an increase.¹

Excise taxes can usually be treated in the same way as sales taxes. In Australia, some distinction between the two types of taxes should be made since they are levied on different categories of goods. While the sales tax is imposed primarily on durable goods, the excise tax is imposed on the consumption of tobacco products, alcoholic beverages and petrol. The price elasticity of such products appears to be very low. Consequently, a price increase, induced by a higher excise tax rate, will probably have no effect on the consumption of these products. Real income is, of course, reduced, and this will have some deflationary effect in a period of excess demand.²

(iv) Payroll Tax

The payroll tax can be levied on the wage bill of a firm or it can be based on the number of employees. If the burden of the tax rests on wages, then a change in the tax rate will alter the level of effective demand on the part of wage earners. In this way, a change in the payroll tax can be used to stimulate or reduce consumer

¹ For a rigorous analysis of using a tax reduction as an anti-inflationary measure, see, G. Brennan and D.A.L. Auld, 'The Tax Cut as an Anti-Inflationary Measure', to be published in the E.R.

² It should be noted that if a higher sales or excise tax leads to increased demand (and higher prices) of non-taxable substitutes, the burden of the tax is spread further.
expenditure. Another possibility is that a change will be shifted forward to consumers in the form of higher or lower prices. In this case, the stabilisation implications are similar to the effect on demand of a change in the sales tax. A third incidence assumption is that the tax is absorbed by profits. If the tax rate was increased, this might lead to a substitution of capital for labour and a reduction in employment. This may also occur if the tax is shifted forward as firms attempt to minimise the extent to which they have to raise prices to offset the tax.

The anti-inflationary implications of a higher payroll tax must be qualified. First, if the burden of the tax rests on wage earners, it is doubtful if unions would acquiesce and allow wages to decline as a result of a higher tax. In the second instance, where the higher tax is treated like a sales tax, the anti-inflation effectiveness will depend on changes in other costs and prices following the higher tax. Finally, if the tax is absorbed by profits, the incentive to substitute capital for labour only holds if other prices, e.g. capital goods, do not increase. This is also true if the tax is shifted forward to consumers. The most reasonable assumption seems to be that firms treat the tax as an additional cost, with at least some of the higher cost being passed on to consumers in the form of higher prices. As long as other costs do not increase simultaneously, the higher tax will have some deflationary effect on demand.

Automatic or 'built-in' fiscal stabilisers are mechanisms within the tax and expenditure structure of the government which tend automatically to dampen the rise in national income during expansion, and cushion its decline in periods of recession. Whether or not these mechanisms function properly, and how they function, must be determined as part of an evaluation of fiscal policy performance. In an earlier section, the difficulty of defining what was an automatic stabiliser was discussed. The task here is to describe methods of quantitatively measuring the impact of these automatic stabilisers.

The basis for much of the discussion in the literature is the Musgrave-Miller coefficient of built-in flexibility, $\beta$, which is defined as the proportion of the otherwise inevitable change in national income which is prevented because of the existence of built-in stabilisers. The formula for the coefficient is

$$\beta = \frac{c \cdot E \cdot r_0}{1 - c + c \cdot E \cdot r_0}$$

where $c$ is the marginal propensity to consume out of disposable income, $E$ is the built-in elasticity of the tax with respect to changes in G.N.P. and $r_o$ is the ratio of tax revenue to G.N.P. in the period prior to the change in tax revenue. The coefficient can be derived in the following manner.

---

1. R.A. Musgrave and M.H. Miller, op. cit.
2. Professor Musgrave derives $\beta$ in a slightly different manner. See Musgrave, op. cit., p.509.
The change in G.N.P. without built-in tax flexibility can be expressed as

$$\Delta Y_h = \Delta I \cdot \frac{1}{1 - c}$$  \[1\]

where $\Delta I$ is some autonomous disturbance. Next, the change in G.N.P. with built-in tax flexibility can be expressed as

$$\Delta Y = \Delta I \cdot \frac{1}{1 - c(1 - t_m)}$$  \[2\]

where $t_m$ is the marginal tax rate. The coefficient $\beta$, defined above, is equal to

$$\frac{\Delta Y_h - \Delta Y}{\Delta Y_h}$$

Substituting equations [1] and [2] for $\Delta Y_h$ and $\Delta Y$ in the above expression,

$$\beta = \frac{c.t_m}{1 - c + c.t_m}$$

Since $t_m = E.T$, (where $E$ is the built-in tax elasticity, $\frac{\Delta T}{YO}$, $Y$ is tax revenue in the prior period and $\frac{T}{Y} = r_o$), the coefficient $\beta$ is

$$\frac{c.E.r_o}{1 - c + c.E.r_o}$$

The determinants of $\beta$ are the marginal propensity to consume, the built-in elasticity of tax yield and the average tax rate. The second of these determinants is subject to considerable variation from year to year and has been the centre of much discussion.  \[2\] The elasticity,

\[1\] A diagramatic illustration of how this coefficient is derived would be very similar to that used to explain the derivation of $a_1$ and $a_2$.

E, which was defined as $\frac{\Delta T}{\Delta Y} \cdot \frac{T_0}{Y_0}$ can be divided into the elasticity of tax yield with respect to the tax base B, and the elasticity of the base with respect to national income. Thus,

$$E = \frac{\Delta T/T_0}{\Delta B/B_0} \cdot \frac{\Delta B/B_0}{\Delta Y/Y_0}.$$ 

In Chapter VIII both the yield and base elasticity for several taxes will be measured, after making adjustments for discretionary changes affecting tax base and tax yield. The determinants of both yield and base elasticity will also be discussed.

Individual studies of built-in flexibility have not always used the elasticity approach but have favoured the marginal method.\(^1\) The marginal approach, which Pechman denotes as 'built-in flexibility' in order to distinguish it from the elasticity concept, is simply $\frac{\Delta T}{\Delta Y}$ which can be separated into $\frac{\Delta T}{\Delta B} \cdot \frac{\Delta B}{\Delta Y}$. Chapter VIII will be concerned with estimating this, the built-in elasticity of various taxes and the coefficient of built-in flexibility for the tax system.\(^2\)

More attention has been directed towards the built-in stabilising effect of the tax structure. Two studies, ...
however, have considered the importance of built-in expenditure changes, and have incorporated them into a measure of built-in flexibility.\(^1\) The only expenditure to which one can apply an individual coefficient of built-in flexibility is unemployment insurance. It was noted earlier that although other expenditures may increase automatically, the proportion of this increase which is due to economic factors is usually small. Consequently, the elasticity of these expenditures with respect to G.N.P. is meaningless. This is not so in the case of unemployment benefits where changes in the level of benefits are closely linked to fluctuations in G.N.P.

The coefficient of built-in flexibility for unemployment insurance is slightly different from $\beta$. The derivation is the same as Musgrave's, treating the unemployment insurance transfer as a negative tax. The formula, denoted as $\mu$, is

$$\frac{-c.E_u r_u}{1 - c - c.E_u r_u}$$

where $r_u$ is the ratio of unemployment insurance to G.N.P. and $E_u$, the built-in elasticity of unemployment insurance. Since automatic stabilisation implies that the marginal response of unemployment benefits to a change in G.N.P., $(\Delta B_u/\Delta Y)$, is negative, the formula for $\mu$ is basically the same as $\beta$. However, it is possible to have $\Delta B_u/\Delta Y > 0$ and this can lead to values of $\mu$ which are negative or greater than unity.\(^2\) This renders the interpretation of $\mu$ slightly difficult.

---

1 Lusher, D.W., op. cit and P. Eilbott, op.cit.

2 Musgrave points out that the coefficient of built-in flexibility can never equal unity as long as $c$ is less than one. (Op. cit., p.509). This assumes that $\Delta T/\Delta T$ is always positive, an assumption which is valid as long (continued p.132)
The difficulty of interpreting the coefficient $\mu$ can be demonstrated by the two following examples.

Consider the case where, during a recession, G.N.P. did not decline absolutely but increased by only $2.0m. At the same time, assume that the increase in unemployment benefits, $B_u$, was $4.0m. The coefficient of built-in flexibility can be expressed

$$\mu = \frac{c(\frac{\Delta B_u}{\Delta Y})}{1 - c + c(\frac{\Delta B_u}{\Delta Y})}$$

If $c = 0.8$, then the value of $\mu$, given the changes in $B_u$ and $Y$ above, is 1.14. If the increase in $B_u$ had been only $0.1m., the value of $\mu$ would have been -0.25. The first of these values can be interpreted as the proportion of the otherwise inevitable decline in G.N.P. which is prevented by built-in flexibility. The second is the proportionate boost to the otherwise inevitable rise in G.N.P. owing to built-in flexibility.

At this juncture, it should be noted that a negative value of $\frac{\Delta T}{\Delta Y}$ in the formula for built-in tax flexibility also calls for careful interpretation. For example, if $\Delta T = -$4.0m. and $\Delta Y = +$2.0m., then from the formula

$$\mu = \frac{c(\frac{\Delta T}{\Delta Y})}{1 - c + c(\frac{\Delta T}{\Delta Y})}$$

the coefficient of built-in tax flexibility is +1.14.

If $\Delta T$ were only -$0.1m., then the value of $\mu$ would be -0.25. The interpretation of these values of $\mu$ are similar to the interpretation of the two values of $\mu$

---

1 See footnote 2 of p.130.
above. From these examples, it is evident that the values of \( \beta \) and \( \mu \) must be carefully interpreted.

(a) TIME LAGS AND FISCAL POLICY

The overall performance of fiscal policy depends significantly upon the lag between the need for a change in policy and the impact of the change as seen by those designated target such as employment or prices. In general, if the change in the policy variable takes place and the change is seen as indicated by the reaction of the economy, one would expect the lead time to be the same as the time lag. However, if the change is not as rapid as anticipated, one might expect the lead time to be longer than the time lag. Therefore, the lead time can be estimated as a function of the time lag and vice versa.

The lead time can be subdivided into three components: the recognition lag, the legislative lag, and the administrative lag. The first is traditionally defined.
CHAPTER IV

OTHER ASPECTS OF MEASURING FISCAL POLICY PERFORMANCE

(a) TIME LAGS AND FISCAL POLICY

The overall performance of fiscal policy depends significantly upon the lag between the need for a change in policy and the impact of the change on some designated target such as employment or prices. As a general rule, the shorter the time lag between the need for policy change and the impact, the better the performance of fiscal policy, provided the correct remedy has been applied to the economic malady. It is therefore important, in a study of fiscal policy performance, to examine the time lags and determine how they may affect stabilisation performance.

In a recent Canadian study, Professor Will classified these time lags into two broad categories, inside lags and outside lags.¹ The inside lag is the time between the need for discretionary stabilisation policy and a change in policy, while the outside lag is the time between the policy change and its impact upon a target. In total, both of these lags defy any precise, objective measurement, although for part of the lag, reliable estimates of the time involved can be made.

The inside lag can be subdivided into three components; the recognition lag, the legislative lag and administrative lag.² The first is traditionally defined

² The various components of the time lag have been discussed in the following papers. M. Friedman, 'A Monetary and Fiscal Framework for Economic Stability', in Essays in Positive Economics, University of Chicago (continued p.135)
as the time between the need for discretionary action and recognition of the need. The second is the time between recognition and the legislation of a proposed change in policy. The third is the time between legislative approval of the change and its implementation.

The legislative component of the inside lag can be determined without much difficulty. Reliable estimates are available for administrative lags in some countries. The important factor here is the wide variation in the lag because of the size and nature of the policy change. The recognition lag is virtually impossible to measure accurately for several reasons. First, there is the need to establish when discretionary action is required. Second, there is the problem of determining when the government recognised the need for a policy change. Third, it is necessary to examine the alternatives to fiscal policy, and determine whether or not these were considered as a substitute for fiscal policy. These, and other problems, will be discussed in greater detail in Chapter IX.

The outside lag varies considerably. For example, if it is decided to use an increase in public works to reduce unemployment, the outside lag is zero since commencement of the project involves the hire of labour. On the other hand, the government may decide to accelerate its purchases of supplies from domestic producers. The outside lag would then depend upon the delivery of the goods and the impact of increased orders

---

2 (continued from p.134)
on production and employment. In a similar manner, a personal income tax reduction involves several lags. First, there is the time between a change in personal disposable income and the decision to spend; second, the impact of increased expenditure on inventories and production, and third, the time between an increase in production and an increase in employment.

The analysis undertaken later in this study is confined mainly to testing the response of consumption expenditure to changes in personal disposable income. An attempt is also made to estimate the lag between a change in consumption and a change in production as well as the lag between production and employment changes.

For the consumption-income relationship, the basic method is to regress consumption in one quarterly period on income of the same period and also the previous periods, thereby estimating an infinite distributed lag. The general form of the equation used is

\[ C_t = \delta Y_{d_t} + \lambda Y_{d_{t-1}} + \Pi Y_{d_{t-2}} + \varepsilon \]  

where \( C \) is personal consumption expenditure, \( Y_{d_t} \), personal disposable income and \( t \), the time period. To reduce multi-collinearity, lagged values of \( C \) can be substituted for \( Y_{d_t} \) such that

\[ C_t = \delta_1 Y_{d_{t}} + \lambda_1 C_{t-1} + \Pi_1 C_{t-2} + \omega \]  

The explicit equation

\[ C_t = a + b Y_{d_{t}} + c C_{t-1} \]  

implies a distributed lag relation yielding a declining geometric series of lag coefficients with the ratio \( b \).

---

The coefficients for the periods following a change in $Y_d$ are

<table>
<thead>
<tr>
<th>Lag</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>$3 \ldots$</th>
<th>$n$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient</td>
<td>1</td>
<td>$b$</td>
<td>$b$</td>
<td>$b' \ldots$</td>
<td>$b^n$</td>
</tr>
</tbody>
</table>

The proportion of the implied effect on $C$ of a change in $Y_d$ in any period is determined by summing the lagged coefficients to that period and dividing by the sum of the infinite series.

The results of such testing must be qualified. First, they are an estimate of average behavior and considerable variation from time to time may occur because of variation in other factors related to the change in $Y_d$. Second, the income change is an aggregate change, including changes caused by tax changes, dividend payments and wage changes. Therefore, it is quite possible that the response to a tax-induced change in $Y_d$ is different from the response to the total change in $Y_d$.

There are several methods of estimating the other outside lags mentioned above. One is to regress first differences of production on first differences of consumption or retail sales to determine if there is any significant lag between sales and production. Another method is to construct time series, on a deseasonalised basis, for the variables production and consumption or production and employment, and identify the peaks and troughs in the series. By comparing these for pairs of series, it may be possible to determine a lagged relationship. The precise method used to estimate these lags in the Australian economy is outlined in Chapter IX.

(b) ECONOMETRICS AND FISCAL POLICY ANALYSIS

The use of econometrics in a fiscal policy framework ranges from a simple two variable relationship to a
A sophisticated model incorporating a number of multi-variable equations. Such a model, if it includes tax and expenditure variables, generates various regression coefficients which can be used to indicate the impact of the public sector on the economy.\(^1\) Single equations are limited to analysing the impact of specific variables on a particular aspect of the economy.

Three econometric models of the Australian economy have been developed and a fourth is in preparation.\(^2\) This fact, in addition to the limited scope of the present study, led to a decision to explore certain single equation relationships which may be relevant in evaluating fiscal performance. The analysis is confined to establishing the significance of the relationship between personal consumption, disposable income and taxes. The relationships were tested by simple least squares regression using first differences of quarterly and annual data for the period 1948-49 to 1964-65.

The precise equations are described in detail in Chapter X where the results of the empirical analysis are reported and analysed. The most important characteristics of the equations are the coefficient of determination and the standard error of the estimated regression coefficient. The former indicates the proportion of the variance in the dependent variable explained by the independent variable(s). The latter indicates the significance of the value of the regression coefficient.

\(^1\) For a description of such an econometric model, see D.B. Suits, 'Forecasting and Analysis With an Econometric Model', A.E.R., March, 1962.

\(^2\) See footnote 2, page 123, and Dr A.J. Hagger’s forthcoming publication.
The use of first differences is quite important when time series of consumption and income are involved since it reduces the serial correlation.\footnote{This assumes that the random disturbance term is highly serially correlated from time period to time period such that if $u$ is the disturbance term, $u_t = u_{t-1} + v_t$ where $v_t$ is a random variable with no serial correlation. See L. Klein, An Introduction to Econometrics, New Jersey, Prentice Hall, 1963, p. 51 and J. Johnston, op. cit., Chapter 7.} Unless the data is transformed in this manner, significance tests for the regression coefficients may not be reliable. First differences also reduce multi-collinearity or dependence between the independent variables. If this dependence is not reduced, the separate influences of the independent variables on the dependent variable cannot be determined. The loss of one degree of freedom when using first differences is a small price for the advantages.

Econometric analysis of this nature is not proof for a theory of consumer behavior. By showing that there exists a significant association between an increase in consumption and a reduction in taxes, for example, some support is given to the theory that consumption varies inversely with tax rates. Such analysis only indicates that, on average, this association holds. Consumer behavior in any one period may, of course, vary considerably from the average pattern.

(c) **FISCAL MARKSMANSHIP**

The term 'fiscal marksmanship' was first used in 1960 to describe the government's accuracy in estimating...
expenditure and forecasting revenue.\(^1\) The significance of good marksmanship for fiscal policy was outlined by C.M. Allan in a recent British study.\(^2\) Briefly, the importance of accurate predictions of expenditure and revenue is related to the fiscal policy objectives of full employment and stable prices. To maintain internal balance, the budget must preserve the balance between supply and demand by adjusting for shortfalls in the private sector. Assuming that the government's appraisal of the private sector is reasonably correct, precision in planning the budget is important. Since the Commonwealth Budget accounts for roughly one-quarter of G.N.P., slight changes one way or another can force the economy to deviate from the full employment growth path.

The investigation which is reported in Chapter XI is directed towards measuring the accuracy of Commonwealth predictions of expenditure and tax revenue during the period 1948-49 to 1963-64. Three techniques are employed. The first is simply a record of the difference between the estimated and actual change in expenditure or revenue, expressed as a percentage of the previous year's actual level.\(^3\) The average differences for the first and second half of this fifteen year period are calculated to see if there was any change in the magnitude of the error. Average over- and under-estimations are also calculated.


\(^3\) If the predicted change was 4.0 per cent and the actual change 3.0 per cent, this would represent an over-estimate of 1.0 points.
Linear regression is the second method of measuring fiscal marksmanship. This is carried out by regressing the predicted percentage change in taxation or expenditure on the actual percentage change. Diagram IV-A will assist in explaining this technique. Perfect forecasting is represented by a series of points along a 45° line passing through the origin. The equation of this line is characterised by an absolute term equal to zero, regression coefficient of one and a correlation coefficient (R) of one. If P is the predicted change and A the actual change, a perfect forecasting equation is

\[ P = 1.00A \quad R = 1.00 \]

All three conditions must prevail simultaneously to indicate perfect forecasting. For example, an equation with a regression coefficient of unity and correlation coefficient equal to one could be a straight line, (represented by dd on Diagram IV-A), passing through the upper lefthand quadrant which is far from perfect forecasting.

The line bb in Diagram IV-A represents a relationship between predicted and actual change which indicates, on average, over-estimation. AREA I in the north-east and south-west quadrant represent over-estimation while AREAS II represent under-estimation. Errors which are indicated by points or regression lines in the north-west or south-east quadrants are referred to as turning point errors.

The main shortcoming of this measure is that it all but precludes comparisons between predictive accuracy of various taxes and expenditures, and between time periods. One equation could have a good fit and regression coefficient close to unity with a large absolute term,
THE APPLICATION OF LINEAR REGRESSION TO MEASURING FISCAL ACCURACY

\[ P = \text{predicted change} \]

\[ A = \text{actual change} \]

\[ \text{AREA I} \]

\[ \text{AREA II} \]

\[ \text{AREA III} \]

\[ \text{AREA IV} \]
whereas another may exhibit a low absolute term, good fit but a regression coefficient considerably less than one. Unless certain 'weights' could be devised and applied to the characteristics of the equations, comparisons of accuracy are limited. These equations do, however, permit the identification of over- and under-estimation.

The third measure of fiscal marksmanship is the coefficient of inequality (U) which is equal to

$$U = \sqrt{\frac{1}{n} \sum (P - A)^2}$$

$$\frac{1}{n} \sum P^2 + \frac{1}{n} \sum A^2$$

where P is the predicted percentage change and A, the actual percentage change in tax or expenditure. Both the predicted and actual change are based on the increase or decrease over the previous year's actual level of expenditure or tax yield. The value of U ranges between zero and unity with the former indicating perfect forecasting. This particular measure of fiscal marksmanship does permit comparison between time periods and various categories of expenditure and tax.

The coefficient U can be subdivided into three components which indicate the source of the error. The component \(U_i\) is the proportion of U resulting from under- and over-estimation of the average change. The component \(U_j\) is the proportion of U resulting from under- and over-estimation of the variance of change. The third component, \(U_m\), is the proportion of U that is random.

The formulae for these components are:

---

\[ U_i = \frac{(\bar{P} - \bar{A})^2}{\frac{1}{n} \sum (P - A)^2} \]

\[ U_j = \frac{(s_p - s_A)^2}{\frac{1}{n} \sum (P - A)^2} \]

\[ U_m = \frac{2(1-R) \cdot s_p \cdot s_A}{\frac{1}{n} \sum (P - A)^2} \]

where \( \bar{P} \) and \( \bar{A} \) are the means of the respective series, the \( s \) are standard deviations of the series, and \( R \) is the correlation coefficient between the two series.

This concludes Part II of this study in which the techniques for, and theory behind evaluating fiscal policy performance have been examined. Part III, which follows, is an application of these methods of analysis to the Australian economy between 1948-49 and 1963-64. In Part I, some general comments were made about the performance of fiscal policy in these years. Within the limitations of the theoretical framework and techniques discussed above, the following chapters explore in detail, some of the many aspects of Australian fiscal policy.
MEASURES OF AUSTRALIAN FISCAL POLICY PERFORMANCE
(a) **THE SIMPLE BUDGET RESULT**

The shortcomings of using the absolute value or change in the simple budget result as an indicator of fiscal policy were discussed in Section (b) of Chapter II.\(^1\) Despite the obviousness of some of these shortcomings, the simple budget result was employed by the Commonwealth Treasurer on a number of occasions to specify the contractionary or expansionary nature of fiscal policy. The simple budget result was used in both an *ex ante* and *ex post* sense to describe what the budget would do and what it had done. In 1951, the Treasurer argued that the planned surplus for the financial year 1951-52 would be an effective anti-inflationary measure.\(^2\) The balanced budget in 1954-55

\(^1\) It was suggested in Chapter II that if the absolute value of the budget deficit was an indicator of fiscal policy, one would expect a positive correlation between budget deficit and a change in national income. Using the budget result recorded in the *Treasury Information Bulletin*, August 1966 and the change in G.N.P. as recorded in the *National Accounts*, the following relationship was obtained.

\[
\Delta Y = 624.3 + 1.167 BR
\]

\[
R = +0.399
\]

\[
(0.892)
\]

where \(\Delta Y\) is the change in G.N.P. and \(BR\) the budget result. It was further suggested that perhaps the change in the budget result is the relevant indicator. If so, one would expect a positive correlation between the change in the deficit and change in G.N.P. Using the data of the previous equation, the following relationship was obtained.

\[
\Delta Y = 872.2 - 1.289 \Delta BR
\]

\[
R = -0.398
\]

\[
(0.988)
\]

In both equations, the value of \(R\) indicated no significant correlation.

\(^2\) Fadden, B.S., 1951-52.
was designed to ensure that the budget would not add to the volume of spending in that year.¹ In 1958, the Treasurer stated that the forecasted deficit of $220m. would provide 'expansive action' at a time when the economy needed stimulation.² In August, 1961, the Treasurer combined the actual budget result of the previous year and the planned result of 1961-62, stating that in going from a cash surplus of $31.6m. in 1960-61 to a planned deficit of $33m. in 1961-62, 'the Budget will represent a change of approximately $64.6m. in the expansionary direction'.³

In the first three examples above, the Treasurer used the absolute budget result to indicate the effect of fiscal policy on the level of demand. The shortcoming of such an indicator was discussed in Section (b) of Chapter II. In the last example above, the Treasurer employed the change in the budget result as an indicator. This was an improvement over using the absolute result, but it assumed that all expenditures and revenues had equal demand-creating and demand-reducing effects on the level of demand. There were other problems due to the particular budget concept employed by the Treasurer. First, budget expenditures included transfers to trust funds and reserves which had little or no effect on the level of demand. Second, there was no consideration given to the level of overseas expenditures by the Commonwealth which reduced the demand-creating effects of the budget.

¹ Fadden, B.S., 1954-55.
² Fadden, B.S., 1958-59.
In 1963, the Budget appeared in a national accounting framework. Shortly afterwards, the Treasury produced budgets in this form for 1953-54 and subsequent years. Expenditures in this new framework were a considerable improvement over those appearing in the Budget Speeches since they excluded trust fund and reserve fund transfers. The net budget result in the new framework is referred to as the net increase in indebtedness, the budget result used in the equations which are found in footnote 1 of page 145. When it was introduced, it was used as a summary indicator like the previous cash result, incorporating similar errors.¹ Although there has been improvement in budget presentation and analysis since 1963, it can be said that during the period 1948-49 to 1963-64, the Commonwealth employed a rather misleading concept of the budget result in a naïve manner to indicate the effect of fiscal policy on the Australian economy.

(b) THE WEIGHTED BUDGET RESULT AND AUSTRALIAN FISCAL POLICY PERFORMANCE 1948-49 TO 1963-64

Although the simple budget result cannot be considered a useful concept for fiscal policy analysis, it was shown in Section (b) (iii) of Chapter II that the change in the weighted budget result could provide a reasonable indication of fiscal policy. In Section (c) of the same Chapter, the use of fiscal leverage, (the weighted budget result times the disposable income

¹ In the Budget Speech of 1963-64, Statement 6 noted that the net increase in indebtedness was roughly the difference between the amount which the budget adds to incomes by its outlays and the amount it reduces income by its receipts. A history of the development of the 'new' budget result concept and a detailed criticism of its use since 1963-64 is to be found in Artis and Wallace, op. cit., pp.17-21.
multiplier), as an indicator of fiscal policy was discussed. In this Section of Chapter V, the concept of fiscal leverage and the weighted budget result are applied to the Commonwealth budget in the years 1948-49 to 1963-64 to indicate fiscal performance. Sub-section (i) presents a calculation of the Musgrave coefficients $a_1$ and $a_2$ in post-war recession and recovery years. In sub-section (ii), the value of $\frac{1}{2}$ is calculated for the same years, indicating the performance of fiscal policy with respect to full employment G.N.P. Average fiscal performance is calculated in sub-section (iii) using the Friedman index of stability. In sub-section (iv), the weighted budget result is used to indicate performance during periods of inflation. Finally, by using a weighted full employment budget result, a long run measure of full employment adequacy is made in sub-section (v).*

Fiscal leverage can be symbolically represented as

$$L = (G_e + 0.5G_i + G_b + G_p + G_s + G_t - G_m - 0.5T_c - 0.8T_o) \cdot k$$

where

- $G_e$ = Commonwealth expenditure in Australia on goods and services,
- $G_i$ = Commonwealth interest payments to Australian holders of Commonwealth securities,
- $G_b$ = subsidies and grants to the private sector,
- $G_p$ = cash benefits to Australians (excluding $G_b$),
- $G_s$ = Commonwealth grants to the states,
- $G_t$ = loans for states' works and housing plus other capital works loans,

### TABLE V-A

**ACTUAL AND FULL EMPLOYMENT GROSS NATIONAL PRODUCT**

($m.$)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Current</td>
<td>4,365</td>
<td>5,128</td>
<td>6,799</td>
<td>7,295</td>
<td>8,278</td>
<td>9,038</td>
<td>9,645</td>
<td>10,427</td>
<td>11,355</td>
<td>11,598</td>
<td>12,418</td>
<td>13,529</td>
<td>14,625</td>
<td>14,967</td>
<td>16,104</td>
<td>17,791</td>
</tr>
<tr>
<td>G.N.P.</td>
<td>2. Change</td>
<td>763</td>
<td>1,671</td>
<td>496</td>
<td>983</td>
<td>760</td>
<td>607</td>
<td>782</td>
<td>928</td>
<td>243</td>
<td>820</td>
<td>1,111</td>
<td>1,096</td>
<td>342</td>
<td>1,137</td>
<td>1,687</td>
</tr>
<tr>
<td>3. Percentage</td>
<td>17.5</td>
<td>32.6</td>
<td>7.3</td>
<td>13.4</td>
<td>9.2</td>
<td>6.6</td>
<td>8.2</td>
<td>8.9</td>
<td>2.1</td>
<td>7.1</td>
<td>8.9</td>
<td>8.1</td>
<td>2.4</td>
<td>7.6</td>
<td>10.4</td>
<td></td>
</tr>
<tr>
<td>Change</td>
<td>4. Real</td>
<td>4,365</td>
<td>4,688</td>
<td>5,076</td>
<td>5,042</td>
<td>5,346</td>
<td>5,550</td>
<td>5,846</td>
<td>5,982</td>
<td>6,060</td>
<td>6,593</td>
<td>6,843</td>
<td>7,144</td>
<td>7,229</td>
<td>7,648</td>
<td>8,106</td>
</tr>
<tr>
<td>G.N.P.</td>
<td>5. Change</td>
<td>324</td>
<td>252</td>
<td>136</td>
<td>-34</td>
<td>304</td>
<td>204</td>
<td>296</td>
<td>136</td>
<td>78</td>
<td>533</td>
<td>250</td>
<td>301</td>
<td>85</td>
<td>419</td>
<td>458</td>
</tr>
<tr>
<td>6. Percentage</td>
<td>7.4</td>
<td>5.4</td>
<td>2.8</td>
<td>-0.7</td>
<td>6.0</td>
<td>3.8</td>
<td>5.3</td>
<td>2.3</td>
<td>1.3</td>
<td>8.8</td>
<td>3.8</td>
<td>4.4</td>
<td>1.2</td>
<td>5.8</td>
<td>6.0</td>
<td></td>
</tr>
<tr>
<td>Change</td>
<td>7. Full</td>
<td>4,305</td>
<td>4,537</td>
<td>4,760</td>
<td>4,976</td>
<td>5,160</td>
<td>5,354</td>
<td>5,550</td>
<td>5,738</td>
<td>6,020</td>
<td>6,243</td>
<td>6,518</td>
<td>6,819</td>
<td>7,119</td>
<td>7,323</td>
<td>7,742</td>
</tr>
<tr>
<td>Employment</td>
<td>8. Ratio</td>
<td>101.4</td>
<td>103.3</td>
<td>103.8</td>
<td>102.0</td>
<td>97.7</td>
<td>99.7</td>
<td>100.0</td>
<td>101.1</td>
<td>99.4</td>
<td>97.0</td>
<td>101.1</td>
<td>100.4</td>
<td>100.4</td>
<td>98.7</td>
<td>98.8</td>
</tr>
<tr>
<td>G.N.P.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


2. For the method of estimation, see D.A.L. Auld, op. cit., pp.346-47.

3. An increase in real exports of more than 13 per cent pushed real G.N.P. over the estimated full employment level despite a rate of unemployment approximately equal to that in the recession year 1957-58.
\[ G_m = \text{estimated import content of } G_e, G_s \text{ and } G_l, \]
\[ T_c = \text{company income tax receipts}, \]
\[ T_o' = \text{receipts from other taxes}, \]
\[ k = \text{disposable income multiplier}. \]

All of these values are in real 1948-49 dollars. The annual values are recorded in Appendix B, and a full explanation of the components is given in Appendix C. The bracketed term, the \textit{multiplicand}, is the weighted budget result. The responding coefficients for the multiplicand components are explained in Appendix D.

The calculation of \( k \), the multiplier, is found in Appendix E.

(i) The Musgrave Measures of Fiscal Performance in Post-war Recession and Recovery Years

RECESSION AND RECOVERY 1952-1954

Table V-A shows that real G.N.P. declined \$34m. or 0.7 per cent in 1952-53. At the same time, changes in tax revenue and Commonwealth spending gave rise to a net increase in leverage of \$302m., which prevented an even greater decline in G.N.P. than actually occurred.\(^1\) The change in G.N.P. and leverage is represented in Diagram V-A below. VS represents the actual decline in G.N.P. and VT represents the decline that would have occurred if there had been no increase in leverage. The increase in leverage is represented by ST in the diagram. Since G.N.P. without a change in leverage would have declined, the coefficient \( \alpha \) is applied. This is equal to 90.2 per cent and is the proportion of the otherwise inevitable fall in G.N.P. which was offset by the increase in leverage.

\(^1\) The values for the change in leverage used here and elsewhere in Chapter V, are found in Appendix B.
In the recovery year, 1953-54, real G.N.P. increased by $304m. However, a reduction in real Commonwealth budgetary expenditure and higher tax revenues resulted in a decline in leverage of $164m. Thus, the change in leverage dampened the increase in G.N.P. In Diagram V-A, the actual increase in G.N.P. is represented by XZ while WZ represents the increase that would have occurred if there had been no change in leverage. The reduction in leverage is represented by WX. Since G.N.P. without a change in leverage would have increased, the coefficient \( a_2 \) is applied. This is equal to \(-.351\) which states that 35.1 per cent of the otherwise inevitable increase in G.N.P. was offset by the reduction in leverage.

The budget effects, in terms of stabilising fluctuations in the economy, were in the right direction during this period of Australia's post-war business cycle. In the recession, the impact on the level of aggregate demand was insufficient and failed to offset the decline in G.N.P. The reduction in leverage in 1953-54 appears
to be reasonably satisfactory since full employment
G.N.P. was almost realised by the end of the year.\(^1\)

It cannot, of course, be assumed that these
leverage changes were primarily the result of
discretionary fiscal policy. The automatic or built-in
response of tax revenues to changes in economic activity
will also bring about changes in leverage from year to
year.\(^2\) Since estimates are available for the effect on
revenue of most tax parameter changes, it is possible to
obtain the leverage change due to discretionary policy.\(^3\)

This is done by applying the appropriate responding
coefficient to the particular tax revenue change brought
about by changes in the parameter(s) affecting that tax.
Since it is possible to calculate the change in leverage
resulting from changes in government spending, the
residual, (total leverage change minus discretionary tax
and expenditure leverage change), is the increase or
decrease in leverage due to built-in changes in tax

---

1 See Table V-A.

2 The question of deciding what is an automatic and what
is a discretionary fiscal change was discussed in Section
(a) of Chapter III. It was pointed out that unemployment
benefits were the only expenditures which automatically
responded primarily to fluctuations in economic activity.
In practice, their influence as a share of Commonwealth
spending was very small. Therefore, in the following
analysis, all expenditure is considered discretionary.
Automatic expenditure changes are considered separately
in Chapter VIII.

3 Estimates of the revenue effect of tax parameter
changes are, in most cases, presented in the Budget
Speech. Inter-budgetary changes can be found in Hansard
or the Treasury Information Bulletin. They are
calculated as a cost or gain to revenue. (See Tables
I-B, I-D, I-H and I-L for these estimates). Judging
from the accuracy of Commonwealth forecasts in the
recession and recovery years, (see Chapter XI), these
estimates appear reasonably correct. For the personal
income tax change of February, 1962 (for which there was
no official estimate of the revenue effect) see Chapter
VII.
revenues. The breakdown for the period 1952-1954 is set out in Table V-B.

**TABLE V-B**

**BUILT-IN AND DISCRETIONARY COMPONENTS OF CHANGES IN LEVERAGE 1952-1954**

<table>
<thead>
<tr>
<th>Cause of Leverage Change</th>
<th>1952-53</th>
<th>1953-54</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commonwealth spending</td>
<td>+ 4</td>
<td>- 189</td>
</tr>
<tr>
<td>Discretionary tax policy</td>
<td>+ 213</td>
<td>+ 245</td>
</tr>
<tr>
<td>Built-in tax response</td>
<td>+ 85</td>
<td>- 220</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>+ 302</td>
<td>- 164</td>
</tr>
</tbody>
</table>

When broken down in this manner, several new aspects are introduced into the analysis. In the recession of 1952-53, the main expansionary force came from discretionary tax policy. The change in real expenditures added virtually nothing to the increase in leverage. The built-in tax response was moderately stabilising, increasing leverage by $85m.

During the recovery year, discretionary tax policy again provided a considerable stimulus. This, however, was offset by a reduction in expenditures and the built-in rise in tax revenues, the latter being induced by higher levels of taxable income and consumption. The net result was a decline in leverage of $164m.

Discretionary policy was, on balance, expansionary and therefore partially offset the 'fiscal drag' caused by the rate of economic recovery.

In summary, discretionary policy in 1952-53 was stabilising, with discretionary tax policy being most expansionary. Discretionary policy in 1953-54 was expansionary, offsetting approximately one-quarter of

---

1 Changes in tax parameters in 1952-53 and 1953-54 were widespread, as indicated in Table I-B of Chapter I. In addition to rate reductions, there were several exemption changes as well.
the decline in leverage induced by the built-in tax increases. The combination of discretionary and built-in policy provided a reasonable recovery.

RECESSION AND RECOVERY 1957-1959

An absolute decline in personal income of $49m. and a rising level of unemployment were two of the factors associated with the reduced rate of economic growth in 1957-58. Real G.N.P. increased by only $78m. while leverage increased by $21m. The changes in G.N.P. and leverage are illustrated in Diagram V-B. The actual increase in real G.N.P. is represented by VS while the increase without a change in leverage is represented by VT. The increase in leverage is represented by TS.

DIAGRAM V-B

It is clear that G.N.P. without a change in leverage would have increased. Therefore the coefficient $a_2$ is applied. The value of $a_2$ is 37 percent which is the proportion of the otherwise inevitable increase in G.N.P. added by the increase in leverage.

The recovery year, 1958-59, is more interesting. The real increase in G.N.P. was $533m. while the
increase in leverage was $467m. Although G.N.P. without a change in leverage would have increased, the recovery was largely generated by the net income-creating impact of the Commonwealth budget. In Diagram V-B, XZ represents the actual rise in G.N.P. with WZ representing the increase that would have occurred without the increase in leverage. The value of the coefficient $\alpha_2$, which is the appropriate coefficient in this case, is 708 per cent. This is the proportionate increase in the otherwise inevitable rise in G.N.P. owing to the increase in leverage. Although this may appear unduly large, it can be seen that the otherwise inevitable rise in G.N.P. was quite small compared with the increase in leverage.

The income-creating effect of the budget in both of these years was in the right direction. The changes in leverage indicate that the expansionary effect of the budget in 1957-58 was rather weak compared with that of 1958-59. There was very little reference in the Budget Speech of 1957-58 to the increasing unemployment, and the decline in farm income was, of course, unforeseen.\footnote{1} Certain policy changes in the following year were announced as anti-recession measures.\footnote{2}

Discretionary and built-in components of leverage can be separated for this period as they were for 1952-1954. The breakdown is given in Table V-C. The most surprising feature of the breakdown for 1957-58 is the decline in leverage attributable to the built-in response

\footnote{1}{It was noted in Chapter I, Section (c), that the tax rate reductions and increased exemptions and allowances announced in the Budget Speech were not specifically anti-recession measures.}

\footnote{2}{These were mainly increases in spending on goods and services and transfer payments.}
TABLE V-C

BUILT-IN AND DISCRETIONARY COMPONENTS OF CHANGES IN LEVERAGE 1957-1959
($m.)

<table>
<thead>
<tr>
<th>Cause of Leverage Change</th>
<th>1957-58</th>
<th>1958-59</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commonwealth spending</td>
<td>+ 176</td>
<td>+ 319</td>
</tr>
<tr>
<td>Discretionary tax policy</td>
<td>+ 71</td>
<td>+ 50</td>
</tr>
<tr>
<td>Built-in tax response</td>
<td>- 226</td>
<td>+ 98</td>
</tr>
<tr>
<td>Total</td>
<td>+ 21</td>
<td>+ 467</td>
</tr>
</tbody>
</table>

of the tax system; surprising, since the year was marked by a decline in personal income caused by a 3½ per cent decline in farm income.¹ Although other tax revenues increased, owing to increased consumption of taxable goods in 1957-58 and higher company incomes in 1956-57, one might have expected lower personal income tax revenue to offset this. The reason for the substantial automatic increase in tax revenues, (and decline in leverage), lies in the method of personal income tax collection, whereby farm income tax paid in 1957-58 depended on 1956-57 farm income, a year in which this component of personal income was high.²

Discretionary fiscal policy, in the form of increases in spending and tax changes, increased leverage by $176m. and $71m. respectively. This was sufficient to more than offset the decline in leverage owing to the built-in rise in tax revenues, providing a net increase in leverage of $21m.

In the following year, income taxes on the low farm incomes of 1957-58 were paid, causing a decline in tax

¹ The decline in personal disposable income was $117m.
² Farm income tax payments are lagged one year, based on either the previous year's income or, in certain circumstances, an average of the previous five years. (See Section (a) of Chapter VII). In 1956-57, farm income was the highest it had been for five years.
revenues and increase in leverage of $98m. The increase in leverage resulting from discretionary tax changes was primarily the result of the change in depreciation provisions announced in the Budget Speech of 1957-58.¹

On balance, both discretionary and built-in tax revenue changes increased leverage, but the main contribution to the increase in leverage resulted from government spending. In real terms, expenditure on goods and services rose 7.8 per cent, cash benefits to persons increased 8.7 per cent and grants to the states plus Loan Fund allocations were 5.3 per cent greater than in the previous year.

One of the major shortcomings of the fiscal system in 1957-58 was that personal income taxes paid in that year were partly based on income in the previous year, and in no way reflected the current decline in personal income. The actual, effective tax rate, (based on tax payments), increased from 8.91 in 1956-57 to 9.65 in the recession year 1957-58, whereas on an accrual basis, it declined in 1957-58 from 8.84 to 8.05.² Only discretionary policies appear to have prevented a decline in G.N.P. In the recovery year, increased spending and the built-in decline in tax revenues brought an increase in leverage which was augmented by the incidental leverage change induced by the change in depreciation provisions for companies.

---

¹ This change was announced in the Budget Speech of 1957-58 as a tax reform measure. No specific reference was made to any anti-recession effects of this change.

² These tax rates are the ratio of personal income tax payments to total personal income (for the actual rate), and the ratio of personal income tax payable to total personal income for the rate on an accrual basis. (See Tables 32 and 62 of Australian National Accounts 1948-49 to 1964-65).
RECESSION AND RECOVERY 1961-1963

Increasing unemployment, a decline in farm income and a reduction in private gross fixed investment were main features of the 1961-62 recession. Despite this, G.N.P. increased by $85m. or 1.2 per cent in real terms. The increase in leverage was substantial; $550m. These changes are illustrated in Diagram V-C below.

DIAGRAM V-C

VS represents the actual increase in G.N.P., while VT represents the decline in G.N.P. which would have occurred if there had been no change in leverage. Leverage is represented by ST. In this case, the coefficient $a_1$ is appropriate, and its value is 11.8 per cent. This is the proportion of the otherwise inevitable decline in G.N.P. offset by the increase in leverage.

In the recovery year 1962-63, G.N.P. increased by $419m. while the increase in leverage was only $42m. In Diagram V-C, XZ represents the actual increase in G.N.P., and WZ represents the increase that would have occurred without a change in leverage. The increase in leverage is represented by XW. Since G.N.P. without a change in leverage would have increased, the coefficient $a_2$ is
applied. This is equal to 11.1 per cent and is the proportion of the otherwise inevitable rise in G.N.P. added by the increase in leverage. The breakdown of the leverage change is recorded in Table V-D.

### TABLE V-D

**BUILT-IN AND DISCRETIONARY COMPONENTS OF CHANGES IN LEVERAGE 1961-63**

<table>
<thead>
<tr>
<th>Cause of Leverage Change</th>
<th>1961-62</th>
<th>1962-63</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commonwealth spending</td>
<td>+504</td>
<td>+105</td>
</tr>
<tr>
<td>Discretionary tax policy</td>
<td>+101</td>
<td>-63</td>
</tr>
<tr>
<td>Built-in tax response</td>
<td>-55</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>+550</td>
<td>+42</td>
</tr>
</tbody>
</table>

The main feature of the change in leverage in 1961-62 is the increase owing to the rise in expenditure. Spending on goods and services and cash benefits to persons increased by 5.0 and 9.9 per cent respectively in real terms.1 Grants to the states increased more than 10 per cent. The increase in leverage resulting from discretionary tax changes was brought about by several tax measures.2 Mainly because of a rise in wage and salary income of 2.8 per cent, tax revenue did not automatically decline. The small rise which occurred brought a decline in leverage of $55m.

In the recovery year, government expenditures were responsible for the increase in leverage. The decline in leverage associated with the built-in tax response was small, despite the 5.8 per cent increase in real G.N.P. Two factors contributed to the small built-in rise in tax revenues. First, farm and company tax, paid

---

1 Unemployment benefits increased from $4.5m. in 1960-61 to $12.6m. in 1961-62.

2 See Section (d) of Chapter I for a description of these tax measures.
in 1962-63, were based on 1961-62 incomes. Second, the full impact of the tax measures of February 1962 would occur in 1962-63.

The effects of discretionary policy in the recession year were substantial in terms of income-creation. However, they were not sufficient to maintain G.N.P. near its full employment level. Built-in flexibility was slightly destabilising. Expenditure increases in the recovery year were small but sufficient to more than offset the decline in leverage owing to the automatic increase in tax revenue. The overall net increase in leverage of $42m. failed to provide an adequate recovery in terms of achieving a full employment G.N.P.

SUMMARY

The main results of the above analysis can be summarised as follows. First, consider the recession years. The overall result of fiscal policy, as indicated by the change in leverage, was stabilising in each case. On closer examination, it is found that expenditure and discretionary tax policy were stabilising in each recession while built-in tax flexibility was stabilising only once. The built-in stabilising effect of tax revenue occurred in 1952-53 when there was a small decline in real G.N.P.

Next, consider the recovery years. By the end of 1953-54, the economy was close to a full employment G.N.P., and it is therefore difficult to assess each component of the change in leverage in terms of its stabilising performance. It can only be said that the overall result appears to have been reasonably satisfactory. Although G.N.P. increased by 8.8 per cent
in 1958-59, and appears to have exceeded the full employment estimate of G.N.P. for that year, there was little decline in the number of unemployed. In 1962-63, the economy, as noted above, did not make a reasonable recovery. Discretionary and automatic policies were all expansionary in 1958-59 while in 1962-63, only expenditure policy was expansionary.

Finally, if the performance of discretionary spending, discretionary tax and built-in tax policy are examined in all the recession and recovery years, (except 1953-54), it is found that expenditure was stabilising in five years, discretionary tax policy in four years and built-in tax flexibility in only two years.1

(ii) Fiscal Policy and Full Employment G.N.P.

When measures of fiscal performance were discussed in Chapter II, an example was given to demonstrate the difficulty of interpreting the Musgrave coefficients $\alpha_1$ and $\alpha_2$ in an economy which is fluctuating about a growing full employment level of output. It was therefore suggested that the leverage concept could be applied in a more convenient manner by measuring the proportion of the otherwise inevitable gap between actual and full employment G.N.P. offset by the change in leverage.2 In this framework, the coefficient of performance is $\xi$, which is equal to

$$\frac{\Delta L}{(G.N.P. - G.N.P.) + \Delta L}$$

1 The above analysis has been based on the application of the responding coefficients discussed in Appendix D. Other assumptions about the responding coefficients could be made. In Appendix F, the results of applying alternative reasonable coefficients are presented.

2 See Section (c)(ii) of Chapter II.
The following is an application of this coefficient to the recession and recovery years in the period 1948-49 to 1963-64.

RECESSION AND RECOVERY 1952-53

The diagram below illustrates the changes in economic activity during these two years. In 1952-53, real G.N.P. declined from $5076m. to $5042m. Full employment G.N.P. is estimated at $5160m., which is represented by LB in the diagram. DL is the hypothetical level of G.N.P. given no increase in leverage, which is represented by CD. The coefficient is therefore $\frac{CD}{(LB - LC) + CD}$ which is equal to 0.72 in 1952-53. This means that 72 per cent of the otherwise inevitable gap between G.N.P. and G.N.P. was prevented by the increase in leverage. For the recovery year, 1953-54, MF represents actual G.N.P. while G.N.P. is represented by ME. Without the decrease in leverage, G.N.P. would have been MG. The coefficient \( \frac{CD}{LB - LC} \), in this

---

1 See Table V-A.
case, is \( \frac{GF}{(ME - MF) + GF} \) which equals 1.05. The otherwise inevitable gap was therefore reduced by 105 per cent. In other words, the decline in leverage dampened the expansion and brought the level of G.N.P. almost to its full employment capacity. The proximity of the value of \( \frac{1}{3} \) to unity indicates very good performance.

RECESSION AND RECOVERY 1957-59

In the recession 1957-58, there was no absolute decline in G.N.P. The change in G.N.P. is diagrammatically represented below. LC is actual G.N.P. in 1957-58 and LB, the full employment level. Without

DIAGRAM V-E

\[ \frac{21}{(6243 - 6060) + 21} = 0.10 \]

This says that only 10 per cent of the otherwise inevitable gap was offset by the increase in leverage. In 1958-59 there was a substantial increase in G.N.P. On Diagram V-E, the actual G.N.P. is represented by MF
and the full employment G.N.P. by ME. Without the change in leverage, GF, the level of G.N.P. would have been MG. The value of the coefficient is

\[
\frac{467}{(6518 - 6593) + 467} = 1.16
\]

This says that more than 100 per cent of the otherwise inevitable gap between G.N.P. and full employment G.N.P. was offset by the increase in leverage. The same occurred in 1953-54 when the value of \( \frac{4}{5} \) was 1.05. In that year however, a rise in G.N.P. was restrained, whereas in 1958-59, an otherwise small increase in G.N.P. was boosted. As the value of \( \frac{4}{5} \) is close to unity, very good performance is indicated.¹

RECESSION AND RECOVERY 1961-63

As in 1957-58, G.N.P. did not decline absolutely in 1961-62. The increase was $85m. or 1.2 per cent. The level of G.N.P. and its relation to G.N.P. are illustrated in Diagram V-F. LC is actual G.N.P. and LB

DIAGRAM V-F

¹ A value of \( \frac{4}{5} \) which exceeds unity indicates that the otherwise inevitable gap between G.N.P. and G.N.P., has been more than offset. The value of the coefficient does not indicate whether G.N.P. was boosted or restrained. This, however, is easily determined by observing actual and full employment G.N.P.
the full employment G.N.P. Without the increase in leverage, G.N.P. would have declined in 1961-62. This otherwise inevitable level of G.N.P. is represented by LD. The coefficient $\hat{\lambda}$, in 1961-62, is equal to

$$\frac{550}{(7323 - 7229) + 550} = 0.85$$

indicating that 85 per cent of the otherwise inevitable gap between G.N.P. and G.N.P. was offset by the increase in leverage. Actual G.N.P. in the recovery year is represented by MF and G.N.P. by ME. The increase in leverage is represented by GF. The value of $\hat{\lambda}$ is

$$\frac{42}{(7742 - 7648) + 42} = 0.31$$

indicating that 31 per cent of the otherwise inevitable gap between G.N.P. and G.N.P. was offset by the increase in leverage.

**SUMMARY**

As a summary, the values of the coefficient $\hat{\lambda}$ are compared to the values of the coefficients $\alpha_1$ and $\alpha_2$ which were calculated in Section (b)(i). The coefficient $\hat{\lambda}$ can be applied to either the recession or recovery year, and can be interpreted without much difficulty in both cases. It is more appropriate than the Musgraves measures in an economy which is growing close to a full employment level of output.

**TABLE V-E**

<table>
<thead>
<tr>
<th>Year</th>
<th>$\hat{\lambda}$</th>
<th>$\alpha_1$</th>
<th>$\alpha_2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1952-53</td>
<td>0.72</td>
<td>0.90</td>
<td>-0.35</td>
</tr>
<tr>
<td>1953-54</td>
<td>1.05</td>
<td>-</td>
<td>-0.37</td>
</tr>
<tr>
<td>1957-58</td>
<td>0.10</td>
<td>-0.37</td>
<td>7.08</td>
</tr>
<tr>
<td>1958-59</td>
<td>1.16</td>
<td>-0.37</td>
<td>7.08</td>
</tr>
<tr>
<td>1961-62</td>
<td>0.85</td>
<td>1.18</td>
<td>0.11</td>
</tr>
<tr>
<td>1962-63</td>
<td>0.31</td>
<td>-0.37</td>
<td>-0.37</td>
</tr>
</tbody>
</table>
(iii) Measuring Average Fiscal Policy Performance
Using the Friedman Index or Criteria of Stability

In section (c)(iii) of Chapter II, a brief description was given of Professor Friedman's approach to measuring the average performance of a full employment policy over a number of periods. It was suggested that his statistical technique could possibly be applied to measuring fiscal policy performance in a growing economy. The basic identity used by Friedman can be written

\[ Y(t) = X(t) + Z(t) \]

where \( Y \) is actual national income, \( X \) the level of national income in the absence of a full employment policy and \( Z \), the full employment policy. In a fiscal policy framework, \( X \) can be defined as G.N.P. (in real terms) in the absence of the net income-creating effect of the budget (fiscal leverage), while \( Z \) represents leverage. The change in leverage, in any particular year, has already been used to measure fiscal performance in certain years during the 1948-49 to 1963-64 period.

Friedman notes that \( Z \), \( X \) and \( Y \) may display trends, and, if so, they can be re-defined as deviations from these trends. In the Australian case, \( X \), or G.N.P. minus leverage, does display an increasing trend over the 1948-9 to 1963-64 period. By fitting a linear trend to the \( X \) series, deviations were obtained by subtracting the value of \( X \) in each year from the trend value in the same year. The series of deviations was denoted by \( x \).

The actual values of \( X \) and the trend are illustrated on Diagram V-G. The trend values of \( X \), denoted as \( X' \), and the deviations are recorded on Table V-E. Leverage \( (Z) \) displayed no trend over the same period as Diagram V-H.
DIAGRAM V-G

GROSS NATIONAL PRODUCT LESS LEVERAGE IN MILLIONS
OF 1948-49 DOLLARS

Trend:

\[ X' = 3250 + 222t \]
DIAGRAM V-H

ABSOLUTE LEVERAGE IN 1948-49 DOLLARS

Years

<table>
<thead>
<tr>
<th>Year</th>
<th>Gross National Product</th>
<th>Leverage</th>
<th>G.N.P. less Trend Value</th>
<th>Trend Value</th>
<th>Deviations</th>
<th>Deviation of Leverage from Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1948-49</td>
<td>4365</td>
<td>546</td>
<td>3818</td>
<td>X: 3250</td>
<td>+568</td>
<td>-537</td>
</tr>
<tr>
<td>1949-50</td>
<td>4688</td>
<td>1037</td>
<td>3651</td>
<td>X: 3482</td>
<td>+169</td>
<td>+46</td>
</tr>
<tr>
<td>1950-51</td>
<td>4940</td>
<td>1369</td>
<td>3571</td>
<td>X: 3704</td>
<td>-133</td>
<td>+286</td>
</tr>
<tr>
<td>1951-52</td>
<td>5076</td>
<td>1004</td>
<td>4072</td>
<td>X: 3916</td>
<td>+156</td>
<td>-79</td>
</tr>
<tr>
<td>1952-53</td>
<td>5042</td>
<td>1306</td>
<td>3735</td>
<td>X: 4138</td>
<td>-403</td>
<td>+223</td>
</tr>
<tr>
<td>1953-54</td>
<td>5346</td>
<td>1142</td>
<td>4204</td>
<td>X: 4360</td>
<td>-156</td>
<td>+59</td>
</tr>
<tr>
<td>1954-55</td>
<td>5550</td>
<td>1054</td>
<td>4496</td>
<td>X: 4582</td>
<td>-86</td>
<td>-29</td>
</tr>
<tr>
<td>1955-56</td>
<td>5846</td>
<td>1000</td>
<td>4846</td>
<td>X: 4804</td>
<td>+42</td>
<td>-83</td>
</tr>
<tr>
<td>1956-57</td>
<td>5982</td>
<td>890</td>
<td>5092</td>
<td>X: 5026</td>
<td>+66</td>
<td>-193</td>
</tr>
<tr>
<td>1957-58</td>
<td>6060</td>
<td>911</td>
<td>5149</td>
<td>X: 5248</td>
<td>-99</td>
<td>-172</td>
</tr>
<tr>
<td>1958-59</td>
<td>6593</td>
<td>1378</td>
<td>5215</td>
<td>X: 5450</td>
<td>-235</td>
<td>+295</td>
</tr>
<tr>
<td>1959-60</td>
<td>6843</td>
<td>1067</td>
<td>5776</td>
<td>X: 5692</td>
<td>+84</td>
<td>-16</td>
</tr>
<tr>
<td>1960-61</td>
<td>7144</td>
<td>769</td>
<td>6375</td>
<td>X: 5914</td>
<td>+461</td>
<td>-314</td>
</tr>
<tr>
<td>1961-62</td>
<td>7229</td>
<td>1319</td>
<td>5910</td>
<td>X: 6136</td>
<td>-226</td>
<td>+236</td>
</tr>
<tr>
<td>1962-63</td>
<td>7648</td>
<td>1361</td>
<td>6287</td>
<td>X: 6358</td>
<td>-71</td>
<td>+278</td>
</tr>
<tr>
<td>1963-64</td>
<td>8106</td>
<td>1168</td>
<td>6938</td>
<td>X: 6580</td>
<td>+358</td>
<td>+85</td>
</tr>
</tbody>
</table>
clearly indicates. Therefore deviations were calculated from the mean value of Z and denoted as the series z. This series is recorded in Table V-E.

In this framework, stabilising action requires a leverage value greater than the mean value whenever G.N.P., in the absence of any leverage, fell below its trend. When the latter increases above the trend, stabilisation requires that leverage declines below the mean value. In other words, a positive value of x requires a negative value of z. 'Perfect' stabilisation is indicated by equal magnitudes of x and z with opposite signs. Fitting this into the Friedman criterion, the correlation of x and z, denoted by R_{xz}, must have a value between -1 and $-\frac{1}{2}(\sigma_x/\sigma_z)$ if leverage is to be more stabilising than destabilising.¹

Given the data set out in Table V-E, the value of \( R_{xz} \) was 0.764 with \( \sigma_x = 258 \) and \( \sigma_z = 233 \). For good stabilising performance, \( R_{xz} \) must be between -1 and $-\frac{1}{2}(258/233)$ e.g. between -1 and -.55. The value of \( R_{xz} \) was within this range and this indicates that, given the above assumptions, leverage was, on average, more stabilising than destabilising over this period.

(iv) The Weighted Budget Result as an Indicator of Fiscal Policy During Inflation

It is generally recognised that fiscal policy can be employed to check domestic price inflation by reducing aggregate real demand through higher taxes and/or lower public spending.² Unfortunately, the precise

¹ \( \sigma_x \) and \( \sigma_z \) are the standard deviations of the x and z series.
relationship between price increases and 'over-spending' or excess demand is not known, and therefore income effects of the budget cannot be explicitly related to particular price changes.\(^1\) The analysis here is confined to the overall impact of the Commonwealth budget on the level of aggregate real demand during years of domestic price inflation.\(^2\) As an indication of this impact, the annual change in the weighted budget result is computed. This is the change in the first round, net income-creating effect of the budget. An increase (decrease) in the real value of the weighted budget result indicates an increase (decrease) in real demand of budgetary origin. Statements by the Prime

\(^1\) Some indication of price inflation and the level of demand, (indicated by the labour situation), is provided by the relationship
\[
\frac{\Delta P}{P_t} = -55.51 + 0.5676(L_t) \quad R^2 = .396
\]
where \(P\) is the consumer price index, \(L\) the demand for labour index (see p.10, Chapter I) and \(t\) represents quarterly time periods. When a 'full employment' situation is present i.e. \(L_i = 100.0\), the equation indicates that on average, the percentage increase in \(P\) has been 1.25 a quarter. For no price inflation, \(L_i\) would have had to remain at 97.7. A further rough indication of the relationship between excess demand and price changes is given by the relationship
\[
\frac{\Delta P}{P_t} = -151.99 + 1.558 \left(\frac{G.N.P.}{G.N.P.}\right)_t + .421 \left(\frac{\Delta P_m}{P_m}\right)_{t-1} \quad R^2 = .779
\]
where \(P_m\) is an index of the price of imported goods, and \(t\) is time in years. Given no change in import prices, this relationship states that a full employment level of G.N.P. in one year was associated with a 3.8 per cent increase in consumer prices in the following year.

\(^2\) A year of price inflation is represented by an increase in \(P\) of more than 2.5 per cent. Anti-inflation policy may also be directed towards reducing effective demand to regulate the inflow of imports and restore the balance of trade equilibrium. The analysis here abstracts from this possible problem and concentrates on domestic price inflation.
Minister and Treasurer between 1948 and 1964, (some of which were noted in Chapter I), indicate that a reduction in demand was essential during periods of inflation. Good fiscal performance would therefore be indicated by a reduction in the weighted budget result during inflation. Table V-G contains the relevant statistics required to evaluate fiscal policy. Performance is recorded in Column 4.

**TABLE V-G**

<table>
<thead>
<tr>
<th>Year</th>
<th>Change in Consumer Price Index (%)</th>
<th>Change in Weighted Budget Result</th>
<th>Performance of Fiscal Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1949-50</td>
<td>+ 9.2</td>
<td>+ 117</td>
<td>Inflationary</td>
</tr>
<tr>
<td>1950-51</td>
<td>+ 13.0</td>
<td>+ 79</td>
<td>Inflationary</td>
</tr>
<tr>
<td>1951-52</td>
<td>+ 22.5</td>
<td>- 87</td>
<td>Deflationary</td>
</tr>
<tr>
<td>1955-56</td>
<td>+ 4.2</td>
<td>- 13</td>
<td>Deflationary</td>
</tr>
<tr>
<td>1956-57</td>
<td>+ 5.8</td>
<td>- 26</td>
<td>Deflationary</td>
</tr>
<tr>
<td>1959-60</td>
<td>+ 2.6</td>
<td>- 74</td>
<td>Deflationary</td>
</tr>
<tr>
<td>1960-61</td>
<td>+ 4.1</td>
<td>- 71</td>
<td>Deflationary</td>
</tr>
</tbody>
</table>

Sources: Monthly Review of Business Statistics and Appendix E.

In five of the seven years noted above, there was a reduction in the weighted budget result, indicating good performance. The strongest deflationary impact occurred in 1951-52 after several years of price inflation. Deflationary policies were weakest in the inflationary period of the mid-nineteen fifties. It is interesting to note that each post-war recession was preceded by one or two years of deflationary budget policy.

The change in the weighted budget result can be divided into changes resulting from discretionary policy and built-in tax responses in a manner similar to that

---

1 The results here are based on the responding coefficient values as set out in Appendix D. In Appendix F, the results of applying alternative responding coefficients are presented.
of section (b)(i). This is useful since it allows the impact of actual policy decisions to be compared with the impact of changes in tax revenues stemming from the automatic response to changes in G.N.P.

TABLE V-H

<table>
<thead>
<tr>
<th>Year</th>
<th>Built-in Tax Response</th>
<th>Discretionary Change</th>
<th>Total Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1949-50</td>
<td>- 40</td>
<td>+ 81</td>
<td>+ 117</td>
</tr>
<tr>
<td>1950-51</td>
<td>- 54</td>
<td>+ 266</td>
<td>- 99</td>
</tr>
<tr>
<td>1951-52</td>
<td>+ 28</td>
<td>- 59</td>
<td>- 87</td>
</tr>
<tr>
<td>1955-56</td>
<td>+ 24</td>
<td>+ 30</td>
<td>+ 13</td>
</tr>
<tr>
<td>1956-57</td>
<td>- 33</td>
<td>+ 19</td>
<td>- 26</td>
</tr>
<tr>
<td>1959-60</td>
<td>- 102</td>
<td>+ 11</td>
<td>- 74</td>
</tr>
<tr>
<td>1960-61</td>
<td>- 78</td>
<td>+ 28</td>
<td>- 71</td>
</tr>
</tbody>
</table>

From this breakdown, it is possible to see when discretionary policy was applied and in what direction. However, it does not indicate the specific measures taken by fiscal management. These were mentioned summarily in Chapter I, and are discussed in detail in Chapters VI and VII. The inflationary or destabilising effect in 1949-50 was caused by discretionary policy; higher spending and lower tax rates. The following year was marked by a very large increase in discretionary spending. This was only partly offset by the automatic increase in tax revenues and a special 'temporary' tax. In 1951-52, discretionary policy was clearly deflationary.

1 In 1951-52 and 1955-56, the government estimates of the revenue effect of changes in the sales/excise rate were not employed because of a relatively large error between predicted and actual total revenue. The adjustments made are mentioned in Chapter VII. An adjustment was also necessary for personal income tax and company income tax in 1950-51 and 1951-52 respectively. (See Chapter VII).

2 The temporary tax was in the form of a 20 per cent levy on the proceeds of wool sales. This was mentioned in Chapter I and is discussed briefly in Chapter VII.
Towards the end of 1955-56, discretionary increases in taxation were announced. Together with the automatic rise in revenue, tax policy accounted for a decline in the weighted budget result of $40m. This was sufficient to more than offset the increase owing to a rise in real spending. The combined effect of built-in and discretionary tax policy in 1956-57 was almost the same as the year before, reducing the weighted budget result by $45m. The increase in spending, however, was smaller than in 1955-56, and the overall decline in the weighted budget result was $26m.

The built-in tax response provided the deflationary impact of the budget in 1959-60. Discretionary policy was inflationary, increasing the weighted budget result by $28m. The overall result was a decline in the weighted budget result of $74m. In the next year, 1960-61, the overall deflationary impact was of similar magnitude to that of the year before. However, only spending was destabilising.

In summary, the built-in tax response was stabilising in 6 of the 7 inflation years. Expenditure changes were destabilising in every year but one, while discretionary tax policy was stabilising in five years.

From the foregoing brief analysis of changes in the weighted budget result during post-war periods of inflation, it appears that even without discretionary policy, the built-in response of the tax system tends to reduce the level of demand of budgetary origin. Only in 1951-52 did this not occur. This is explained by the fact that although the inflation persisted throughout

---

1 The magnitude of the built-in response of the tax system in 1959-60 was the result of a $250m. rise in farm income the year before and a current year rise in wages and salaries of $600m.
this year, (and in the recession year 1952-53), recessive tendencies developed during 1951-52. In real terms, certain categories of private spending declined, bringing about a real decline in some taxes.

Given no discretionary tax changes, a built-in tax rise will only bring about a reduction in demand of budgetary origin if the demand-increasing effect of higher expenditures is less than the demand-reducing effect of increased tax revenue. If government expenditures are assumed relatively inflexible in a downward direction, there may be no reduction in demand of budgetary origin during inflation. Discretionary policy will therefore have to rely mainly on tax changes for anti-inflation measures.

(v) Full Employment Adequacy and Australian Fiscal Policy

The final application of the weighted budget result to Australian fiscal policy is the calculation of a simple index showing the adequacy of fiscal policy in attaining full employment G.N.P. (G.N.P. f). The construction of such an index was discussed in Section (d) of Chapter II.

In order to derive the index Mfa/Mfn, it was necessary to estimate tax revenues at full employment. Company income tax revenue at G.N.P. f in each year was estimated by multiplying actual revenues by the ratio of G.N.P. f to G.N.P. in the previous year, since company

1 The consumers price index increased 9.4 per cent in 1952-53.
2 On allocative grounds, increasing expenditures may well be desirable. If so, it may be more appropriate to measure the stabilising performance of expenditure changes in terms of deviations from some increasing trend. (See Chapter III for a discussion of this problem and Chapter VI for an application of such a criterion.)
income tax payments are lagged one year. Other tax revenues were adjusted in a similar manner, using the current year ratio of G.N.P.\textsubscript{f} to G.N.P.\textsuperscript{1} By applying the appropriate responding coefficients to full employment revenues, and holding expenditure constant, the multiplicand at full employment, M\textsubscript{fa}, was calculated.

In order to estimate the multiplicand needed to achieve G.N.P.\textsubscript{f}, the level of Commonwealth spending required to reach G.N.P.\textsubscript{f} had to be estimated.\textsuperscript{2} This required estimating the components of full employment G.N.P. Actual private gross fixed investment and private consumption, both in real terms, were increased or decreased by the percentage difference between G.N.P. and G.N.P.\textsubscript{f}. All other components of G.N.P.\textsubscript{f} were taken to be the same as actual components with the exception, of course, of Commonwealth current and capital spending on goods and services which is the residual. Once this has been calculated, the multiplicand needed to reach full employment is derived. Having calculated the value of M\textsubscript{fn}, the index M\textsubscript{fa}/M\textsubscript{fn} is calculated. This is recorded in Table V-J below.

The ratio M\textsubscript{fa}/M\textsubscript{fn} indicates that there was no long run trend of excessive or insufficient fiscal stimulus. The economy experienced relatively mild fluctuations about a full employment level of output with no apparent trend towards secular stagnation.

\textsuperscript{1} Other tax revenue at full employment is only a very rough estimate since a substantial portion of personal income tax is derived from farm income. Not only is this either lagged or on a five year average, but, conceptually, it is difficult to define full employment farm income.

\textsuperscript{2} Assuming that expenditure is the policy instrument used to reach G.N.P.\textsubscript{f}.
TABLE V-J
FULL EMPLOYMENT ADEQUACY AND FISCAL POLICY

<table>
<thead>
<tr>
<th>Year</th>
<th>G.N.P.</th>
<th>M_a</th>
<th>M_fa</th>
<th>M_fn</th>
<th>M_fa/M_fn</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>G.N.P.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>($m.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1949-50</td>
<td>103.3</td>
<td>247</td>
<td>264</td>
<td>234</td>
<td>1.13</td>
</tr>
<tr>
<td>1950-51</td>
<td>103.8</td>
<td>326</td>
<td>354</td>
<td>311</td>
<td>1.14</td>
</tr>
<tr>
<td>1951-52</td>
<td>102.0</td>
<td>239</td>
<td>262</td>
<td>245</td>
<td>1.07</td>
</tr>
<tr>
<td>1952-53</td>
<td>97.7</td>
<td>311</td>
<td>299</td>
<td>325</td>
<td>.92</td>
</tr>
<tr>
<td>1953-54</td>
<td>99.7</td>
<td>272</td>
<td>268</td>
<td>270</td>
<td>.99</td>
</tr>
<tr>
<td>1954-55</td>
<td>100.0</td>
<td>251</td>
<td>251</td>
<td>251</td>
<td>1.00</td>
</tr>
<tr>
<td>1955-56</td>
<td>101.1</td>
<td>238</td>
<td>245</td>
<td>224</td>
<td>1.09</td>
</tr>
<tr>
<td>1956-57</td>
<td>99.4</td>
<td>212</td>
<td>209</td>
<td>217</td>
<td>.96</td>
</tr>
<tr>
<td>1957-58</td>
<td>97.0</td>
<td>217</td>
<td>194</td>
<td>228</td>
<td>.85</td>
</tr>
<tr>
<td>1958-59</td>
<td>101.1</td>
<td>328</td>
<td>333</td>
<td>317</td>
<td>1.05</td>
</tr>
<tr>
<td>1959-60</td>
<td>100.4</td>
<td>254</td>
<td>267</td>
<td>263</td>
<td>1.02</td>
</tr>
<tr>
<td>1960-61</td>
<td>100.4</td>
<td>183</td>
<td>188</td>
<td>183</td>
<td>1.03</td>
</tr>
<tr>
<td>1961-62</td>
<td>98.7</td>
<td>314</td>
<td>295</td>
<td>315</td>
<td>.94</td>
</tr>
<tr>
<td>1962-63</td>
<td>98.8</td>
<td>324</td>
<td>312</td>
<td>331</td>
<td>.94</td>
</tr>
<tr>
<td>1963-64</td>
<td>99.4</td>
<td>278</td>
<td>271</td>
<td>281</td>
<td>.96</td>
</tr>
</tbody>
</table>

Source: Table V-A and Appendix A.

* * * * * * * * *

The weighted budget result has been employed in various ways in this Chapter to indicate the performance of fiscal policy in post-war recession and inflation years. The separate effects of discretionary and automatic changes in expenditure and taxation on the aggregate level of demand were also indicated. The next three chapters comprise a more detailed examination of changes in expenditure and taxes. Chapter VI is primarily concerned with evaluating the stabilising performance of discretionary changes in expenditure. A similar evaluation for discretionary tax changes is undertaken in Chapter VII. Finally, in Chapter VIII, detailed attention is given to the impact on the level of demand of automatic or built-in changes in particular taxes and expenditures.
CHAPTER VI

STABILISATION ASPECTS OF DISCRETIONARY CHANGES IN EXPENDITURES

The main difficulty in deciding whether or not a change in a particular expenditure is stabilising is to establish a benchmark from which to evaluate the change in the expenditure. The problems involved in establishing such benchmarks were discussed in Chapter III where particular benchmarks were suggested for various expenditures. The aim of this chapter is to examine changes in particular Commonwealth expenditures, and appraise their counter-cyclical performance. For the purpose of this analysis, the breakdown of budgetary expenditure is similar to that found in recent national accounting estimates of Commonwealth budget spending. ¹

In order to determine the real impact of expenditure changes on demand, it was necessary to adjust the published data to account for spending outside Australia and changes in costs and prices over the 1948-1964 period. Most of these adjustments are to be found in Appendix A. In Appendix A, the implied index of current and of capital public expenditure, as well as the consumer price index, were used to obtain expenditure in constant dollar values. In this chapter, the various categories of expenditure were deflated by the index which seemed most appropriate for the type of expenditure.

DEFENCE EXPENDITURES

Expenditures on defence since 1948-49 can be broadly classified into the five following categories.

(a) Payment to armed forces personnel in Australia
(b) Payment to armed forces personnel overseas
(c) Purchase of defence equipment produced in Australia
(d) Purchase of defence equipment produced overseas
(e) Transfers to reserves

All administrative expenses are included in payment to personnel. From a demand-creating point of view, expenditure made in Australia, as wages to personnel, or for Australian-produced equipment and services, are of main interest. This is not easily obtained and some adjustment to the published figures is required. The problem is two-fold. First, purchases of Australian-produced equipment may contain a large import content, and the final value does not reflect the Australian content of resources. Second, a portion of the overseas defence spending, which must be subtracted from the total, is included in a category which comprises consular and trade mission expenditures overseas, fees to international organisations and other overseas payments. The adjustments required to arrive at a reasonable estimate of domestic defence spending are to be found in Appendix A.

Table VI-A sets out the defence spending statistics. Expenditure varied between $84m. in 1948-49 to $484m. in 1963-64 in current dollar terms. Overseas defence expenditure is recorded in rows 2 and 3, row 4 being the estimated level of domestic defence spending. In order to obtain domestic defence expenditure in real terms, the values in row 4 were deflated by a composite
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Total Budget Expenditure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Imports of Munitions and Other Equipment</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>27</td>
<td>18</td>
<td>8</td>
<td>17</td>
<td>26</td>
<td>18</td>
<td>16</td>
<td>17</td>
<td>25</td>
<td>16</td>
<td>19</td>
<td>14</td>
<td>28</td>
</tr>
<tr>
<td>3. Other Overseas Spending Including Import Content of Domestic Expenditure</td>
<td>38</td>
<td>29</td>
<td>56</td>
<td>85</td>
<td>84</td>
<td>65</td>
<td>70</td>
<td>66</td>
<td>41</td>
<td>49</td>
<td>50</td>
<td>66</td>
<td>72</td>
<td>59</td>
<td>63</td>
<td>93</td>
</tr>
<tr>
<td>4. Domestic Defence Expenditure</td>
<td>40</td>
<td>77</td>
<td>142</td>
<td>217</td>
<td>304</td>
<td>266</td>
<td>257</td>
<td>284</td>
<td>305</td>
<td>277</td>
<td>296</td>
<td>285</td>
<td>296</td>
<td>318</td>
<td>333</td>
<td>363</td>
</tr>
<tr>
<td>5. (In 1948-49 dollars)*</td>
<td>40</td>
<td>62</td>
<td>102</td>
<td>119</td>
<td>153</td>
<td>135</td>
<td>133</td>
<td>137</td>
<td>141</td>
<td>129</td>
<td>140</td>
<td>130</td>
<td>134</td>
<td>143</td>
<td>148</td>
<td>160</td>
</tr>
<tr>
<td>6. Domestic Defence Expenditure as a percentage of G.D.E.</td>
<td>1.5</td>
<td>2.2</td>
<td>3.5</td>
<td>4.3</td>
<td>5.2</td>
<td>4.1</td>
<td>3.6</td>
<td>3.6</td>
<td>3.7</td>
<td>3.2</td>
<td>3.1</td>
<td>2.7</td>
<td>2.7</td>
<td>2.8</td>
<td>2.7</td>
<td>2.7</td>
</tr>
</tbody>
</table>


*Deflated by a composite price index of wholesale prices and minimum wage weighted 1:1.
wholesale price-minimum wage index. The last column is domestic defence spending as a proportion of gross domestic expenditure in Australia. Over the period 1948-49 to 1963-64, this was 3.2 per cent on average.

Changes in defence spending in post-war recessions were as follows. In the first recession, real domestic expenditures on defence increased by $34m. In the recovery year, spending declined by $18m. Overseas expenditures fluctuated considerably during this period with the termination of hostilities and reconciliation of war credits and debts. In 1952-53 domestic expenditure on defence, as a percentage of G.D.E., reached 5.2 per cent. For the next seven years, defence expenditure fluctuated very little. In the 1957-58 recession, there was a decline in real spending of $12m., and an increase the following year of $11m. As a proportion of total spending in Australia, defence was, at this time, slightly over 3 per cent. By the 1961-62 recession, domestic defence spending had increased only $3m. since 1958-59, and it was not until after 1963-64 that there was any significant increase.

During periods of price inflation, spending on defence varied considerably. In 1951-2, the large increase added to the already excessive level of spending. In 1955-56 and 1956-57 the changes were slightly 'inflationary' with increases of $4m. each year. During the price inflation of 1959-61, real defence spending declined from $140m. to $130m. the first year and then rose to $134m. by 1960-61.

A former Treasury official suggested this as a reasonable deflator.
In conclusion, all that can be said is that any counter-cyclical impact of defence spending was more or less 'accidental'. If the overseas component, especially that of equipment purchases, is kept high, this may be an advantage during inflation but not, of course, in a recession. As suggested in Chapter III, defence spending should probably be considered inflexible in a stabilisation context.

(b) OTHER DEPARTMENTAL CURRENT EXPENDITURES

These expenditures are comprised of wages and salaries for the personnel of all departments, (excluding defence departments), plus other current administrative expenditures of the Commonwealth. Between sixty and seventy per cent of these expenditures are wages and salaries, and it was therefore appropriate to deflate the domestic expenditure figure by a minimum wage index.¹

In Chapter III, it was suggested that the benchmark from which to appraise the stabilisation performance of departmental expenditures should be some growth trend. It was decided to select the average annual real rate of growth as the benchmark. Row 6 of Table VI-B indicates if the change in expenditure was below or above the average annual change of +3.2 per cent.

Given the criterion set out in Chapter III, departmental spending was stabilising in two recession years, two recovery years and four of seven inflation

¹ The index was constructed using data from the Monthly Review of Business Statistics, various issues 1948 to 1964.
### TABLE VI-B

**CURRENT DEPARTMENTAL EXPENDITURE ON GOODS AND SERVICES (EXCLUDING DEFENCE)**  
($m. rows 1 to 4)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Departmental Expenditure</td>
<td>96</td>
<td>109</td>
<td>132</td>
<td>143</td>
<td>143</td>
<td>138</td>
<td>153</td>
<td>174</td>
<td>179</td>
<td>197</td>
<td>212</td>
<td>243</td>
<td>259</td>
<td>284</td>
<td>308</td>
<td>346</td>
</tr>
<tr>
<td>2. Overseas Expenditure (Including Import Content of Purchases)</td>
<td>16</td>
<td>18</td>
<td>25</td>
<td>28</td>
<td>21</td>
<td>23</td>
<td>25</td>
<td>29</td>
<td>28</td>
<td>30</td>
<td>32</td>
<td>35</td>
<td>41</td>
<td>37</td>
<td>41</td>
<td>46</td>
</tr>
<tr>
<td>3. Domestic Departmental Expenditure</td>
<td>80</td>
<td>91</td>
<td>107</td>
<td>115</td>
<td>122</td>
<td>115</td>
<td>128</td>
<td>145</td>
<td>151</td>
<td>167</td>
<td>180</td>
<td>208</td>
<td>218</td>
<td>247</td>
<td>267</td>
<td>300</td>
</tr>
<tr>
<td>4. (In 1948-49 dollars)*</td>
<td>80</td>
<td>84</td>
<td>82</td>
<td>78</td>
<td>71</td>
<td>64</td>
<td>70</td>
<td>77</td>
<td>76</td>
<td>82</td>
<td>86</td>
<td>95</td>
<td>97</td>
<td>108</td>
<td>115</td>
<td>124</td>
</tr>
<tr>
<td>5. Percentage Change in Real Domestic Expenditure</td>
<td>+5.0</td>
<td>-2.4</td>
<td>-4.9</td>
<td>-9.0</td>
<td>-9.9</td>
<td>+9.4</td>
<td>+10.0</td>
<td>-1.3</td>
<td>+7.9</td>
<td>+4.9</td>
<td>+10.5</td>
<td>+2.1</td>
<td>+11.3</td>
<td>+6.5</td>
<td>+7.8</td>
<td></td>
</tr>
<tr>
<td>6. Percentage Points Above (+) or Below (-) Average Annual Change</td>
<td>+1.8</td>
<td>-5.6</td>
<td>-8.1</td>
<td>-12.2</td>
<td>-13.1</td>
<td>+6.2</td>
<td>+6.8</td>
<td>-4.5</td>
<td>+4.7</td>
<td>+1.7</td>
<td>+7.3</td>
<td>-1.1</td>
<td>+8.1</td>
<td>+3.3</td>
<td>+4.6</td>
<td></td>
</tr>
</tbody>
</table>

**Source:** Australian National Accounts Estimates of Receipts and Expenditure

*Deflated by the minimum wage index, 1948-49 = 100.*
years. Fluctuations from year to year were substantial, the average of the annual increase being +7.0 per cent and the average decrease being -5.5 per cent. Such a wide range of fluctuations may incorporate large allocative costs. From a purely stabilisation point of view, however, this degree of flexibility is helpful, although in the Australian case, the direction and magnitude of change was, at times, destabilising.

(c) SOCIAL SERVICE PAYMENTS

Commonwealth social service payments include expenditures under the National Welfare Fund, repatriation benefits and other payments such as those for education and health. Unemployment benefits, which are included in the National Welfare Fund, have a special significance in a counter-cyclical framework. It is therefore appropriate to examine changes in this cash benefit separately. The purely automatic aspect of unemployment benefits will be examined later. The purpose here is to examine the total change in payments during recession periods, with particular emphasis on discretionary changes.

(i) Unemployment Benefits

Unemployment benefits are payable to a person if he can establish that, having taken reasonable steps to obtain work, he has been unable to do so. He must be willing to take suitable work and register with the Commonwealth Employment Office. Since 1948-49, weekly

1 The terms stabilising and destabilising are used with reference to the suggested benchmark. Destabilising in this context does not necessarily mean that the change accentuated the trade cycle. It simply means that the change did not meet the criterion for good performance.
rates for an adult with dependent spouse have increased as follows.

**TABLE VI-C**

<table>
<thead>
<tr>
<th>Period</th>
<th>Rate</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>1948-49 to 1951-52</td>
<td>$4.50</td>
<td>+ $4.50</td>
</tr>
<tr>
<td>1952-53 to 1956-57</td>
<td>9.00</td>
<td>+ 2.80</td>
</tr>
<tr>
<td>1957-58 to 1960-61</td>
<td>11.80</td>
<td>+ .95</td>
</tr>
<tr>
<td>Sept. '61 to Feb. '62</td>
<td>12.75</td>
<td>+ 1.50</td>
</tr>
<tr>
<td>Feb. '62 to 1963-64</td>
<td>14.25</td>
<td></td>
</tr>
</tbody>
</table>

*Source: Budget Speeches 1948-49 to 1964-65.*

There are small, additional allowances for dependent children.

Unemployment benefits were increased in each of the post-war recessions. In 1952-53, the rates were doubled. The rates were increased by almost 30 per cent in the 1957-58 recession, and, in 1961-62, the rates were revised upwards twice. Such immediate upward revisions during the recession years undoubtedly contributed towards stabilising the level of demand.

A measure of the impact of unemployment benefits on income can be made by calculating the proportion of the loss in wages and salaries, due to unemployment, offset by unemployment benefits. Wages and salaries at full employment can be approximated by dividing actual wages and salaries by the demand for labour index. If $B_u$ is total unemployment benefits paid in a particular year; $L_1$, the demand for labour index; and $W$, actual wages and salaries, then the proportion of the loss in wages and salaries offset by unemployment benefits is

$$\frac{B_u}{(W/L_1)} - W$$

Applying this simple index to 1952-53, the shortfall in wages and salaries offset by unemployment benefits

---

1 See footnote 2 of page 10.
benefits was 16.0 per cent. In 1957-58 and 1958-59, the offsets were 13.2 and 14.3 per cent respectively. The offset in the recession year 1961-62 was 11.7 per cent, and in the recovery year 1962-63, 14.3 per cent.

In terms of real purchasing power, the per capita benefits increased during the post-war period. The following shows the weekly benefit, deflated by the consumer price index, for a married man with dependent spouse. The real benefit increased substantially in percentage terms but remained far below the average wage. In 1952-53, this weekly unemployment benefit was 30.1 per cent of the average weekly male wage. In 1957-58, it was 30.0 per cent and in 1961-62, the percentage was 29.4. These three years were periods of upward revision in benefits and it appears that the benchmark for revision was approximately one-third of the average wage.

TABLE VI-D

<table>
<thead>
<tr>
<th>Year</th>
<th>Weekly Unemployment Benefit for Married Man with Dependent Spouse in 1948-49 $</th>
</tr>
</thead>
<tbody>
<tr>
<td>1948-49</td>
<td>4.50</td>
</tr>
<tr>
<td>1952-53</td>
<td>5.39</td>
</tr>
<tr>
<td>1957-58</td>
<td>6.19</td>
</tr>
<tr>
<td>1958-59</td>
<td>6.03</td>
</tr>
<tr>
<td>1961-62 (Feb. rate)</td>
<td>6.80</td>
</tr>
<tr>
<td>1962-63</td>
<td>6.79</td>
</tr>
</tbody>
</table>

There are four conclusions regarding the anti-recession aspects of unemployment benefits. First, weekly benefits increased in each recession, the total increase between 1952-53 and 1961-62 being more than three-fold. Second, the real value of weekly benefits, measured in 1948-49 prices, increased from $4.50 to $6.79 for a married man with dependent spouse. Third, unemployment benefits in total offset between 11.7 and 16.0 per cent of the loss of wages and salaries during
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Actual Unemployment Benefits</td>
<td>0.3</td>
<td>2.5</td>
<td>0.2</td>
<td>0.4</td>
<td>9.1</td>
<td>5.0</td>
<td>1.4</td>
<td>1.3</td>
<td>4.2</td>
<td>9.8</td>
<td>11.9</td>
<td>9.0</td>
<td>9.0</td>
<td>25.3</td>
<td>21.3</td>
<td>13.5</td>
</tr>
<tr>
<td>2. Total Wages and Salaries</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Actual</td>
<td>4025</td>
<td>4285</td>
<td>5433</td>
<td>5642</td>
<td>5900</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) At Full Employment</td>
<td>4082</td>
<td>4300</td>
<td>5466</td>
<td>5716</td>
<td>5983</td>
<td>7255</td>
<td>7669</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Short fall</td>
<td>57</td>
<td>15</td>
<td>33</td>
<td>74</td>
<td>83</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Benefits as Percentage of Short fall</td>
<td>16.0</td>
<td>33.3</td>
<td>12.7</td>
<td>13.2</td>
<td>14.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Weekly Benefit for Married Male</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Current Value</td>
<td>4.50</td>
<td>9.00</td>
<td>11.80</td>
<td>12.75</td>
<td>14.25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Real Value</td>
<td>4.50</td>
<td>5.39</td>
<td>6.19</td>
<td>6.13</td>
<td>6.80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Average Male Weekly Wage</td>
<td>16.80</td>
<td>29.90</td>
<td>39.30</td>
<td>47.25</td>
<td>48.45</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Row 5(a) divided by Row 6</td>
<td>26.8%</td>
<td>30.1%</td>
<td>30.0%</td>
<td>27.0%</td>
<td>29.4%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: Australian National Accounts
Monthly Review of Business Statistics
Department of Social Services, Canberra.
periods of unemployment and recession. Finally, unemployment benefits per week per married man were approximately 30 per cent of the average weekly wage during periods of recession.

(ii) Other Social Service Payments

Social service payments, excluding unemployment insurance, increased from $219m. in 1948-49 to $1015m. in 1963-64, and represented approximately one quarter of total budget expenditure. As a proportion of total personal income, social service payments increased slightly over the 1948-1964 period. The average over the period was 6.5 per cent.

Discretionary changes in the rates of benefits for at least one social service occurred in every year except 1949-50 and 1956-57. During inflationary periods, there was considerable pressure for increases in such benefits as old age pensions. The largest increase in total benefits during an inflationary period was a 51 per cent increase, (in real 1948-49 dollars), in 1950-51; the result of a real increase in repatriation benefits of $95m. This was clearly inflationary but it would have been politically difficult to postpone. A substantial decline in repatriation benefits in 1951-52 was responsible for the real decline in benefits in that year. The only other inflationary period where there was a decline in real benefits was 1956-57.

In the three post-war recession years, 1952-53, 1957-58 and 1961-62, the discretionary increases in

---

Old age pensions were only 92 per cent of their 1948-49 value in the 1952-53 recession. An upward revision in the rates in 1957-58 gave them a real value greater than that of 1948-49.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Repatriation Benefits</td>
<td>57.</td>
<td>58.</td>
<td>183.</td>
<td>76.</td>
<td>81.</td>
<td>86.</td>
<td>96.</td>
<td>102.</td>
<td>108.</td>
<td>120.</td>
<td>123.</td>
<td>133.</td>
<td>151.</td>
<td>158.</td>
<td>167.</td>
<td>184.</td>
</tr>
<tr>
<td>4. Total as a Percentage of Personal Income</td>
<td>5.8</td>
<td>5.5</td>
<td>6.8</td>
<td>5.6</td>
<td>5.9</td>
<td>6.1</td>
<td>6.2</td>
<td>6.3</td>
<td>6.2</td>
<td>6.8</td>
<td>7.0</td>
<td>6.9</td>
<td>7.1</td>
<td>7.4</td>
<td>7.3</td>
<td>7.2</td>
</tr>
</tbody>
</table>

Source: Australian National Accounts
Monthly Review of Business Statistics
benefit rates brought about real increases in total social service payments of 6.4, 8.1 and 7.4 per cent respectively. These upward revisions in rates of benefits provided a small stabilising effect during the recessions.

Welfare payments provided some room for anti-recession policy as rate increases could be made quickly with only a short administrative lag. From the point of view of their impact on demand, they were important since the marginal propensity to spend for recipients of such transfers is probably close to unity. They offered little scope for anti-inflationary policy because of the political pressure for increases so as to enable those who receive benefits to maintain at least a constant standard of living.

(d) **COMMONWEALTH GRANTS TO OR FOR THE STATES**

Commonwealth grants to or for the states can be divided into four basic categories; general revenue grants, specific purpose revenue grants, specific purpose capital grants and additional assistance grants. The background and development of these grants is described in the Budget paper *Commonwealth Payments To Or For the States, 1965-66*. Annual payments for the first three types of grants are partly determined by formula or existing legislation. Thus a portion of the annual change is automatic while the remainder can be viewed as a discretionary change.¹

The general revenue grants were mainly determined by a particular formula under the Tax Reimbursement

¹ The automatic change in tax reimbursement and financial assistance grants is briefly mentioned in Chapter VIII.
Scheme (up to 1959) and the Financial Assistance Grants (1960 to 1964). Supplementary and Special Grants increased these formula-determined grants. The proportion of the general revenue grants determined by the particular formula were as follows.

**TABLE VI-G**

THE PROPORTION OF GENERAL REVENUE GRANTS DETERMINED BY FORMULA

<table>
<thead>
<tr>
<th>Year</th>
<th>Proportion</th>
<th>Year</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1948-49</td>
<td>.88</td>
<td>1956-57</td>
<td>.81</td>
</tr>
<tr>
<td>1949-50</td>
<td>.77</td>
<td>1957-58</td>
<td>.79</td>
</tr>
<tr>
<td>1950-51</td>
<td>.69</td>
<td>1958-59</td>
<td>.77</td>
</tr>
<tr>
<td>1951-52</td>
<td>.67</td>
<td>1959-60</td>
<td>.91</td>
</tr>
<tr>
<td>1952-53</td>
<td>.72</td>
<td>1960-61</td>
<td>.97</td>
</tr>
<tr>
<td>1953-54</td>
<td>.75</td>
<td>1961-62</td>
<td>.96</td>
</tr>
<tr>
<td>1954-55</td>
<td>.80</td>
<td>1962-63</td>
<td>.96</td>
</tr>
<tr>
<td>1955-56</td>
<td>.81</td>
<td>1963-64</td>
<td>.96</td>
</tr>
</tbody>
</table>

Source: Commonwealth Payments To Or For the States 1965-66.

The second category of grants is the specific purpose grants. Some of these, such as the contribution to interest on state debt, are automatic while others, such as grants for drought relief, are of a discretionary nature. The percentage of the total specific purpose revenue grants which was automatic is recorded below.

**TABLE VI-H**

PROPORTION OF SPECIFIC PURPOSE REVENUE GRANTS WHICH WAS 'AUTOMATICALLY' DETERMINED

<table>
<thead>
<tr>
<th>Year</th>
<th>Proportion</th>
<th>Year</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1948-49</td>
<td>.84</td>
<td>1956-57</td>
<td>.91</td>
</tr>
<tr>
<td>1949-50</td>
<td>.86</td>
<td>1957-58</td>
<td>.93</td>
</tr>
<tr>
<td>1950-51</td>
<td>.93</td>
<td>1958-59</td>
<td>.93</td>
</tr>
<tr>
<td>1951-52</td>
<td>.99</td>
<td>1959-60</td>
<td>.94</td>
</tr>
<tr>
<td>1952-53</td>
<td>.94</td>
<td>1960-61</td>
<td>.95</td>
</tr>
<tr>
<td>1953-54</td>
<td>.94</td>
<td>1961-62</td>
<td>.96</td>
</tr>
<tr>
<td>1954-55</td>
<td>.92</td>
<td>1962-63</td>
<td>.97</td>
</tr>
<tr>
<td>1955-56</td>
<td>.91</td>
<td>1963-64</td>
<td>.96</td>
</tr>
</tbody>
</table>

Source: See Table VI-G.

1 This was the first year for the Financial Assistance Grants.
The third general category of grants is specific purpose capital payments. These are used to assist the state in undertaking certain capital expenditures. Like the specific purpose revenue grants, many of these are determined on a 'matching grant' basis or by a proportion of state expenditure on the project. The proportion of the grant which was automatically determined in the 1948-49 to 1963-64 period is recorded below.

**TABLE VI-J**

<table>
<thead>
<tr>
<th>Year</th>
<th>Proportion</th>
<th>Year</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1948-49</td>
<td>.58</td>
<td>1956-57</td>
<td>.89</td>
</tr>
<tr>
<td>1949-50</td>
<td>.56</td>
<td>1957-58</td>
<td>.81</td>
</tr>
<tr>
<td>1950-51</td>
<td>.86</td>
<td>1958-59</td>
<td>.80</td>
</tr>
<tr>
<td>1951-52</td>
<td>.78</td>
<td>1959-60</td>
<td>.84</td>
</tr>
<tr>
<td>1952-53</td>
<td>.77</td>
<td>1960-61</td>
<td>.80</td>
</tr>
<tr>
<td>1953-54</td>
<td>.82</td>
<td>1961-62</td>
<td>.75</td>
</tr>
<tr>
<td>1954-55</td>
<td>.87</td>
<td>1962-63</td>
<td>.73</td>
</tr>
<tr>
<td>1955-56</td>
<td>.87</td>
<td>1963-64</td>
<td>.72</td>
</tr>
</tbody>
</table>

*Source:* See Table VI-G.

The final 'category' of grants is additional assistance grants which are made from time to time by the Commonwealth after assessment of particular circumstances at the time. These grants were made four times; 1957-58, 1961-62, 1962-63 and 1963-64.

Table VI-K presents a breakdown of the grants to states into the four broad categories, and indicates what amount of the grant was of an 'automatic' nature and what amount was discretionary. During the period of the Tax Reimbursement Scheme, discretionary grants were 17 to 30 per cent of the total. The new structure reduced the range to 6 to 13 per cent during the 1959-60 to 1963-64 period.

Diagrams VI-A and VI-B illustrate the division of the grants into their built-in and discretionary shares.
DIAGRAM VI-A

COMMONWEALTH GRANTS TO OR FOR THE STATES 1948-49 TO 1963-64 IN 1948-49 DOLLARS

- Total Grants
- Automatic Grants
- Discretionary Grants

SOURCE: Table VI-K.
DIAGRAM VI-B

DISCRETIONARY COMMONWEALTH GRANTS TO THE STATES
AS A PERCENTAGE OF TOTAL GRANTS TO THE STATES

<table>
<thead>
<tr>
<th>Year</th>
<th>Average 1948-49 to 1958-59</th>
<th>Average 1959-60 to 1963-64</th>
</tr>
</thead>
<tbody>
<tr>
<td>1952-53</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1953-54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1957-58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1961-62</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Source:** Table VI-K.
The period 1948-49 to 1963-64 must be separated at 1959-60 since grants in this year and later, reflect the new structure. In the recession of 1952-53, discretionary payments to the states declined $6m. in real terms. A further decline was recorded in the recovery year 1953-54. The recession in 1957-58 saw an increase in discretionary grants of 30 per cent. One-third of this increase was in the form of an additional assistance grant which was designed especially to stimulate employment. Eighty per cent of the grant was distributed according to the existing tax reimbursement formula and the remaining twenty per cent was divided between New South Wales and Queensland where the unemployment was most severe. In 1958-59, grants of a discretionary nature declined 4 per cent in real terms.

With the increase in unemployment in 1961-62, discretionary grants rose from $43m. to $79m. Almost two-thirds of this increase ($20m.) was in the form of an additional assistance grant which was announced in February of 1962, and would apply to the remainder of the financial year. Of this total, $5m. went to Queensland and $1m. to Tasmania where unemployment was above the national average. The remainder was distributed on the same basis as the housing and works program for that year. An additional $25m. grant was announced in June 1962 for 1962-63. It was suggested that this be spent by the states on employment-creating activities although it was not a prerequisite to receiving the grant. Later in 1962-63, a further $10m. was approved, and it was stipulated that this was to be

1 Some grants made in 1957-58 were announced towards the end of the year. Their effect on demand would certainly carry over into 1958-59.
used for employment-creating projects. At the beginning of the next financial year, an additional assistance grant of $40m. was approved. Each state was free to use any part of its share, as it wished, to 'assist' the state budget. The Commonwealth urged the states to use the grants for employment-creating projects.

If the formula-type grants are considered as datum, any anti-inflationary measures must originate within the framework of the discretionary portion of the grants to the states. During the first period of rising prices, 1949 to 1952, there appears to be little evidence of any anti-inflationary policy. Grants to the states, of a discretionary nature, increased from $21m. to $61m. in real terms, or by almost 300 per cent. During the years of excess demand and price increases from 1954 to 1957, discretionary grants declined. From $46m. in 1953-54, they reached a trough of $38m. in 1955-56 and increased to $41m. the next year. Since 1959-60 was the year of a profound structural change in the grants, there is no clear indication of the counter-cyclical aspect of the change in discretionary grants. In 1960-61, however, the increase was limited to $2m. in real terms.

In conclusion, the discretionary portion of grants to the states offered some scope for counter-cyclical policy. Both anti-recession and anti-inflation performance showed some improvement over the 1948-1964 period, despite the fact that the discretionary share of total grants declined in the latter part of the period. The additional assistance grants were unique as an anti-recession measure since they permitted the federal government to exercise selective regional fiscal policy. The funds were channelled to the state governments, thereby relieving the Commonwealth of the administrative
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. General Revenue</td>
<td>107</td>
<td>125</td>
<td>141</td>
<td>173</td>
<td>217</td>
<td>241</td>
<td>260</td>
<td>283</td>
<td>309</td>
<td>332</td>
<td>349</td>
<td>489</td>
<td>540</td>
<td>584</td>
<td>609</td>
<td>630</td>
</tr>
<tr>
<td>2. Specific Purpose</td>
<td>29</td>
<td>31</td>
<td>43</td>
<td>55</td>
<td>54</td>
<td>57</td>
<td>70</td>
<td>79</td>
<td>92</td>
<td>95</td>
<td>119</td>
<td>124</td>
<td>132</td>
<td>137</td>
<td>142</td>
<td>153</td>
</tr>
<tr>
<td>3. Total 1948-49 Dollars</td>
<td>136</td>
<td>156</td>
<td>184</td>
<td>228</td>
<td>271</td>
<td>298</td>
<td>330</td>
<td>362</td>
<td>401</td>
<td>427</td>
<td>468</td>
<td>613</td>
<td>672</td>
<td>721</td>
<td>751</td>
<td>783</td>
</tr>
<tr>
<td>4. Less Estimated Import Content 1948-49 Dollars</td>
<td>136</td>
<td>142</td>
<td>137</td>
<td>143</td>
<td>153</td>
<td>164</td>
<td>172</td>
<td>175</td>
<td>187</td>
<td>192</td>
<td>210</td>
<td>252</td>
<td>267</td>
<td>282</td>
<td>288</td>
<td>284</td>
</tr>
<tr>
<td>6. Total 1948-49 Dollars</td>
<td>136</td>
<td>161</td>
<td>163</td>
<td>177</td>
<td>191</td>
<td>192</td>
<td>191</td>
<td>192</td>
<td>207</td>
<td>222</td>
<td>239</td>
<td>244</td>
<td>258</td>
<td>288</td>
<td>299</td>
<td>297</td>
</tr>
</tbody>
</table>

Source: Commonwealth Payments To Or For The States 1965-66 and Appendix A.
burden and allowing the states to decide on specific areas of public expenditure.

(e) **SUBSIDIES AND GRANTS TO THE PRIVATE SECTOR**

The largest subsidy is for the dairy industry with smaller amounts of assistance for freight costs, the purchase of phosphate fertilizer and the development of certain aspects of mining. The grants to the private sector are mainly for non-government schools and homes for aged persons. The amount of these subsidies and grants fluctuated between $36m. in 1955-56 and $110m. in 1963-64. When deflated by the wholesale price index, the range was between $18m. in 1955-56 and $63m. in 1948-49.

Changes in the real value of these grants contributed somewhat to economic stability in terms of increasing or reducing the level of demand in the economy. From the table below, it can be seen that the changes were expansionary in two recessions and deflationary in four of the inflation years. From the nature of the programs involved, no significant counter-cyclical effect could have been expected.

**TABLE VI-L**

**SUBSIDIES AND GRANTS TO THE PRIVATE SECTOR**

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
<th>Year</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1948-49</td>
<td>63</td>
<td>1956-57</td>
<td>17</td>
</tr>
<tr>
<td>1949-50</td>
<td>32</td>
<td>1957-58</td>
<td>20</td>
</tr>
<tr>
<td>1950-51</td>
<td>49</td>
<td>1958-59</td>
<td>23</td>
</tr>
<tr>
<td>1951-52</td>
<td>31</td>
<td>1959-60</td>
<td>22</td>
</tr>
<tr>
<td>1952-53</td>
<td>23</td>
<td>1960-61</td>
<td>31</td>
</tr>
<tr>
<td>1953-54</td>
<td>21</td>
<td>1961-62</td>
<td>43</td>
</tr>
<tr>
<td>1954-55</td>
<td>22</td>
<td>1962-63</td>
<td>38</td>
</tr>
<tr>
<td>1955-56</td>
<td>16</td>
<td>1963-64</td>
<td>31</td>
</tr>
</tbody>
</table>

($m. at 1948-49 prices)
(f) CAPITAL OUTLAYS

Capital outlays are comprised of (a) expenditure on new assets, (b) loans for state works and housing and (c) other loans for capital works. The annual outlay in real 1948-49 dollars for each category is recorded in Table VI-M and illustrated in Diagram VI-C. The largest component, loans for state works and housing, fluctuated extensively from 1948-49 to 1954-55 with a maximum increase of $98m. and decline of $48m. From 1954-55 to 1963-64, the changes were not so marked, and, with the exception of 1960-61, there was an increase or no change each year.

One method of evaluating the stabilising impact of capital expenditure is simply to observe the real change in spending.\(^1\) Good performance is indicated by an increase during a recession and decline during inflation. With this as a benchmark, changes in capital spending were stabilising in two of the three recessions and one of the seven years of price inflation. The destabilising effect was particularly noticeable in the early nineteen fifties when the change in spending ranged between + 49.0 per cent and - 14.1 per cent. It was implied earlier that large fluctuations in public works spending may involve allocative costs.\(^2\) This would be true given a steadily increasing or constant demand for public goods. In the first five or six post-war years, the demand for public goods, such as housing, may have warranted the large increases in public spending.

It was also suggested in Chapter III that a reasonable appraisal of the stabilising impact of

---

1. See Chapter III, Section (d).
2. Ibid.
COMMONWEALTH BUDGETARY OUTLAYS FOR CAPITAL EXPENDITURE IN AUSTRALIA (1948-49 m.$)

DIAGRAM VI-C

m.$

Total

Loans to states for capital works and housing

Fixed capital expenditure on new assets

Other loans


Years

SOURCE: Table VI-M.
capital spending could be made by observing deviations from a long term growth trend of public capital works spending. This criterion is difficult to apply in the Australian case owing to the extreme fluctuations during the period 1948-49 to 1954-55. There was, however, a discernible trend between 1954-55 and 1963-64 with an average annual increase in outlay of 2.6 per cent. If good performance is indicated by increases above this rate during a recession year, and below the rate during inflation, then changes in capital spending were stabilising in both recessions and in three of the inflation years during this nine year period. Although there was no visible trend in the earlier period, the average annual change was +10.7 per cent. Changes in expenditure during the inflation years were above this average and in the recession year, the 14.1 per cent decline was well below the average.

A general idea of how capital outlays offset fluctuations in private investment is given in Diagram VI-D. The declining rate of increase in private investment in 1955-56, 1956-57, 1958-59 and 1961-62 were offset by a higher rate of increase in Commonwealth budget outlays for capital spending. In 1959-60 and 1962-63, private investment increases were offset by decreases in the Commonwealth sector.

Appraisal of the counter-cyclical performance of changes in outlays for capital spending depends on the benchmark selected. It appears that, given any reasonable criteria, the changes in the recession years 1957-58 and 1961-62 could be considered stabilising. The decline in expenditures during the inflationary period 1959-1961 would also be stabilising. The changes in the 1949-1953 period were clearly destabilising.
DIAGRAM VI-D

ANNUAL PERCENTAGE CHANGE IN COMMONWEALTH AND PRIVATE CAPITAL OUTLAY IN AUSTRALIA

Commonwealth

Private

Years

1952-1953
1957-1958
1961-1962
### TABLE VI-M

COMMONWEALTH BUDGETARY OUTLAY FOR CAPITAL EXPENDITURE IN AUSTRALIA
(1948-49 m.$)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Expenditure on New Assets</td>
<td>34</td>
<td>42</td>
<td>50</td>
<td>49</td>
<td>49</td>
<td>42</td>
<td>42</td>
<td>51</td>
<td>55</td>
<td>58</td>
<td>60</td>
<td>65</td>
<td>67</td>
<td>73</td>
<td>76</td>
<td>80</td>
</tr>
<tr>
<td>2. Loans for State Works</td>
<td>97</td>
<td>131</td>
<td>205</td>
<td>246</td>
<td>196</td>
<td>198</td>
<td>169</td>
<td>169</td>
<td>169</td>
<td>174</td>
<td>177</td>
<td>180</td>
<td>174</td>
<td>186</td>
<td>189</td>
<td>196</td>
</tr>
<tr>
<td>3. Other Capital Works Loans</td>
<td>23</td>
<td>27</td>
<td>43</td>
<td>45</td>
<td>47</td>
<td>34</td>
<td>40</td>
<td>41</td>
<td>48</td>
<td>51</td>
<td>61</td>
<td>56</td>
<td>36</td>
<td>45</td>
<td>39</td>
<td>38</td>
</tr>
<tr>
<td>4. Total</td>
<td>154</td>
<td>200</td>
<td>298</td>
<td>340</td>
<td>292</td>
<td>274</td>
<td>251</td>
<td>261</td>
<td>272</td>
<td>283</td>
<td>298</td>
<td>301</td>
<td>277</td>
<td>304</td>
<td>304</td>
<td>314</td>
</tr>
<tr>
<td>5. Percentage Change</td>
<td>+29.9</td>
<td>+49.0</td>
<td>+14.1</td>
<td>-14.1</td>
<td>-6.2</td>
<td>-8.4</td>
<td>+4.0</td>
<td>+4.2</td>
<td>+4.0</td>
<td>+5.3</td>
<td>+1.0</td>
<td>-8.0</td>
<td>+9.7</td>
<td>-</td>
<td>+3.3</td>
<td></td>
</tr>
</tbody>
</table>
Whether or not the moderate increases of 4.0 and 4.2 per cent in 1955-56 and 1956-57 were the result of fiscal action designed to restrain demand is unknown. It is only known that capital expenditures were proposed as counter-cyclical measures in the years 1955-56, 1957-59 and 1960-62.

(g) **TOTAL EXPENDITURE**

If the change in total real expenditure is considered in a stabilisation framework, a benchmark must be established from which to evaluate the annual changes. Abstracting from all other goals of public policy, one might simply look for an increase in demand of budgetary origin in a recession and a decrease during inflation. If stabilisation goals are not completely isolated, another benchmark is required. In their 1967 A.N.Z.A.A.S. paper, Artis and Wallace selected, as one of their benchmarks, the growth trend in expenditures and evaluated the expansionary or restrictiveness of expenditure changes in terms of deviations from the trend.¹ The National Accounts data used in their study does not, however, adequately represent real Commonwealth expenditure in Australia. Using the data in Appendix A of this study, (where some account has been made for overseas spending, import content and varying price indices), a similar procedure was carried out. Actual expenditures are shown on Diagram VI-E where the derived trend is also plotted. In Table VI-N deviations from the trend are recorded.

¹ Wallace and Artis, op. cit., pp.33-35.
DIAGRAM VI-E

COMMONWEALTH BUDGETARY EXPENDITURES AND TRANSFERS IN AUSTRALIA (1948-49 $m.)

SOURCE: Appendix A
TABLE VI-N

<table>
<thead>
<tr>
<th>Year</th>
<th>Deviations from the Trend in Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1954-55</td>
<td>- 3</td>
</tr>
<tr>
<td>1955-56</td>
<td>- 2</td>
</tr>
<tr>
<td>1956-57</td>
<td>- 17</td>
</tr>
<tr>
<td>1957-58</td>
<td>- 14</td>
</tr>
<tr>
<td>1958-59</td>
<td>+ 20</td>
</tr>
<tr>
<td>1959-60</td>
<td>- 10</td>
</tr>
<tr>
<td>1960-61</td>
<td>- 33</td>
</tr>
<tr>
<td>1961-62</td>
<td>+ 38</td>
</tr>
<tr>
<td>1962-63</td>
<td>+ 2</td>
</tr>
<tr>
<td>1963-64</td>
<td>+ 19</td>
</tr>
</tbody>
</table>

Source: See Diagram VI-F.

If a level of expenditure above trend during recession is considered stabilising, and a level below trend during inflation considered stabilising, the above table indicates that expenditure was destabilising only once; in 1957-58.¹

(h) SUMMARY

The discussion in Chapter III highlighted the problems involved in deciding whether or not a discretionary change in expenditures was stabilising. When factors such as allocative costs, equity and political considerations are introduced, it was suggested that an absolute increase (decrease) in real expenditure in times of recession (inflation) was not, perhaps, the most appropriate indication of good stabilising performance. Consequently, other criteria were established whereby the performance of expenditure changes could be evaluated.

¹ Using a similar technique and unadjusted data, the results obtained by Wallace and Artis indicated no years of destabilising performance. The results obtained here are broadly similar to those of Wallace and Artis. If the deviations in this and the Wallace and Artis study are ranked according to their 'expansionary' effect, the rank correlation coefficient (R²) is 0.739 which is significant at a 95 per cent level.
From the analysis presented in this chapter, it appears that certain expenditures, e.g. departmental spending, transfers to persons and state governments and capital works, were flexible enough to be used as a stabilisation measures in a limited manner. Considering all the post-war years of inflation and recession, and given the criteria suggested in Chapter III, the foregoing analysis indicates that changes in departmental spending were stabilising in eight years.\(^1\) Changes in social service payments, discretionary grants to the states and capital outlays were stabilising in six, five and four years respectively. In general, stabilising performance was better in recession than inflation years.

\(^{1}\) It will be recalled that there were seven years of inflation, three recession and three recovery years. It was noted in Chapter V that it was difficult to appraise any particular policy in 1953-54 and consequently, this year is omitted in the above conclusion.
CHAPTER VII

STABILISATION ASPECTS OF DISCRETIONARY TAX CHANGES

Section (e) of Chapter III discussed the problem of evaluating the stabilising performance of discretionary tax changes. Earlier, in Chapter I, the discretionary tax changes which took place between 1948-9 and 1963-4 were noted, and some indication was given of their contribution towards internal stability. The purpose of this chapter is to discuss, in detail, the stabilising performance of discretionary changes in the major Commonwealth taxes. It is recognised that the built-in features of the tax system are also important in a stabilisation context. This question is dealt with separately in Chapter VIII.

(a) PERSONAL INCOME TAX

The annual yield from the personal income tax is the largest component of Commonwealth tax revenue. Since 1948-49, there have been seven important structural changes in personal income taxation, six of these being permanent.

1. In 1950-51, the personal income tax and social service contributions were combined into one structure.

2. A wool levy, equal to 20 per cent of woolgrowers' income, was announced in October 1950 and came into effect in December of that year. It was not repeated

---

1 Personal income tax revenue accounted for 35 to 50 per cent of total annual Commonwealth tax revenue between 1948-9 and 1963-4.
in 1951-52, and the collections of the previous year were applied to tax liabilities in 1951-52.

3. The method of averaging incomes for the purpose of calculating taxable income of primary producers was altered in 1951-2. In effect, producers would only be able to apply averaging to that part of taxable income below $8,000.

4. Between 1948-49 and 1954-55, there were four general rate changes, each of which reduced the progressiveness of the rate structure, notably in the lower income groups.

Payment of the personal income tax is made in one of the three following ways. First, wage and salary earners may have the tax deducted from their gross earnings and forwarded by their employer to the Taxation Office in monthly instalments. Assessments are made starting in July, and any refunds are paid out in the July-December period. This reduces the net instalments for this six month period as compared to the January-June period. Second, primary producers are assessed on the basis of the previous year's income. Under certain circumstances, they can average their taxable income for the previous five years. Third, individuals may opt to pay a provisional tax based on their income in the previous year. Payment is due between April and June of the current financial year, and any adjustments are made following assessment by the Taxation Office of actual current income. These various methods of making the payment of tax liability result in a high cash flow to the Commonwealth in the final six months of the financial year.
The structural changes between 1948-49 and 1954-55 reduced the primary and marginal rates of tax for most income groups. In 1948-49, the lowest taxable income bracket was subject to an average rate of .42 per cent on the first $200, and a marginal rate of 2.5 per cent on the excess up to $300. The highest bracket was subject to an average rate of 56 per cent on $20,000 and 75 per cent on the excess. By the time of the last change in 1954-55, these rates were .42 per cent and 1.25 per cent in the lowest bracket, and 53 per cent and 67 per cent in the highest bracket which had been increased to $32,000.¹

Discretionary Changes

(i) 1948-49 to 1952-53

In the 1948-49 Budget Speech, the government announced a tax rate reduction equivalent to 16.7 per cent of payable income tax. The cost to revenue, estimated at $40m., would represent an increase in personal disposable income of slightly more than one per cent.² Six months later, in March 1949, a further reduction was announced which became effective in 1949-50 at a cost to revenue of $73m. This represented an increase in personal disposable income of almost two per cent. Both of these reductions were part of the government's post-war tax reform, designed to lighten the burden of taxes on individuals.

Given the economic conditions in these two years, and the nature of the reduction, the tax reform was ill-

¹ This information is found in the annual Report of The Commissioner of Taxation, various issues, 1948 to 1956.
² See Table VII-A.
timed. Demand was high and domestic supply was not keeping pace. The result was a very strong inflationary pressure in the economy. The tax reductions were made in such a manner as to give considerable benefit to lower and middle incomes where there was likely to be a relatively high marginal propensity to consume. The tax reductions clearly added to the demand inflation pressure.

The Budget Speech of October 1950 recognised that the growing amount of purchasing power, (mainly the result of a high wool income according to the Treasurer), was contributing to the wage-price spiral.\(^1\) The Treasurer noted that although the substantial inflow of foreign exchange from wool sales would improve Australia's balance of payments, 'the internal consequence would be very disruptive'.\(^2\) The government's solution to the problem was a 20 per cent levy on the proceeds of wool sales which would be applied to future tax liabilities of contributing woolgrowers. The proposal became effective in December of 1950, and between then and June 30, 1951, approximately $218m. was collected.\(^3\)

The basic aim of the scheme was to reduce the level of personal income during this period of rising wool prices, and so reduce the spending that would stem from high incomes. The amount collected was equal to four per cent of personal disposable income. The impact on private spending of this particular anti-inflation measure is difficult to determine. It was imposed as a refundable tax, the collections to be applied to future

---

2 Ibid., p.4.
3 The estimated collections were $206m.
tax liabilities. Consequently, woolgrowers were well aware that this was not an ordinary tax increase, and they knew it would mean a higher disposable income in the future. If the consumption pattern of woolgrowers was determined by a permanent income hypothesis, this measure would have little impact on current spending. However, if spending on the part of woolgrowers was based upon current changes in their disposable income, the measure would have a significant effect on current spending. Unfortunately, there is very little information regarding the determinants of spending by these non-wage and salary earners. The only other change in this year was a series of higher income tax allowances at an estimated cost to revenue of $14m. in 1950-51.

There were three major personal income tax changes in the 1951-52 Budget Speech. First, there was a 10 per cent levy on assessed tax liability in 1951-52 which was expected to increase revenue by $50m. Second, a new averaging procedure in calculating the taxable income of primary producers was introduced. This was expected to increase revenue by $94m. The third measure was the application of the 1950-51 wool levy to 1951-52 tax liabilities of woolgrowers at an estimated cost to revenue of $196m.

The first measure designed to reduce the level of demand in the economy, was clearly anti-inflationary.

---

1 See H.W. Arndt and B. Cameron, 'An Australian Consumption Function', E.R., April 1957. The point is also discussed in Artis and Wallace, op. cit., p.58.


3 See Statement 3 of the 1951-52 Budget Speech.
The precise impact, however, would depend on the response of consumers to the higher tax liability.\(^1\) The second measure appears to be the combination of a structural reform and a stabilisation measure. The reduction of primary producers' disposable income by almost $100m. (as a result of the averaging), was more than offset by the reduced tax liability when proceeds of the wool levy of 1950-51 were applied to tax liability of 1951-52. In view of the limited knowledge about the consumption behaviour of primary producers, the net effect of these last two measures on total demand is difficult to estimate.

The economic climate at the time of the early (August) 1952 Budget was considerably different from that of the previous year.\(^2\) As one of the measures to correct 'recessive tendencies', the Treasurer withdrew the special 10 per cent levy on personal income tax liability. The cost to revenue was estimated at $46m., which was equivalent to an increase in personal disposable income of less than one per cent. However, combined with a reduction in the sales tax, the measures undoubtedly offered some stimulus to demand.

\(^1\) It must be recognised that the marginal propensity to consume out of a tax-induced change in personal disposable income may vary between one period and the next. For example, in 1948 and 1949, the tax reductions may have been considered as windfall gains for the purchase of those goods denied to consumers in the early post-war years. Thus an M.P.C. of unity, or close to unity, is not unreasonable. In 1951-52, it is likely that consumers were not willing to change their consumption pattern; and offset the higher taxes by decreasing savings or financing purchases through instalment credit. Thus, the M.P.C. associated with this particular tax increase, (and lower level of personal disposable income), could be small.

\(^2\) The rate of increase of prices had fallen to 5 or 6 per cent per annum while unemployment increased sharply to more than 2.5 per cent of the work force.
In summary, discretionary personal income tax reductions over these five years were at an estimated cost to revenue of $173m. while the rise in revenue associated with discretionary tax increases was estimated at $144m. This excludes the wool levy which caused an increase and decrease in revenue of approximately $200m. in a two year period. The wool levy in 1950 and the changes in 1951 and 1952 were stabilising, while the 1948 and 1949 rate reductions were clearly destabilising.

(ii) 1953-54 to 1955-56

In the 1953-54 Budget Speech, the Treasurer announced two changes in the personal income tax. The first was a 12½ per cent reduction in tax rates which would apply to all income brackets. This was estimated to cost $65.8m. in the current financial year. The second proposal, at an estimated cost of $13.4m., was a series of personal exemptions and deductions. While these changes would stimulate demand, the Treasurer noted that they would also help to reduce costs and increase savings.¹

Cost reductions, according to the Treasurer's analysis, would occur because the lower tax would increase effort and efficiency. This is possible, if a particular preference pattern between income and leisure is postulated in which the income and substitution effects are favourable to more work after the tax reduction. It is possible, however, that conditions could lead to a substitution of leisure for work following a tax reduction. Therefore, in view of the lack of any empirical knowledge, there was no a priori

¹ See Section (b), Chapter 1.
reason to suppose that the tax reductions in 1953-54 would lead to lower costs through greater effort.¹

The Budget Speech also stated that lower taxes would produce a higher level of savings. This implied a short-run marginal propensity to save out of a tax-induced rise in personal disposable income greater than zero. This was quite possible in 1953-54 since individuals may have been anxious to rebuild their savings up to their prerecession level. On the other hand, the combination of postponed spending in the recession and relaxed import controls may have given rise to a spending propensity close to unity. Thus, both the cost-reducing and savings-encouraging implications of the tax reductions appear to have been based on a rather vague notion of consumer response to a tax-induced rise in personal disposable income.

The final post-war change in the rate structure of the personal income tax was announced in the 1954-55 Budget Speech. With the exception of the first income bracket, the rates in all brackets were reduced, on average, by nine per cent of the existing rates. It was estimated that the proposal would cost the Commonwealth $46.4m. in the financial year. As in 1953-54, the tax reductions were, in part, directed towards reducing costs.² Even if some cost reduction was achieved, the impact of the lower tax rates on demand was apparently overlooked at a time when the government was aware of renewed excess demand pressure. Combined with lower

¹ It is also possible that a personal income tax reduction may dampen a wage-price spiral given the unusual incidence assumption that the tax is shifted through wage claims. See G. Brennan and D.A.L. Auld, op.cit.

² See Section (b), Chapter 1.
sales tax in 1954-55, the increase in personal disposable income, brought about by the tax cut, would only lead to further excess demand and price inflation. The personal income tax reduction was clearly destabilising.

(iii) 1956-57 to 1958-59

During these three years, there were no tax rate changes. However, changes in exemptions and deductions were introduced in the Budget Speeches of 1956-57 and 1957-58. In the first instance, the cost to the government was estimated at $0.5m., while, in 1957-58, the estimated cost of the higher allowances was $15.9m. When announced in September 1957, there was no statement that the concessions were for anti-cyclical purposes. The increase in disposable income which they did afford during 1957-58 was undoubtedly stabilising, when widespread drought and increasing unemployment caused a decline in the rate of economic growth.

(iv) 1959-60 to 1963-64

The first rate reduction in five years was announced in the 1959-60 Budget Speech. This was a five per cent rebate on tax payable in the financial year 1959-60. The rationale behind this reduction is not clear. There was no mention in the Budget Speech of the need to stimulate demand, only that there had been numerous requests for tax reductions. The Treasurer stated he felt that this particular measure would be the most suitable form of relief. The reduction would cost the government an estimated $35.8m. in the coming year, and was equivalent to an 0.4 per cent rise in personal disposable income. Although the boom, which started in
early 1960, could not be foreseen, there were signs at
the time of the Budget that a healthy expansion was
underway. This was not the time for an income tax
reduction which would only contribute to the excess
demand pressures which were developing.

The rebate was withdrawn in August 1960 as part of
the government's plan to reduce the demand pressures in
the economy. Deflationary measures had been taken
earlier in 1960 to combat what was believed to be cost
inflation, but, by the time of the Budget, it was stated
that inflation '...does not all come from the side of
costs; the state of demand has much to do with it'. It
was estimated that cancellation of the rebate would
increase Commonwealth revenue by $40.5m. in the
financial year. The demand-reducing effect of this
measure would depend on the attitudes of consumers
towards instalment credit finance and saving. The amount
of consumer durable goods financed by instalment credit
in 1960-61 declined by $7.5 million while personal
savings increased by $121m. In real terms, personal
consumption increased by only 1.8 per cent. Although a
variety of factors contributed to the reduced level of
consumer demand, it seems clear that the tax increase
was not offset by recourse to more instalment credit or
a reduction in savings, and therefore contributed to the
reduction in the rate of spending.

Despite the rapidly increasing unemployment in 1961,
there were no income tax rate reductions in the 1961-62
Budget. A few minor concessions were granted at an

1 Holt, H., Budget Speech, 1960-61, pp.2-3. Import
restrictions were removed in February 1960. It was
hoped that the inflow of cheaper goods would both reduce
costs and allow supplies to keep pace with demand.
estimated cost to revenue of $0.5m. In February, 1962, the government introduced a package of expansionary economic measures, one of which was a rebate of five per cent of annual income tax payable. Since this was to apply immediately, (March 1962), the rebate amounted to a 15 per cent tax liability reduction in the four remaining months of 1961-62. It would continue to operate at the five per cent level in 1962-63. It is estimated that the impact in 1961-62 was an increase in personal disposable income of $20m. The effect on consumption of this tax rebate is not easy to estimate, although it will be shown later in Chapter X that, on the basis of average behaviour, consumption probably increased as a consequence of the tax change. The increase in savings of $114m. in 1961-62 suggests also the possibility of the tax rebate going into savings. Whatever the exact impact, it was preferable to no change at all.

There were no other changes in personal income tax until the 1963-64 Budget when several recommendations of the Commonwealth Committee on Taxation were put into effect. Most of these were in the form of exemptions and deductions, amounting to an estimated cost to revenue of $5m.

In summary, there were six discretionary personal income tax changes from 1959-60 to 1963-64, three of

---

No estimate is given for the cost to revenue in 1961-62 of the personal income tax reduction. When announced, in February of 1962, it was given as a rebate of 15 cents in the dollar of tax liability. For P.A.Y.E. taxpayers, the rebate was effective throughout the last quarter of 1961-62. Judging from the drop in taxes paid in this quarter, the cost to revenue was approximately $20m. (See Quarterly Estimates of National Income and Expenditure, No. 11).
these being in the form of exemptions and deductions changes, and the others, changes in the tax rate. The 1960 and 1962 rate changes were clearly stabilisation measures. The 1959-60 rebate was destabilising, contributing to the excess level of demand. Whether or not a 'no tax change' policy at that time would have contributed very significantly to restraining the expansion is not clear.

Conclusion

Diagram VII-A is a graphical interpretation of the impact of the discretionary income tax changes. A decline (increase) in the effective tax rate after a change in tax legislation during a recession (inflation) year indicates stabilising policy. The performance of discretionary tax changes was stabilising in all three recessions, and in the five inflation years when tax changes were made, policy was stabilising three times. The flexibility of the personal income tax is reflected by the eleven rate changes during the 1948-9 to 1963-64 period.

(b) COMPANY INCOME TAX

Tax revenue from company income in each year is based on taxable income of the previous year. Basically, there is a primary rate on the first $10,000 of taxable income and another, usually higher rate, on the balance over $10,000. Public and private companies are taxed at different rates. Both categories of companies are

1 There were, in a sense, four rate changes since the measures of February 1962 led to one effective rate change between March and June of 1962 and another for 1962-63.
PERSONAL INCOME TAX AS A PERCENTAGE OF TOTAL PERSONAL INCOME BEFORE AND AFTER DISCRETIONARY TAX CHANGES 1948-49 TO 1963-64

---

Diagram VII-A

---

Years

1952-1953
1957-1958
1961-1962

---

before tax changes

after tax changes

---

14
13
12
11
10
9

---
## Table VII-A

**Personal Income Tax Revenue**

<table>
<thead>
<tr>
<th>Year</th>
<th>Actual Revenue</th>
<th>Estimated Revenue</th>
<th>Estimated Revenue</th>
<th>Discretionary Increases</th>
<th>Discretionary Reductions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1948-49</td>
<td>398.9</td>
<td>340.0</td>
<td>380.0</td>
<td>40.0</td>
<td></td>
</tr>
<tr>
<td>1949-50</td>
<td>392.0</td>
<td>390.0</td>
<td>461.0</td>
<td>73.0</td>
<td></td>
</tr>
<tr>
<td>1950-51</td>
<td>733.0</td>
<td>674.0</td>
<td>470.0</td>
<td>218.0</td>
<td>14.0</td>
</tr>
<tr>
<td>1951-52</td>
<td>800.4</td>
<td>877.0</td>
<td>929.0</td>
<td>144.0 (130.0)</td>
<td>196.0</td>
</tr>
<tr>
<td>1952-53</td>
<td>775.8</td>
<td>768.0</td>
<td>814.0</td>
<td>2.0</td>
<td>46.0</td>
</tr>
<tr>
<td>1953-54</td>
<td>788.0</td>
<td>799.0</td>
<td>878.0</td>
<td>79.2</td>
<td>46.4</td>
</tr>
<tr>
<td>1954-55</td>
<td>722.8</td>
<td>714.6</td>
<td>761.0</td>
<td>46.4</td>
<td></td>
</tr>
<tr>
<td>1955-56</td>
<td>774.2</td>
<td>780.0</td>
<td>780.0</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>1956-57</td>
<td>807.4</td>
<td>803.5</td>
<td>804.0</td>
<td>15.9</td>
<td></td>
</tr>
<tr>
<td>1957-58</td>
<td>870.1</td>
<td>930.1</td>
<td>946.0</td>
<td>35.8</td>
<td></td>
</tr>
<tr>
<td>1958-59</td>
<td>777.9</td>
<td>806.8</td>
<td>806.8</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>1959-60</td>
<td>884.3</td>
<td>862.6</td>
<td>898.4</td>
<td>20.0</td>
<td></td>
</tr>
<tr>
<td>1960-61</td>
<td>1037.4</td>
<td>1020.1</td>
<td>980.0</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>1961-62</td>
<td>1074.6</td>
<td>1153.2</td>
<td>1153.7</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>1962-63</td>
<td>1083.4</td>
<td>1103.2</td>
<td>1153.7</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>1963-64</td>
<td>1272.3</td>
<td>1213.7</td>
<td>1220.0</td>
<td>6.3</td>
<td></td>
</tr>
</tbody>
</table>

### Sources:

*Budget Speeches and Reports of The Commissioner of Taxation, 1948-9 to 1963-4.*

### Notes:

1. In first three years, includes social service contribution.
2. Allowing for discretionary changes.
3. Before discretionary changes.
4. Withdrawal of the Wool Levy. Personal income tax revenue was over-estimated by more than 10 per cent. The estimated revenue effect of the discretionary increase was therefore reduced.
subject to an undistributed profits tax, with private companies subject to an additional or supplementary tax on excess retentions. There are also special rates of tax for life assurance companies, co-operatives and non-resident companies. In this latter case, the rate may depend on the source of the income. A breakdown of the rates applicable to categories of income and types of companies is found in the annual Report of The Commissioner of Taxation.¹

Discretionary Changes

(i) 1948-49 to 1952-53

In 1948-49, the rates of company income tax were as follows. Public and private companies were taxed at 25% on the first $10,000 of taxable income while the rates on the balance over $10,000 were 35% and 30% respectively.² Mutual life assurance companies were taxed at primary and secondary rates of 20 and 25 per cent respectively. These rates remained unchanged for the next two years.³

As part of its anti-inflationary program in 1951-52, the government introduced several company income tax changes designed to reduce the level of 'abnormal' profits in the company sector.⁴ Public companies would

¹ See Forty-Third Report of The Commissioner of Taxation, p.46.
² To facilitate the discussion on company income tax changes, the rate of tax on the first $10,000 of taxable income will be referred to as the primary rate, and the rate of tax on the balance of taxable income will be referred to as the secondary rate.
³ Although rates remained unchanged, the special post-war depreciation was extended for a year in 1949-50. In 1950-51, legislation was introduced to increase the retention allowances.
⁴ These measures were foreshadowed in the 1950-51 Budget Speech.
be taxed at a primary rate of 35 per cent and there would be a special levy equal to 10 per cent of taxable income. Combined with the withdrawal of the wartime tax on undistributed profits, the net increase in Commonwealth revenue was expected to be $21.8m. The second change was a tax rate of 30 per cent for mutual life assurance companies. The third change was an increase in the secondary rate of taxation for private companies from 30 to 35 per cent, which would increase revenue by an estimated $11.8m. The final change was an advance payment of ten per cent of tax payable in 1951-52 by private and public companies which would be credited towards tax liabilities the next year. This advance payment was estimated to raise an additional $22.4m.

Non-dwelling private fixed investment increased by less than one per cent in 1951-52, and this fact, combined with the sudden increase in unemployment at the end of the year, brought about a withdrawal of some of the restrictive company tax measures. It was felt that this action would assist in the 'checking of certain recessive tendencies in business.....'1 First, the primary rate of 35 per cent for public companies was reduced to 25 per cent at an estimated cost of $2.2m. Second, the advance payment was discontinued at an estimated cost of $28m. Third, the portion of non-taxable undistributed profits was increased for private companies but there was no estimate of the cost.

Given the economic conditions at the time of the 1951-52 Budget, (and the assumption of a non-shifted tax), the company tax changes which reduced company

1 Fadden, Budget Speech, 1952-53, p.5.
profits by 11 per cent, were probably deflationary. In view, however, of the substantial decline in private investment and increasing unemployment towards the end of 1951-52, the tax measures were probably too severe.

In 1952-53, the company tax changes increased profits by 7 per cent, providing a stimulus to investment.

(ii) 1953-54 to 1955-56

Despite the tax reductions in 1952-53, private non-dwelling fixed investment did not increase. It is likely that general economic conditions at the beginning of 1952-53 had a strong influence on investment decisions. In the Budget Speech of 1953-54, further company tax reductions were introduced to reduce costs through "...greater efforts and greater efficiency..." Rates of taxation for public companies were reduced by five percentage points on the first $10,000 of taxable income, and by ten percentage points on the remainder. For private companies, the primary and secondary rates of tax were reduced by five percentage points. These two measures were estimated to cost $46.6m. A further concession was granted to private companies, allowing them to retain ten per cent of distributable income from properties without supplementary tax liability. This was estimated to cost $0.2m.

There were no changes in company income tax legislation in the 1954-55 and 1955-56 Budget Speeches.

1 Fadden, B.S., 1953-54, p.4. These were the general reasons given for all tax reductions in 1953-54.

2 This latter reduction was achieved by withdrawing the 10 per cent levy on public companies.
However, in March, 1956, the primary and secondary rates of tax were increased five percentage points as part of the government's anti-inflationary measures. The new rates would apply to 1955-56 incomes which would increase revenue in 1956-57 by an estimated $40m.

In summary, the 1953-54 rate reduction, following the decline in private investment in 1952-53, was a desirable stimulus to investment, increasing profits by 10 per cent. The anti-inflationary rate increase in March 1956, which reduced profits by 5 per cent, was accompanied by no increase in real private investment in 1956-57. After increases of 13.6, 9.3 and 5.2 per cent, the tax measure was appropriate, although a strong case could have been made for a tax increase in the 1955 Budget Speech.

(iii) 1956-57 to 1958-59

The rate increases imposed in March 1956 were partially withdrawn in September 1957 with the announcement in the Budget Speech that primary and secondary rates would be reduced 2½ percentage points. Although there was no specific reason given for the reduction in rates, it is possible that the government was trying to stimulate private investment.¹ There was certainly no indication that it was considered an anti-recession measure.² In retrospect, the change, which increased company profits by 3 per cent, was a stabilising one.

¹ As noted above, there was no increase in real private investment following the higher tax rates in March 1956.
² According to the government a 'high degree of stability' had been achieved. Budget Speech 1957-8, p.11.
Another change which affected companies was a 50 per cent increase in depreciation rates. This was to apply to 1957-58 incomes and would be at a cost to revenue of $4m. in 1957-58 and $52.8m. in 1958-59. The change reduced taxable income substantially in 1957-58. Although this measure was announced as a tax reform, the stabilisation effect should not be overlooked. The possible stimulus to investment came at a time when certain recessive tendencies were present in the economy, especially in the business sector.

(iv) 1959-60 to 1963-64

The only company tax change in 1959-60 was an increase in the retention allowance for private companies at a cost of about $3m. in the current financial year. The concession was granted on the grounds that these companies found it more difficult to obtain outside funds for capital expansion and greater reliance had to be placed on internally available funds.

In 1960, as part of its plan to reduce the current pressures on demand, the government increased the company tax by 2½ percentage points, returning the tax rate schedule to its March 1956 levels. The change was estimated to increase revenue by $33m. which would reduce after-tax profits in 1959-60 by approximately 3 per cent. Shortly afterwards, in November 1960, the government announced further restrictive measures to combat inflationary pressures. One of these was to disallow tax deductibility of interest paid on borrowed funds for certain companies, mainly those engaged in hire purchase. This was an attempt to reduce the expansion of instalment credit by rendering such investment less profitable. In the face of the sudden
turn of events in late 1960 and early 1961, the measure was withdrawn in May of 1961.

There were no further company tax changes until February 1962. Along with several other expansionary proposals, an investment allowance of 20 per cent on new equipment in manufacturing industries was proposed. This would come into effect for the remainder of the 1961-62 financial year, and would cost the government an estimated $12m. in 1961-62. The exact nature of the impact of this proposal is difficult to determine, but it does seem to have had some effect on investment. First of all, deductions and exemptions in 1961-62 increased $38m., or approximately 28 per cent. Second, private fixed capital investment increased steadily in the three quarterly periods following the effective date of the deduction.

The last change in company income tax during this five year period was a further increase in the retention allowance for private companies to assist them in financing their expansion. The cost to revenue in 1963-64 was estimated at $3m.

In summary, company tax laws were frequently revised between 1948-49 and 1963-64 with the aim of promoting internal stability. Rates of taxation were changed seven times and there were two significant changes in the legislation governing the calculation of taxable income. On three occasions, changes were designed specifically to restrict investment. These were followed by recessions and policy changes to encourage investment.
COMPANY INCOME TAX PAID AS A PERCENTAGE OF COMPANY INCOME, IN THE YEAR THE TAX IS PAID, BEFORE AND AFTER DISCRETIONARY CHANGE 1948-49 TO 1963-64
<table>
<thead>
<tr>
<th>Year</th>
<th>Actual Revenue</th>
<th>Estimated Revenue</th>
<th>Estimated Revenue</th>
<th>Discretionary Increases</th>
<th>Discretionary Reductions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1948-49</td>
<td>145.7</td>
<td>152.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1949-50</td>
<td>167.4</td>
<td>162.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1950-51</td>
<td>181.1</td>
<td>168.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1951-52</td>
<td>301.6</td>
<td>270.05</td>
<td>214.0</td>
<td>56.0 (68.0)</td>
<td></td>
</tr>
<tr>
<td>1952-53</td>
<td>334.1</td>
<td>334.0</td>
<td>364.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1953-54</td>
<td>268.3</td>
<td>267.2</td>
<td>314.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1954-55</td>
<td>343.0</td>
<td>318.0</td>
<td>318.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1955-56</td>
<td>373.8</td>
<td>374.0</td>
<td>374.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1956-57</td>
<td>433.1</td>
<td>420.0</td>
<td>380.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1957-58</td>
<td>430.7</td>
<td>420.0</td>
<td>450.0</td>
<td>30.0</td>
<td></td>
</tr>
<tr>
<td>1958-59</td>
<td>439.4</td>
<td>414.0</td>
<td>462.8</td>
<td>52.8</td>
<td></td>
</tr>
<tr>
<td>1959-60</td>
<td>458.2</td>
<td>465.2</td>
<td>467.8</td>
<td>2.6</td>
<td></td>
</tr>
<tr>
<td>1960-61</td>
<td>565.2</td>
<td>535.2</td>
<td>502.0</td>
<td>33.2</td>
<td></td>
</tr>
<tr>
<td>1961-62</td>
<td>565.4</td>
<td>582.0</td>
<td>582.0</td>
<td>12.0</td>
<td></td>
</tr>
<tr>
<td>1962-63</td>
<td>519.8</td>
<td>524.0</td>
<td>524.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1963-64</td>
<td>586.2</td>
<td>583.0</td>
<td>580.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: Budget Speeches, 1948-49 to 1963-64 and Reports of The Commissioner of Taxation.

Notes:
1. Income tax paid, based on previous year's taxable income.
2. Allowing for discretionary changes.
3. Before discretionary changes.
4. Announcement that government was considering ways of taxing the high level of company profits.
5. There is a considerable error between actual and estimated revenue. Company Income Tax Revenue was considerably under-estimated in 1951-52. The estimated revenue effect of the discretionary increase was therefore adjusted upwards.
Conclusion

A graphical interpretation of the impact of discretionary tax changes is shown in Diagram VII-B. In periods of demand inflation, an increase in the ratio of tax payment to company income (after the tax change) is desirable. A decrease is desirable during periods of recession. With such criteria, discretionary changes in the company income tax were stabilising in all the recessions years. In the three inflationary periods where changes were made, the measures were stabilising. This record of performance should, however, be qualified. First, the anti-inflationary measures of 1951-52 and 1956 appear badly timed since they were made well after the peak of the boom. Second, strong cases could have been made for a rate reduction in the 1961-62 Budget Speech, and rate increases in the Budget Speeches of 1950-51 and 1955-56.

(c) SALES TAX

The Commonwealth sales tax is applied to the wholesale price of those goods subject to the tax at the point where the good is sold to a retailer by the manufacturer or the wholesaler. Returns are made monthly by all manufacturers and wholesalers who are taxpayers. There are various categories of taxable goods subject to different rates. Both categories and rates were altered several times in the period 1948-49 to 1963-64.

Discretionary Change

(i) 1948-49 to 1952-53

In the post-war years before 1949-50, there were only two rates; ten and twenty-five per cent. The
former was reduced in 1949 to \( \frac{8}{3} \) per cent while some goods in the 25 per cent category were reduced to this new low rate. These reductions were estimated to cost federal revenue $10m.

A number of sales tax changes were introduced in the 1950-51 Budget Speech as a means of reducing the consumption of less essential goods, and, thereby, according to the Treasurer, freeing scarce resources for the production of more essential goods. The major tax increases were:

<table>
<thead>
<tr>
<th>Item</th>
<th>Rate Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) automobiles</td>
<td>( \frac{8}{3} ) to 10 per cent</td>
</tr>
<tr>
<td>(b) musical instruments,</td>
<td>( \frac{8}{3} ) to 25 per cent</td>
</tr>
<tr>
<td>gramophones, etc.</td>
<td></td>
</tr>
<tr>
<td>(c) watches, cameras, etc.</td>
<td>( \frac{8}{3} ) to 33 per cent</td>
</tr>
<tr>
<td>(d) jewelry</td>
<td>25 to 33 per cent</td>
</tr>
</tbody>
</table>

This brought the number of categories to four with rates ranging from \( \frac{8}{3} \) per cent to 33 per cent. These changes were expected to increase revenue by $14m. while several new exemptions would reduce revenue by $1.2m.

These restrictive measures appear to have had little effect on personal consumption expenditures as the volume of taxable sales increased rapidly following the Budget. In early 1951 however, the rate of increase fell to zero. Prices continued to rise, and in September 1951, a number of anti-inflationary tax proposals were made. A new six-category rate schedule was proposed with rates ranging from \( 12\frac{1}{2} \) per cent to \( 66\frac{2}{3} \) per cent. Automobiles were taxed at 20 instead of 10 per cent with luxury goods, such as jewelry, being taxed at the highest rate of \( 66\frac{2}{3} \) per cent. Combined with the other measures in this particular Budget, the sales tax changes would have 'a maximum effect in
curtailing the excessive demand for goods...\(^1\). How much the government wanted to curtail demand is not known, but several categories of consumer spending declined in real terms during 1951-52. The obvious temporary nature of these high rates undoubtedly led to a substitution effect against current consumption. The impact of these sales tax changes was estimated to increase revenue by $70m., but this seems to be a considerable over-estimate.\(^2\)

A partial withdrawal of these measures was made in 1952-53 when the 66\(\frac{2}{3}\) and 25 per cent rate were abandoned. Goods in the high rate bracket were placed in the 50 or 33\(\frac{1}{3}\) per cent bracket while those in the 25 per cent bracket would be taxed at 20 per cent. There was no specific reason for these changes, only a general recognition that some unemployment had emerged while the inflation continued. The limited scope and magnitude of these rate reductions, (estimated to cost revenue only $10.4m.), could not be expected to induce a large increase in consumer expenditure in 1952-53.

(ii) 1953-54 to 1955-56

The 1953-54 Budget Speech contained further sales tax reductions which had been foreshadowed the year before. The major change was the elimination of the 50, 33 and 20 per cent rate brackets and the substitution of a 16\(\frac{1}{3}\) per cent rate. Some goods, previously taxed at 20 per cent, would now be taxed at 12\(\frac{1}{3}\) per cent. The cost

\(^1\) Fadden, Budget Speech, 1951-2, p.10.

\(^2\) Total sales tax revenue was estimated at $234m. whereas only $191m. was realised. Based on the change in the sale of taxable goods, the discretionary change increased revenue by about $58m.
of these rate changes in the current year was estimated at $16.5m. These were not proposed specifically as demand-stimulating measures, but they no doubt contributed towards the substantial increase in real consumption in 1953-54.

Further sales tax reductions were announced in the 1954-55 Budget Speech. The 12\(\frac{1}{2}\) per cent bracket was reduced to 10 per cent and other items such as musical instruments, toys, etc. were reduced to 12\(\frac{1}{2}\) per cent. Certain types of machinery, equipment, aircraft and parts were exempted from tax. The total cost of the changes was estimated to be $19.6m., the exemptions accounting for one-quarter of this amount.

It was noted in Chapter I that the Treasurer felt these reductions, like those in 1953-54, would assist in reducing costs and price inflation. If the rate reductions were passed on in the form of lower prices, there would likely be an increase in the demand for such goods. Unlike September 1953, the economy was near full employment in September 1954, and in such circumstances, the reduction in sales tax, (combined with the lower personal income tax), probably led to demand inflation pressures which were more than offset by the reduction in costs.¹

The next change in sales taxes was announced in March 1956 as part of the special economic measures to curb inflation and the balance of payments problem. The following rate changes were made: automobiles, 16\(\frac{2}{3}\) to 30 per cent; commercial vehicles, 12\(\frac{1}{2}\) to 16\(\frac{2}{3}\) per cent.

¹ On the incidence assumption that prices and costs respond to price changes induced by a change in the sales tax, a rate reduction may lead to a reduction in the rate of inflation. See Brennan and Auld, op. cit.
and certain goods at 16\(\frac{2}{3}\) per cent to 25 per cent. Revenue was expected to increase by $60m. in a full year and since the change became effective in March 1956, $15m. is a rough estimate of the revenue impact in 1955-56. There was no immediate response to the higher sales taxes. New car registrations continued to increase at a rate which had started to decline some months before the tax changes. The volume of retail sales increased until June 1956. In 1956-57, however, new car registrations declined absolutely, and personal expenditure on durable goods increased by less than one per cent in real terms.

(iii) 1956-57 to 1958-59

There were no further changes in sales taxes until the Budget Speech of 1957-58 when the tax on household furnishings and electrical equipment was reduced from 10 to 8\(\frac{1}{3}\) per cent, and the tax on luggage and other related goods reduced to 12\(\frac{1}{2}\) per cent. The estimated cost of these reductions was $6m. The measure was not specifically designed to encourage consumption, but, with the slowdown in economic activity and reduced inflationary pressure, such a change in tax policy seemed appropriate at the time. Consumption of these household goods increased in 1957-58 by more than 10 per cent. This substantial increase could be explained by the fact that consumers regarded the tax reduction as temporary.\(^1\)

\(^1\) The other contributing factor was the willingness of consumers to finance personal consumption through instalment credit.
There were no sales tax changes between 1958 and 1960. In the Budget Speech of 1960-61, a number of small changes were proposed. The concessions were at an estimated cost to revenue of $0.7m., while other changes were estimated to increase revenue by $0.6m. Two months following the Budget, a sales tax increase was proposed as part of the government’s plan to reduce the excess demand pressures in the economy. The high level of personal spending was having two undesirable effects. First, the level of imports induced by the spending was causing a serious drain on foreign reserves; and, second, excess demand was creating domestic price inflation.  

The motor industry was singled out as the target for the sales tax measures. The high level of automobile purchases was detrimental to the economy for two reasons, according to the Treasurer. First, an inordinate amount of domestic resources was being utilised in this industry, and, second, imports of products associated with the automobile industry were very high. The tax rate increases were from 30 to 40 per cent on motor cars and from $16.67 per cent to 25 per cent on motor cycles and similar vehicles. These tax impositions were withdrawn in February 1961 as the result of a sudden decline in economic activity in the motor industry. No estimate was given as to the gain to revenue of the tax increase, but the actual revenue effect appears to be an increase of $6.3m.  

1 See the Statement by the Treasurer, H.R. Nov. 15, 1960, Economic Measures, p.3.  
2 Ibid., p.15.  
3 Taxable sales in the 40 per cent bracket (which existed for three months) were $62.8m. See 41st Report of The Commissioner of Taxation, p.154.
government was anxious that there be some reduction in the activity of the motor industry but the rapidity and intensity of the decline was probably more than they had desired. The remarkably heavy impact on current consumption of automobiles was probably the consequence of consumers viewing the tax as temporary.

By September of 1961, it was obvious that discretionary action was needed to stimulate consumer spending. The stimulant was a reduction in the rate of sales tax on household durables from $8\frac{1}{3}$ to $2\frac{1}{2}$ per cent. A similar tax reduction in 1957-58 was associated with a large increase in real expenditure on durable goods. Conditions were not the same in 1961, however, and household durable spending declined by 1.5 per cent. The cost of the concessions was estimated at $18.4m.

A further stimulus to spending was announced in the special economic measures of February 1962. This was a reduction in the rate of sales tax on automobiles from 30 to $22\frac{1}{2}$ per cent at an estimated cost to revenue of $9.0m. in 1961-62. Although sales of new cars had started to increase some months before, it was felt that an acceleration of the recovery would improve the employment situation. The last sales tax change in this period was in August 1963 when certain foodstuffs became exempt from sales tax. This was designed to reduce the cost of living and encourage food consumption. The cost of the measure was estimated at $19.8m.

The sales tax was used as a counter-cyclical measure on eight occasions during 1948 to 1963. In one

\footnote{Unlike 1957-58, when consumer durable expenditure was sustained by a large increase in instalment credit, and possible reduction in personal savings, there was a reduction in instalment credit and increase in personal savings in 1961-62.}
DIAGRAM VII-C

THE EFFECTIVE RATE OF SALES TAX BEFORE AND AFTER DISCRETIONARY TAX CHANGES 1948-49 TO 1963-64
<table>
<thead>
<tr>
<th>Year</th>
<th>Actual Revenue</th>
<th>Estimated Revenue</th>
<th>Estimated Revenue</th>
<th>Discretionary Increases</th>
<th>Discretionary Reductions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1948-49</td>
<td>78.1</td>
<td>76.0</td>
<td>80.0</td>
<td>14.0</td>
<td>10.0</td>
</tr>
<tr>
<td>1949-50</td>
<td>84.8</td>
<td>70.0</td>
<td>103.2</td>
<td>70.0</td>
<td>60.0</td>
</tr>
<tr>
<td>1950-51</td>
<td>114.4</td>
<td>116.0</td>
<td>164.0</td>
<td></td>
<td>10.4</td>
</tr>
<tr>
<td>1951-52</td>
<td>191.0</td>
<td>234.0</td>
<td>186.4</td>
<td></td>
<td>16.5</td>
</tr>
<tr>
<td>1952-53</td>
<td>178.2</td>
<td>176.0</td>
<td>193.0</td>
<td></td>
<td>19.8</td>
</tr>
<tr>
<td>1953-54</td>
<td>191.4</td>
<td>175.5</td>
<td>204.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1954-55</td>
<td>200.9</td>
<td>184.2</td>
<td>212.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1955-56</td>
<td>220.0</td>
<td>212.0</td>
<td>212.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1956-57</td>
<td>220.0</td>
<td>227.0</td>
<td>212.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1957-58</td>
<td>251.5</td>
<td>260.0</td>
<td>260.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1958-59</td>
<td>275.6</td>
<td>259.0</td>
<td>265.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1959-60</td>
<td>287.2</td>
<td>294.0</td>
<td>294.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1960-61</td>
<td>328.4</td>
<td>300.0</td>
<td>300.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1961-62</td>
<td>346.0</td>
<td>360.8</td>
<td>360.9</td>
<td>.6</td>
<td>.7</td>
</tr>
<tr>
<td>1962-63</td>
<td>346.0</td>
<td>367.1</td>
<td>360.8</td>
<td>6.3</td>
<td></td>
</tr>
<tr>
<td>1963-64</td>
<td>367.1</td>
<td>321.6</td>
<td>340.0</td>
<td>18.4</td>
<td></td>
</tr>
</tbody>
</table>

**Source:** Budget Speeches and Reports of The Commissioner of Taxation, 1948-49 to 1963-4.

**Notes:**
1. Allowing for discretionary changes.
2. Before discretionary changes.
3. There is a large error between actual and estimated revenue. Based on sales of taxable goods, revenue before discretionary action would have been $133m, making the impact of the change equal to (191-133) = 58.
15 month period, there were four changes. With the exception of 1952-53 and 1961-62, these changes were followed by the desired change in consumption. The possibility of selective use of the tax, the short implementation lag and the temporary nature of some changes, made this a useful weapon of stabilisation policy.

Conclusion

The criterion for evaluating sales tax changes calls for rate reductions in periods of unemployment and rate increase during demand inflation. As noted in Chapter III, rate reductions in periods of under-full employment and cost inflation would not be considered destabilising. The effect of changes in the sales tax on the cost of taxable goods is illustrated in Diagram VII-C by plotting the effective tax rate 

\[
\frac{\text{tax receipts}}{\text{sale of taxable goods}}
\]

before and after tax changes. The changes were stabilising in three recessions and four inflation years. In only one year, 1949-50, was the change clearly destabilising.

(d) **EXCISE TAX**

Excise tax revenue is derived mainly from the sale of tobacco products, alcoholic beverages and petrol. The revenue from each source is based on the volume or quantity sold and is collected on a monthly basis. Between 1948-49 and 1963-64, there were only two significant changes in excise tax rates, both of them being anti-inflationary measures. Other changes during

1 Even in 1952-53 and 1961-62, when consumption of durable goods fell, it can be argued that the tax reductions prevented an even greater decline.
the period were small, involving a cost or gain to revenue of less than $1m.

**Discretionary Changes**

The first restrictive measure was in 1951-52 when rates of tax on tobacco and alcohol were increased to yield an estimated additional $44m. In the same year as the tax increases, expenditure on these taxed products rose 26.5 per cent. Real consumption rose 6.0 per cent.

The second increase in excises became effective in March 1956 as part of the government's special anti-inflationary policy. The full year impact of the increased rates on tobacco, alcohol and petrol was estimated to increase revenue by $110m. The effect on revenue in 1955-56 would be roughly one-quarter of this amount. There is, however, some reason to believe that the original estimate of $110m. was too high. In the 1956-57 Budget Speech, Statement 2 provides a partial breakdown of the estimated increases in excise revenue for 1955-56 which is as follows:

1. Increase in excise revenue from petrol owing to discretionary rate change = $20m.
2. Increase in excise on beer owing to discretionary rate changes = $43m.
3. Increase in excise from liquor = $1m.
4. Increase in excise from tobacco = $20m.

Even if the entire estimated increase in revenue from tobacco products is attributed to the discretionary change, the full year impact is an increase of $84m. Thus, the originally stated impact of the tax increases appears to have been an overestimate of at least $26m.
### TABLE VII-D

**EXCISE TAX REVENUE**

($m.$)

<table>
<thead>
<tr>
<th>Year</th>
<th>Actual Revenue</th>
<th>Estimated Revenue</th>
<th>Estimated Revenue</th>
<th>Discretionary Increases</th>
<th>Discretionary Reductions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1948-49</td>
<td>125.4</td>
<td>119.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1949-50</td>
<td>132.4</td>
<td>128.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1950-51</td>
<td>146.2</td>
<td>140.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1951-52</td>
<td>199.6</td>
<td>200.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1952-53</td>
<td>226.2</td>
<td>208.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1953-54</td>
<td>250.9</td>
<td>241.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1954-55</td>
<td>286.3</td>
<td>289.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1955-56</td>
<td>336.6</td>
<td>318.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1956-57</td>
<td>434.8</td>
<td>424.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1957-58</td>
<td>465.2</td>
<td>462.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1958-59</td>
<td>474.4</td>
<td>488.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1959-60</td>
<td>504.8</td>
<td>483.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1960-61</td>
<td>514.8</td>
<td>527.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1961-62</td>
<td>531.2</td>
<td>530.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1962-63</td>
<td>548.8</td>
<td>552.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1963-64</td>
<td>582.0</td>
<td>575.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Source:** Budget Speeches, 1948-49 to 1963-64.

**Notes:**
1. Allowing for discretionary changes.
2. Before discretionary changes.
3. Reduction of excise on radio valves.
4. Rate reductions.
5. Rate reduction on brandy.
6. Based on the estimated revenue effect of the change for a year, this is a rough approximation of the effect in 3 months. The estimates however, appears too large and a more reasonable 3 month effect is $20m.
7. Excise duty imposed on television tubes.
8. Increased rate of duty on locally produced petroleum.
Conclusion

One of the aims of the government's deflationary policies in 1951-52 was a reduction in personal consumption which would free resources for the production of more essential goods. The excise increases did not lead to a reduction in consumption of taxable goods and the policy therefore appears to have been ineffective. It is highly probable, however, that the reduction in real income led to a reduction in other consumer expenditures such as durable goods. If so, the higher excise tax achieved its purpose.

The consumption of excise-taxable goods in 1956-57 increased only 0.2 per cent. It might be argued that consumers expected the higher rates to be only temporary and consumption was being postponed. It is more likely, however, that the decline in the rate of such consumption was part of the overall decline in personal consumption in 1956-57.

(e) PAYROLL TAX

The payroll tax is payable by all employers who pay wages in excess of a specified monthly amount. There were several post-war revisions in the exemption level. The tax is paid monthly at a rate of $2.5 per cent on the wage bill above the specified minimum.

In the Thirty-Sixth Report of The Commissioner of Taxation, there was a brief discussion on the incidence and economic impact of the payroll tax. This was apparently in answer to criticism that the payroll tax represented more than $2.5 per cent of the final selling price of goods, and withdrawal of the tax would help to reduce prices. The Report sets out an example
PAYROLL TAX REVENUE AS A PERCENTAGE OF WAGES PAID BY PAYROLL TAXPAYERS BEFORE AND AFTER DISCRETIONARY CHANGES IN THE PAYROLL TAX 1948-49 TO 1963-64
<table>
<thead>
<tr>
<th>Year</th>
<th>Actual Revenue</th>
<th>Estimated Revenue (1)</th>
<th>Estimated Revenue (2)</th>
<th>Discretionary Increase</th>
<th>Discretionary Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1948-49</td>
<td>39.6</td>
<td>36.0</td>
<td>36.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1949-50</td>
<td>45.4</td>
<td>44.0</td>
<td>44.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1950-51</td>
<td>57.4</td>
<td>52.0</td>
<td>52.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1951-52</td>
<td>74.3</td>
<td>80.0</td>
<td>80.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1952-53</td>
<td>80.3</td>
<td>80.0</td>
<td>80.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1953-54</td>
<td>80.8</td>
<td>76.8</td>
<td>84.6</td>
<td>7.8</td>
<td></td>
</tr>
<tr>
<td>1954-55</td>
<td>82.9</td>
<td>82.5</td>
<td>85.5</td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td>1955-56</td>
<td>91.0</td>
<td>93.0</td>
<td>93.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1956-57</td>
<td>97.4</td>
<td>96.5</td>
<td>96.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1957-58</td>
<td>97.0</td>
<td>101.0</td>
<td>105.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1958-59</td>
<td>99.2</td>
<td>101.0</td>
<td>101.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1959-60</td>
<td>110.3</td>
<td>106.4</td>
<td>106.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1960-61</td>
<td>122.5</td>
<td>120.0</td>
<td>120.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1961-62</td>
<td>121.9</td>
<td>123.0</td>
<td>126.5</td>
<td>3.5</td>
<td></td>
</tr>
<tr>
<td>1962-63</td>
<td>126.5</td>
<td>128.0</td>
<td>128.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1963-64</td>
<td>136.4</td>
<td>137.0</td>
<td>137.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Budget Speeches and Reports of The Commissioner of Taxation, 1948-49 to 1963-64.

Notes: (1) After allowing for discretionary changes.
(2) Before discretionary changes.
which indicates that the payroll tax, as a percentage of final selling price, is equal to $2.5\%$ per cent times the ratio of labour costs to total costs. Whether or not removal of the tax would constitute a price reduction would depend on the extent to which the tax is shifted.

The first change in the exemption level took effect in 1953-54 when it was raised from $2,080 per year to $8,320 per year. This exempted over one-half of the 90,000 taxpayers. In 1954-55 the exemption was raised to $12,480 per year. The last change, in 1957-58, raised the exemption to $20,800. The number of taxpayers by 1963-64 was 37,000.

The only other change was the granting of a tax rebate commencing in 1961 based upon the increased value of export sales by payroll taxpayers. The cost of this was estimated at $3.5m.

Conclusion

The payroll tax has not been an important stabilisation measure. Diagram VII-D indicates the reduction in the ratio of tax to wages when exemptions were made. The concessions were small and no doubt based on demands from small, high labour cost firms. They do not appear to have constituted an incentive for exempted firms to increase their supply of labour.

(f) SUMMARY

The following table records the impact of discretionary tax changes as indicated by the estimated effect of the change on Commonwealth revenue. The performance of the change in total tax revenue to G.N.E.

is considered stabilising in a recession and a rise

considered stabilising in a period of inflation.¹

**TABLE VII-F**

**STABILISING IMPACT OF DISCRETIONARY TAX CHANGES**

<table>
<thead>
<tr>
<th>Year</th>
<th>Income Tax</th>
<th>Consumption Tax</th>
<th>Payroll Tax</th>
<th>All Taxes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Personal</td>
<td>Company</td>
<td>Sales</td>
<td>Excise</td>
</tr>
<tr>
<td>1949-50</td>
<td>D</td>
<td>nc</td>
<td>D</td>
<td>nc</td>
</tr>
<tr>
<td>1950-51</td>
<td>S</td>
<td>nc</td>
<td>S</td>
<td>nc</td>
</tr>
<tr>
<td>1951-52</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>1952-53</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>nc</td>
</tr>
<tr>
<td>1955-56</td>
<td>nc</td>
<td>nc</td>
<td>S</td>
<td>nc</td>
</tr>
<tr>
<td>1956-57</td>
<td>nc</td>
<td>S</td>
<td>nc</td>
<td>nc</td>
</tr>
<tr>
<td>1957-58</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>nc</td>
</tr>
<tr>
<td>1959-60</td>
<td>D</td>
<td>nc</td>
<td>nc</td>
<td>nc</td>
</tr>
<tr>
<td>1960-61</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>nc</td>
</tr>
<tr>
<td>1961-62</td>
<td>S</td>
<td>nc</td>
<td>S</td>
<td>nc</td>
</tr>
</tbody>
</table>

S = stabilising; D = destabilising; nc = no change.

¹ If the responding coefficients for various taxes are considered, a reduction in total revenue, (owing to a discretionary change in taxes) is not necessarily demand-increasing. For example, a discretionary increase in personal income tax of $20m. and a discretionary reduction in company income tax of $30m. results in an overall reduction in revenue. If, however, the responding coefficients were 0.8 and 0.4, the net result would be demand-reducing. This possibility, however, did not occur during the 1948-49 to 1963-64 period.
The aim of this chapter is to examine the automatic system of built-in changes in budgetary composition during periods of post-war recession and inflation. The major interest is in the tax system which responds significantly to fluctuations in the levels of C.B. Wage relatives will receive a greater return to capital than those with wage earnings.

This service through the built-in changes produces a peak in post-war income and tax revenues. The annual built-in changes is as described in Chapter VII. is the automatic system of built-in tax changes.

The next problem is the introduction of the stabilising effects on the automatic system of built-in changes. During the Great Depression and the immediate post-war period, and inflation, the automatic system of built-in tax changes has been reduced. In order to examine the impact of built-in changes to the after tax changes on national income the automatic system of built-in tax changes has been increased.

Personal income tax rates have been reduced in order to examine the built-in changes to the after tax changes. The only study on automatic system is D.J. Robinson, "Automatic Changes in the Australian Economy 1974-1975", M.D., Dept. Stat., 1971. This study, however, does not deal with this section which includes the impact of discretionary tax changes. For a further analysis of built-in flexibility see D.J. North, "Automatic Flexibility of Taxation and Automatic Stabilization", A.F.E.P., Aug. 1964.
CHAPTER VIII

AUTOMATIC CHANGES IN BUDGET COMPONENTS AND ECONOMIC STABILISATION

The aim of this chapter is to examine the automatic or built-in changes in budget components during periods of post-war recession and inflation. The major concern is the tax system which responds significantly to fluctuations in the level of G.N.P. Some attention will also be given to automatic changes in certain Commonwealth expenditures.

(a) BUILT-IN TAX CHANGES

This section examines the built-in changes in particular taxes and total tax revenue. The annual built-in elasticity, described in Chapter III, is calculated for five major taxes and total tax liability. The value of these elasticities in recession and recovery years gives some indication of the stabilising effect on demand of built-in tax changes. During periods of inflation, attention is directed towards the real increase or decrease in tax liability. Finally, in order to estimate the impact of the built-in change in total tax liability on national income, the coefficient of built-in tax flexibility, described in Chapter III, is calculated.

---

1 Personal and company income tax, sales tax, excise tax and payroll tax.
2 The only static analysis for Australia is Z.M. Zubinski's 'The Built-In Stability of the Australian System of Taxation 1943-1959', E.R., Sept., 1961. This study, however, uses actual tax revenue which includes the impact of discretionary tax changes. For a dynamic analysis of built-in flexibility see D.J. Smyth, 'Built-In Flexibility of Taxation and Automatic Stabilization', J.P.E., Aug. 1966.
(i) Personal Income Tax

The response of personal income tax to a change in G.N.P., given no change in tax legislation, is the built-in elasticity of the tax which is denoted here by $E^P$. The value of $E^P$ depends upon the rate structure of the tax, the schedule of exemptions and deductions, the change in personal income and the change in G.N.P. The elasticity is expressed by

$$E^P = \frac{\Delta T/P}{\Delta G.N.P./G.N.P.}$$

where $\Delta T/P$ is the change in personal income tax liability, given no change in tax legislation, and $G.N.P.$ and $G.N.P.$ are tax liability and G.N.P. in the initial period.

The elasticity measure $E^P$ can be divided into (a) the liability elasticity $E^P_1$ and (b) the base elasticity $E^P_b$. The former is expressed by

$$E^P_1 = \frac{\Delta T/P}{\Delta B/B}$$

where $\Delta B$ is the built-in change in taxable personal income and $B$ is taxable personal income in the initial period. Tax base elasticity is expressed by

$$E^P_b = \frac{\Delta B/B}{\Delta G.N.P./G.N.P.}$$

The product of these two elasticities is $E^P$.

---

1 Tax liability can refer to tax payment or accrual. The difference between accrual and payment is explained by the following example. Consider the amount of taxable income in years $t$ and $t + 1$ to be $\$100m.$ and $\$150m.$ respectively and a tax rate of 10 per cent in each year. If the tax liability does not have to be paid until the following year, tax accrual in year $t + 1$ is $\$15m.$ and tax payment is $\$10m.$

2 This is also a measure of the progressiveness of the rate structure. See Musgrave and Tun Thin, 'Income Tax Progression, 1929-48', J.P.E., December, 1948.
Liability Elasticity

The response of tax liability to changes in the tax base (taxable income) depends primarily upon the tax rate structure and the distribution of taxable income. A value of $E^p_1 > 1$ indicates that tax liability has increased or decreased at a greater rate than taxable income. When $0 < E^p_1 < 1$, liability has increased or decreased at a rate below that of taxable income. Finally, $E^p_1 < 0$ indicates that an increase or decrease in tax base has been accompanied by an opposite change in tax liability.¹

The Australian personal income tax is progressive, incorporating twenty-eight separate brackets of taxable income subject to average tax rates ranging from 0.43 per cent to $66\frac{2}{3}$ per cent. Because of the multiplicity of rate brackets over a relatively small range of income (0-32,000), small changes in the distribution of taxable income tend to result in values of $E^p_1$ different from unity.² Over the post-war period, the secular rise in incomes and shift to higher taxable income brackets has resulted in taxes increasing proportionately faster than taxable income.

In order to estimate the value of $E^p_1$, the impact of any discretionary change in tax legislation had to be removed. Adjustments to personal income tax liability were made simply by adding to or subtracting from the actual change in liability, the Treasury's estimate of the value of $E^p_1$.

¹ This could occur if there was a small increase in taxable income resulting from a decline in taxable income in the high tax rate brackets plus a small rise in taxable income in a low rate bracket.

² $E^p_1$ could be unity if a greater concentration of taxable income occurred in lower tax brackets as total taxable income increased.
the effect of discretionary tax changes on Commonwealth revenue. Adjustments to the tax base are more difficult since no estimate is given of the impact on taxable income of increased deductions or exemptions.

Some changes in deductions and exemptions were made in most years. Because of this, taxable income was estimated by calculating the per capita level of exemptions and deductions in the year before the change and multiplying this by the population in the year of change. Subtracting this from personal income, an estimate of taxable income without the effect of discretionary changes is obtained. This, together with the estimated built-in change in tax accrual and tax payment, is the necessary information required to estimate the value of $E_1^P$ in the years 1949-50 to 1963-64. These values are recorded in Table VIII-A.

**Table VIII-A**

<table>
<thead>
<tr>
<th>Year</th>
<th>Accrual</th>
<th>Payment</th>
<th>Year</th>
<th>Accrual</th>
<th>Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1948-49</td>
<td>1.527</td>
<td>0.933</td>
<td>1956-57</td>
<td>1.324</td>
<td>0.444</td>
</tr>
<tr>
<td>1949-50</td>
<td>2.008</td>
<td>1.683</td>
<td>1957-58</td>
<td>3.550</td>
<td>-4.800</td>
</tr>
<tr>
<td>1950-51</td>
<td>0.583</td>
<td>1.199</td>
<td>1958-59</td>
<td>0.742</td>
<td>-1.120</td>
</tr>
<tr>
<td>1951-52</td>
<td>0.560</td>
<td>0.252</td>
<td>1959-60</td>
<td>1.466</td>
<td>1.484</td>
</tr>
<tr>
<td>1952-53</td>
<td>0.075</td>
<td>1.665</td>
<td>1960-61</td>
<td>0.703</td>
<td>2.200</td>
</tr>
<tr>
<td>1953-54</td>
<td>0.389</td>
<td>-0.261</td>
<td>1961-62</td>
<td>1.310</td>
<td>0.092</td>
</tr>
<tr>
<td>1954-55</td>
<td>1.030</td>
<td>0.786</td>
<td>1962-63</td>
<td>1.647</td>
<td>1.820</td>
</tr>
<tr>
<td>1955-56</td>
<td></td>
<td></td>
<td>1963-64</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The difference between the accrual and payment elasticities is explained by the lag in farm income tax

---

1 In two instances, 1951-52 and 1961-62, some adjustment was required in view of (a) the error between predicted and actual tax revenue, and (b) the lack of any official estimate of the revenue change respectively. See Table VII-A and Section (a) of Chapter VII.

2 Total personal exemptions and deductions were obtained from the various Report(s) of The Commissioner of Taxation while population figures were taken from the C.B.C.S. Monthly Review of Business Statistics.
payments. On the accrual basis, the low elasticity values in 1951-2 and 1954-5, and the negative value in 1953-54 reflect declines in taxable farm income and the tax liability thereon. In none of these years, however, did total personal taxable income decline. There was a decline in both total taxable income and income tax accruals in 1957-58. The proportionately greater decline in accruals resulted in the high positive value of 3.55.

Values for $E_1^P$ on the payment basis, reflect the lag between tax accrual and payment. For example, the negative value in 1954-55 reflects the automatic decline in tax revenue owing to a decline in farm income tax which was based on the low farm taxable income in 1953-54. Similarly, the high negative value in 1957-58 is the result of the decline in total taxable income (induced by the decline in farm taxable income), accompanied by an automatic rise in revenue based on the high income of the previous year. The impact which the lag in payments exerts is most dramatically illustrated in the year 1957-58. The change in total personal income (less estate and gift duties) was a decline of $54m. Tax payments (before discretionary tax changes) increased by $79m, resulting in a decline in personal disposable income of $133m. If, however, tax payments in 1957-58 had been based on taxable income of 1957-58, payments would have fallen by $57m, producing an increase in personal disposable income of $3m.

1 Although there are no Taxation Office figures on taxable farm income, the magnitude of the declines in farm income indicates this result.
2 Australian National Accounts 1948-49 to 1964-65, Table 32.
3 This assumes that the pattern of recession and recovery would not have changed if tax accruals and payments were concurrent.
Base Elasticity

The base elasticity of the personal income tax was defined as

\[
\frac{\Delta B / B_{P_0}}{\Delta G.N.P. / G.N.P._0}
\]

This can be divided into two separate components

\[
\frac{\Delta B / B_{P_0}}{\Delta Y^P / Y^P_0} \quad \text{and} \quad \frac{\Delta Y^P / Y^P_0}{\Delta G.N.P. / G.N.P._0}
\]

where \( Y^P \) is personal income. The components are denoted by \( E_{b_1}^P \) and \( E_{b_2}^P \) respectively.

Taxable income is basically total personal income less exemptions and deductions. If total income and the distribution thereof remain constant in the presence of a fixed structure of exemptions and deductions, taxable income remains unchanged. It is possible that taxable income may decline even if there is a rise in total personal income. This could occur where population is growing at a relatively constant rate.¹ Diagram VIII-A explains how this could occur. In year 3, the amount of

¹ Cohen, L., op. cit.
exemptions and deductions has increased with the
increase in population. Total personal income has
increased only slightly, and, as a result, taxable
income declines. Because of this, there will tend to be
a proportionately greater decline in taxable income
during a recession than the increase accompanying an
expansion.\(^1\) This would be reflected by a larger value
of \(E_{b1}^P\) during a recession.\(^2\)

The values of \(E_{b1}^P\) are recorded in Table VII-B.

\[\text{TABLE VIII-B}\]

**BASE ELASTICITY FOR PERSONAL INCOME TAX \((E_{b1}^P)\)**

<table>
<thead>
<tr>
<th>Year</th>
<th>(E_{b1}^P)</th>
<th>(E_{b2}^P)</th>
<th>(E_{b1}^P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1949-50</td>
<td>0.973</td>
<td>1.040</td>
<td>1.011</td>
</tr>
<tr>
<td>1950-51</td>
<td>0.524</td>
<td>1.129</td>
<td>0.592</td>
</tr>
<tr>
<td>1951-52</td>
<td>3.431</td>
<td>0.603</td>
<td>2.010</td>
</tr>
<tr>
<td>1952-53</td>
<td>0.934</td>
<td>0.791</td>
<td>0.741</td>
</tr>
<tr>
<td>1953-54</td>
<td>1.795</td>
<td>0.424</td>
<td>0.761</td>
</tr>
<tr>
<td>1954-55</td>
<td>1.296</td>
<td>1.076</td>
<td>1.394</td>
</tr>
<tr>
<td>1955-56</td>
<td>1.023</td>
<td>1.073</td>
<td>1.098</td>
</tr>
<tr>
<td>1956-57</td>
<td>1.391</td>
<td>0.775</td>
<td>1.090</td>
</tr>
<tr>
<td>1957-58</td>
<td>2.857</td>
<td>-0.333</td>
<td>-0.957</td>
</tr>
<tr>
<td>1958-59</td>
<td>1.237</td>
<td>1.070</td>
<td>1.368</td>
</tr>
<tr>
<td>1959-60</td>
<td>1.281</td>
<td>1.079</td>
<td>1.400</td>
</tr>
<tr>
<td>1960-61</td>
<td>1.221</td>
<td>0.839</td>
<td>1.067</td>
</tr>
<tr>
<td>1961-62</td>
<td>0.833</td>
<td>1.250</td>
<td>1.368</td>
</tr>
<tr>
<td>1962-63</td>
<td>1.209</td>
<td>0.882</td>
<td>1.141</td>
</tr>
<tr>
<td>1963-64</td>
<td>1.010</td>
<td>0.952</td>
<td>1.099</td>
</tr>
</tbody>
</table>

The high value in 1951-52 reflects the small increase in
personal income and large increase in taxable income.

Although non-farm income increased 18.8 per cent, farm
income fell 40.0 per cent resulting in a moderate rise in
the total of only 4.4 per cent.\(^3\) In spite of this,

---

1 A decline in total personal income from $100m. to $90m.
with an increase in exemptions and deductions from $25m.
to $27m., results in a decline in taxable income equal to
16 per cent. If total personal income increased from
$100m. to $110m., the rise in taxable income is
approximately 11 per cent.

2 This assumes that the recession is marked by an
absolute decline in total personal income.

3 Australian National Accounts 1948-49 to 1963-64,
Table 33.
taxable income, after adjusting for discretionary changes, increased by 15.1 per cent. This was the result of a rise in farm income of 71.1 per cent the year before which was averaged with 1951-2 and other years. The high value of $E_{P}^b$ in 1957-8 was the result of a 0.7 per cent decline in personal income and a 2.0 per cent decline in taxable income. In 1961-2, total personal income increased by 3.0 per cent while taxable income increased by only 2.5 per cent resulting in a value of $E_{P}^b$ less than one.

The value of $E_{P}^b$, the response of personal income to changes in G.N.P., depends upon changes in the ratio of personal income to G.N.P. When G.N.P. increases, an elasticity greater than unity indicates an increase in the ratio, while an elasticity less than unity indicates a decline in the ratio. Only on one occasion, 1957-58, was there a negative value of $E_{P}^b$, resulting from the decline in personal income. The product of $E_{P}^b$ and $E_{P}^p_2$, which gives the base elasticity $E_{P}^b$, is recorded in Table VIII-B.

In the recession year 1952-53, the value of $E_{P}^b$ indicates that the percentage increase in taxable income was smaller than the percentage rise in gross national product. The negative result in 1957-58 was caused by a fall in taxable income while G.N.P. increased. During the inflation years of 1949-52, 1955-57 and 1959-61, taxable income increased faster than G.N.P. with the exception of 1950-51.

If G.N.P. declines, a value of $E_{P}^b > 1$ indicates a decline in the share of personal income to G.N.P.
Overall Personal Income Tax Elasticity

The built-in elasticity of the personal income tax, \( E^P \), is, as mentioned above, the product of the liability elasticity (\( E^P_b \)) and the tax base elasticity (\( E^P_t \)). For 1949-50 to 1963-64 the values of \( E^P \) are recorded below.

TABLE VIII-C

<table>
<thead>
<tr>
<th>Year</th>
<th>Accrual</th>
<th>Payment</th>
<th>Year</th>
<th>Accrual</th>
<th>Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1949-50</td>
<td>1.544</td>
<td>0.943</td>
<td>1957-58</td>
<td>-3.398</td>
<td>4.594</td>
</tr>
<tr>
<td>1950-51</td>
<td>1.189</td>
<td>0.996</td>
<td>1958-59</td>
<td>1.015</td>
<td>-1.532</td>
</tr>
<tr>
<td>1951-52</td>
<td>1.205</td>
<td>2.479</td>
<td>1959-60</td>
<td>2.052</td>
<td>0.978</td>
</tr>
<tr>
<td>1952-53</td>
<td>0.415</td>
<td>0.187</td>
<td>1960-61</td>
<td>1.238</td>
<td>1.639</td>
</tr>
<tr>
<td></td>
<td>(4.528)</td>
<td>(1.527)</td>
<td>1961-62</td>
<td>0.962</td>
<td>2.292</td>
</tr>
<tr>
<td>1953-54</td>
<td>-0.057</td>
<td>1.267</td>
<td>1962-63</td>
<td>1.495</td>
<td>0.105</td>
</tr>
<tr>
<td>1954-55</td>
<td>0.542</td>
<td>-0.368</td>
<td>1963-64</td>
<td>1.920</td>
<td>2.000</td>
</tr>
<tr>
<td>1955-56</td>
<td>1.131</td>
<td>0.863</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1956-57</td>
<td>1.443</td>
<td>0.484</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Looking at the first recession period, it can be seen that personal income tax, in terms of the real change in accruals or the real change in payments, 2 declined at a greater rate than G.N.P. In 1957-58, there was a decline in tax accruals accompanied by an increase in G.N.P. 3

Tax payments, however, increased substantially, resulting in a high positive elasticity. Tax accruals in 1961-62 increased but at a slower rate than G.N.P.

Payments increased at a faster rate. During the inflation years, tax accruals increased faster than G.N.P. on six occasions while on the payments basis, this occurred only three times.

1 The elasticities are based on nominal values of the change in tax liability and G.N.P. In one instance, 1952-53, it will be convenient to refer to the elasticity with respect to real change in tax liability and G.N.P. The 'real' elasticities for this year are therefore included above in brackets.

2 This is indicated by the elasticity values 4.528 and 1.527 in Table VII-C. Although G.N.P. increased 13 per cent in money terms, there was a decline in real terms of 0.7 per cent. The consumer price index increased by 9.4 per cent despite the recession.

3 Price increases in 1957-8 and 1961-2 were small.
The elasticities in two of the recovery years highlight the lag between farm income tax accruals and payments. In 1958-59, the negative value of $E^P$ reflects the payment of farm income tax based on 1957-58 farm income. The low value of $E^P$ in 1962-63 can partly be explained by the same lag.

What do these elasticity values indicate in the way of the stabilising performance of automatic changes in personal income tax liability? Using the payment basis elasticity, the automatic change was stabilising in the 1952-53 recession and destabilising in the subsequent recessions. In the 1953-54 recovery year, the rise in tax payments was proportionately greater than the rise in G.N.P. Since full employment was achieved by the end of the year, it is not possible to evaluate the performance of the automatic change in personal income tax by itself. All that can be said, as was pointed out in Chapter V, is that overall fiscal performance was very good. In 1958-59, tax payments declined which was helpful at a time when some expansion was required. In the 1962-63 recovery year, payments increased which was not desirable given the level of unemployment at that time.

It has been suggested that for an automatic tax change to be stabilising during inflation, the elasticity must be greater than unity. This applies to the 'pure' inflation case where all increases are money increases. If, as would seem reasonable for Australia

\[1\]

Tax payment is considered to be more relevant since personal disposable income, which is an important determinant of spending, is usually based on personal income less savings and tax payments.

\[2\]

some of the increase in G.N.P. is a reflection of a real increase in output, this particularly strict criterion is not necessary. All that is required for good stabilising performance is an increase in real taxes. In order to completely offset the inflationary pressure which is due to excess demand, the rise in real taxes would have to be greater than the excess demand (assuming a marginal propensity to consume less than unity). 

Using an increase in real taxes as an indication of stabilising performance during inflation, it is found that the built-in change in the personal income tax was stabilising in five of the seven inflation years. The destabilising years were 1951-52 and 1956-57. In the former, real taxes declined $35m., while, in the latter, the decline in real taxes was $11m.

In summary, the performance of the built-in flexibility of personal income tax payments was perverse in two recession years, one recovery year and two inflation years. The lag between accruals and payments, for farm income tax, prevented tax payments from reflecting the current economic situation. Although the lag did, in the case of recessions, reduce the 'fiscal drag' that would otherwise occur in the recovery year, it was detrimental in the initial phases of the recession when it was most required. After a recession has been identified, discretionary action can be implemented to speed the recovery. It is early in the recession, when recognition of the recession is not clear, that effective automatic stabilisation is needed.

---

(ii) Company Income Tax

The response of company income tax liability to changes in G.N.P. is the built-in elasticity of the tax, $E^C$ which can be expressed as

$$\frac{\Delta T^C / T^C_0}{\Delta G.N.P./G.N.P._0}$$

where $\Delta T^C$ is the change in company income tax (given no change in tax legislation), and $T^C_0$ is the initial level of company income tax. This elasticity can be subdivided into (a) the response of the tax to changes in the tax base (net taxable company income), and (b) the response of the tax base to changes in G.N.P. The first of these components is the liability elasticity

$$E^C_1 = \frac{\Delta T^C / T^C_0}{\Delta B^C / B^C_0}$$

where $\Delta B^C$ is the automatic change in the tax base and $B^C_0$ is the initial level of the tax base. The second component is the base elasticity

$$E^C_b = \frac{\Delta B^C / B^C_0}{\Delta G.N.P./G.N.P._0}$$

The product of $E^C_1$ and $E^C_b$ gives the overall elasticity of the company income tax.

Liability Elasticity

The liability elasticity $E^C_1$, depends upon the tax rate structure and distribution of taxable income. In Australia, the rate structure of the company income tax is mildly progressive, and is divided into two basic categories; one for private companies and another for

---

1 This can be calculated on the basis of tax accrual or payment since the payment of company income tax liability is lagged one year.
non-private companies. As a result of this rate structure, it is possible to have a decline in net income and increase in tax liability brought about by a decline in private company income and a rise in non-private company income. This could happen because the higher rates of tax apply to the non-private taxable company income which, in this example, has increased.

The calculation of $E_1^C$ requires some adjustment to the original data to compensate for discretionary changes in tax legislation. Tax liability can be adjusted in the same manner as personal income tax liability; by adding to or subtracting from the change in tax liability, the Treasury’s estimate of the effect of discretionary tax changes on tax liability. Adjustments to the tax base (net taxable company income) are more difficult since the impact of changes in depreciation allowances or other deductions were estimated only in terms of a gain or loss to Commonwealth revenue.

There were four major discretionary tax changes affecting the tax base. In 1949-50, the special depreciation allowance on new machinery was increased from 20 to 40 per cent. This was removed in 1951-52. Depreciation rates were doubled in 1957-58, and finally, in 1961-62, an investment allowance of 20 per cent was introduced. For all of these, there was no estimate of...

---

1 In general, there is a primary rate on the first $10,000 of taxable income and another slightly higher rate on the balance over $10,000. The rates for private companies have, on average, been below those applied to non-private companies.

2 Because of the error between actual and estimated company income tax in 1950-52, another adjustment was required. See Section (b) of Chapter VII.
how the changes would affect taxable income.\(^1\) To provide a rough estimate of the impact, the following adjustments were made. In 1949-50, it was assumed that 20 per cent of the increase in depreciation provisions was a consequence of the additional 20 per cent depreciation allowance. The increase in depreciation was therefore reduced by 20 per cent and taxable income increased by the amount of the depreciation reduction. A similar adjustment was made in 1951-52. For 1957-58, it was assumed that one-half of the increase in depreciation provisions was the result of the 50 per cent increase in depreciation rates. The level of depreciation and taxable income in 1957-58 were adjusted accordingly. In 1961-62 a similar adjustment to that of 1949-50 was made.

Having made these adjustments, it was then possible to estimate the value of \(E_{1}^{C}\) in the years 1949-50 to 1963-64.

**TABLE VIII-D**

<table>
<thead>
<tr>
<th>Year</th>
<th>Accrual</th>
<th>Payment</th>
<th>Year</th>
<th>Accrual</th>
<th>Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1949-50</td>
<td>0.841</td>
<td>9.746</td>
<td>1957-58</td>
<td>1.203</td>
<td>6.132</td>
</tr>
<tr>
<td>1950-51</td>
<td>0.843</td>
<td>0.163</td>
<td>1958-59</td>
<td>0.511</td>
<td>1.560</td>
</tr>
<tr>
<td>1951-52</td>
<td>-1.187</td>
<td>-12.739</td>
<td>1959-60</td>
<td>1.667</td>
<td>0.281</td>
</tr>
<tr>
<td>1952-53</td>
<td>7.901</td>
<td>23.012</td>
<td>1960-61</td>
<td>0.789</td>
<td>-2.132</td>
</tr>
<tr>
<td>1953-54</td>
<td>1.239</td>
<td>-0.223</td>
<td>1961-62</td>
<td>2.587</td>
<td>0.107</td>
</tr>
<tr>
<td>1954-55</td>
<td>1.064</td>
<td>3.043</td>
<td>1962-63</td>
<td>0.869</td>
<td>-0.379</td>
</tr>
<tr>
<td>1955-56</td>
<td>1.617</td>
<td>1.740</td>
<td>1963-64</td>
<td>1.248</td>
<td>1.039</td>
</tr>
<tr>
<td>1956-57</td>
<td>0.974</td>
<td>0.638</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

On the accrual basis, the negative value in 1951-52 was the result of a $20m. decline in accruals and $7m. increase in net company income. In 1961-62, the relatively high positive elasticity was the combination

\(^1\) Since the impact on revenue was estimated, there must have been some estimation of taxable income before and after the change. Only the revenue estimates are published.
of a $3m. increase in both accruals and net taxable company income.

The wide range of elasticity values on the payments basis (-12.7 to +23.0) reflects the lag between payment and accrual. The -12.7 value in 1951-52 was the result of the decline in net income in that year along with increased payments representing 1950-51 net income. In 1952-53 there was a small rise in net income and a more substantial increase in payments. The values for $E_1$ on a payments basis are not very reliable for these two years since there were changes in the method of paying company income tax.\(^1\) The negative values in 1960-61 and 1962-63 reflected increases and decreases in payments combined with net income decreases and increases respectively.

Base Elasticity

Tax base elasticity ($E_b$) was defined as the proportionate change in net taxable company income with respect to a change in G.N.P. The volatility of the tax base depends on the relative changes in gross income, depreciation and deductions.\(^2\) Like the personal income tax, a rise in gross income may be accompanied by a decline in net income if depreciation and/or other deductions increase sufficiently. Early in a recession, it is likely that net taxable company income will decline more than other income shares owing to the allocation of fixed costs (such as administration expenses) over a reduced output. In addition, labour may not be reduced

\(^1\) In 1951-52, companies were required to make a pre-payment on their 1951-52 taxable income. Some companies were still paying this in 1952-53.

\(^2\) Gross income simply refers to company income before depreciation, exemptions, etc.
in proportion to the decline in output thereby increasing per unit output costs. Such apparently uneconomical hoarding of labour may have some advantage in the recovery after a mild recession when firms can quickly utilise excess capacity and surplus labour to meet the increase in demand.

The volatility of net company income during inflation will depend on several factors. Rising dollar value of sales may lead to a substantial increase in gross company income which is not offset by depreciation allowances since the latter are partly based on historic costs of previous capital investments. On the other hand, if costs, especially wages, increase rapidly, this would offset the high dollar value of sales. The change in company investment during inflation will also affect taxable income by way of depreciation and investment allowances.

The volatility of the company income tax base is illustrated in Diagram VIII-B. In each of the three recession and recovery periods, 1952-4, 1957-9 and 1961-3, the values of G.N.P., company income before deductions (gross income) and net company taxable income are graphed as percentages of the prerecession peaks. In 1952-53 for example, company income was only 75 per cent of the prerecession peak whereas G.N.P. was slightly above the 1950-1 peak. The 1957-58 recession was not nearly as severe for the company sector, but the volatility of the tax base is clearly indicated. In 1961-62, the recession was preceded by a decline in the company sector in 1960-61. The volatility of the tax base is also illustrated in the recovery years when the rate of increase in tax base exceeded the rate of increase in G.N.P.
Diagram VIII-B

G.N.P., company income and company income before deductions as percentage of previous peak
Given the built-in change in company tax base as calculated above, the values of $E^C_b$ are as follows. The negative values of $E^C_b$ in the years 1951-52 and 1960-61 reflect declines in net company income and increases in G.N.P. The high elasticity values in 1953-54 and 1962-63, relative to the year before, indicate the increased share of the change in G.N.P. represented by company income. For example, in 1952-53 the change in company income was only 7.4 per cent of the change in G.N.P. In the next year, it was 26 per cent of the change.

**TABLE VIII-E**

**TAX BASE ELASTICITY OF THE COMPANY INCOME TAX**

<table>
<thead>
<tr>
<th>Year</th>
<th>Value of $E^C_b$</th>
<th>Year</th>
<th>Value of $E^C_b$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1949-50</td>
<td>1.103</td>
<td>1957-58</td>
<td>0.505</td>
</tr>
<tr>
<td>1950-51</td>
<td>1.583</td>
<td>1958-59</td>
<td>1.282</td>
</tr>
<tr>
<td>1951-52</td>
<td>-0.315</td>
<td>1959-60</td>
<td>2.000</td>
</tr>
<tr>
<td>1952-53</td>
<td>0.074</td>
<td>1960-61</td>
<td>-0.938</td>
</tr>
<tr>
<td>1953-54</td>
<td>2.774</td>
<td>1961-62</td>
<td>0.117</td>
</tr>
<tr>
<td>1954-55</td>
<td>1.394</td>
<td>1962-63</td>
<td>2.013</td>
</tr>
<tr>
<td>1955-56</td>
<td>0.610</td>
<td>1963-64</td>
<td>1.240</td>
</tr>
<tr>
<td>1956-57</td>
<td>0.900</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Overall Company Income Tax Elasticity

The built-in elasticity of the company income tax is the product of the liability and base elasticities. By multiplying the base elasticity ($E^C_b$) by the accrual or payment value of $E^C$, two overall elasticities are determined. These are recorded in Table VIII-F below.

**TABLE VIII-F**

**BUILT-IN ELASTICITY OF COMPANY INCOME TAX ($E^C$)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Accrual</th>
<th>Payment</th>
<th>Year</th>
<th>Accrual</th>
<th>Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1949-50</td>
<td>0.928</td>
<td>0.823</td>
<td>1956-57</td>
<td>0.878</td>
<td>0.574</td>
</tr>
<tr>
<td>1950-51</td>
<td>1.374</td>
<td>0.258</td>
<td>1957-58</td>
<td>0.608</td>
<td>3.097</td>
</tr>
<tr>
<td>1951-52</td>
<td>0.374</td>
<td>4.014</td>
<td>1958-59</td>
<td>0.655</td>
<td>2.000</td>
</tr>
<tr>
<td>1952-53</td>
<td>-0.585</td>
<td>1.703</td>
<td>1959-60</td>
<td>3.334</td>
<td>0.562</td>
</tr>
<tr>
<td></td>
<td>(19.44)</td>
<td>(-15.82)</td>
<td>1960-61</td>
<td>-0.740</td>
<td>1.846</td>
</tr>
<tr>
<td>1953-54</td>
<td>3.437</td>
<td>-0.619</td>
<td>1961-62</td>
<td>0.304</td>
<td>0.013</td>
</tr>
<tr>
<td>1954-55</td>
<td>1.483</td>
<td>4.242</td>
<td>1962-63</td>
<td>1.749</td>
<td>-0.763</td>
</tr>
<tr>
<td>1955-56</td>
<td>0.986</td>
<td>1.061</td>
<td>1963-64</td>
<td>1.548</td>
<td>1.288</td>
</tr>
</tbody>
</table>
For 1952-53, the elasticity with respect to real changes in that year was calculated for both tax accruals and payments. On the accrual basis this was very high owing to a decline in real accruals of 14 per cent. In the other two recessions, tax accruals increased, but at a rate below the rate of increase in G.N.P. Using the tax payment concept, real payments increased when real G.N.P. declined in 1952-53. In 1957-58, the rate of increase in payments exceeded that of G.N.P. while in 1961-62, there was a very small rise in payments.

An evaluation of the stabilising performance of built-in changes in company income tax depends on the elasticity measure used. On the accrual basis, there was a substantial decline in real taxes relative to the decline in G.N.P. in 1952-53 which was clearly stabilising. In the two subsequent recession years, however, accruals increased. This also occurred in each of the recovery years. On a payment basis, the elasticity values indicate that the automatic change in the company income tax was destabilising in each recession year and stabilising in one recovery year, 1962-63, when there was a decline in payments at a time when expansion was desired.

When the anti-inflationary aspects of automatic changes in personal income tax liability were discussed earlier, it was suggested that the change in tax liability would be restrictive if there was a real increase in taxes. Given this criterion, tax accruals

---

1 The elasticity values in brackets are the result of using deflated values for taxes and G.N.P. in 1952-53. The high values are due to the small (0.7 per cent) decline in real G.N.P.
were destabilising in 1951-52 and 1960-61. Tax payments were destabilising in 1950-51 and 1956-57.

In summary, the built-in changes in company income tax payments were stabilising in none of the recessions, one recovery and five inflation years. On an accrual basis, stabilisation occurred in one recession and five inflation years.

(iii) Sales Tax

The built-in elasticity of the sales tax \( E_s \), is expressed by

\[
\frac{\Delta T_s / T_s}{\Delta G.N.P. / G.N.P.} 
\]

where \( \Delta T_s \) is the built-in change in sales tax revenue and \( T_s \) is the level of sales tax revenue in the initial period. If there are discretionary changes in rates or exemptions, for which there are no revenue estimates, the value of \( E_s \) can be approximated by

\[
\frac{\Sigma (\Delta q_i p_i) / \Sigma (q_i p_i)}{\Delta G.N.P. / G.N.P.} 
\]

where \( q_i \) is the quantity of sales taxable goods, \( p_i \) the price of these goods, and \( t_i \) the effective rate of tax. The subscript \( ' 1 ' \) denotes the price in the period following the base or initial year, denoted by \( ' 0 ' \).

This method of estimation was used in 1951-52 when the revenue estimate of the discretionary change in sales tax revenue was obviously overstated. In all other years, actual revenue was adjusted in the same manner as most of the personal and company income tax changes.

1 A similar adjustment was made in 1955-56 when the tax change was applied to the last three months of 1955-56.
It was possible to estimate the elasticity of tax collections with respect to tax base changes since the net value of the sale of taxable goods is available for the years 1948-49 to 1963-64. This is denoted by $E^s_1$ and calculated by

$$E^s_1 = \frac{\Delta T_s / T_s^o}{\Delta B_s / B_s^o}$$

where $\Delta B_s$ is the change in the sale of taxable goods.

The elasticity of the base with respect to changes in G.N.P. is

$$E^s_b = \frac{\Delta B_s / B_s^o}{\Delta G.N.P. / G.N.P.^o}$$

The values of $E^s_1$ and $E^s_b$ and their product, $E^s$, are recorded below.

**TABLE VIII-G**

<table>
<thead>
<tr>
<th>Year</th>
<th>$E^s_1$</th>
<th>$E^s_b$</th>
<th>$E^s$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1949-50</td>
<td>0.829</td>
<td>1.503</td>
<td>1.246</td>
</tr>
<tr>
<td>1950-51</td>
<td>0.714</td>
<td>0.859</td>
<td>0.613</td>
</tr>
<tr>
<td>1951-52</td>
<td>1.128</td>
<td>2.027</td>
<td>2.286</td>
</tr>
<tr>
<td>1952-53</td>
<td>0.118</td>
<td>-1.015</td>
<td>-0.120</td>
</tr>
<tr>
<td>1953-54</td>
<td>0.983</td>
<td>1.869</td>
<td>1.837</td>
</tr>
<tr>
<td>1954-55</td>
<td>1.287</td>
<td>1.848</td>
<td>2.378</td>
</tr>
<tr>
<td>1955-56</td>
<td>1.000</td>
<td>0.841</td>
<td>0.841</td>
</tr>
<tr>
<td>1956-57</td>
<td>1.000</td>
<td>-0.472</td>
<td>-0.472</td>
</tr>
<tr>
<td>1957-58</td>
<td>1.308</td>
<td>4.333</td>
<td>5.668</td>
</tr>
<tr>
<td>1958-59</td>
<td>0.800</td>
<td>0.704</td>
<td>0.563</td>
</tr>
<tr>
<td>1959-60</td>
<td>1.029</td>
<td>1.562</td>
<td>1.607</td>
</tr>
<tr>
<td>1960-61</td>
<td>1.321</td>
<td>0.346</td>
<td>0.457</td>
</tr>
<tr>
<td>1961-62</td>
<td>6.100</td>
<td>-0.417</td>
<td>-2.544</td>
</tr>
<tr>
<td>1962-63</td>
<td>0.999</td>
<td>1.474</td>
<td>1.473</td>
</tr>
<tr>
<td>1963-64</td>
<td>2.833</td>
<td>0.346</td>
<td>0.980</td>
</tr>
</tbody>
</table>

The reason for the very low value of $E^s_1$ in 1952-53 is not clear. Although taxable sales declined 13.6 per cent, revenue, after adjusting for discretionary tax changes, declined only 1.6 per cent. This may have occurred partly as a result of a large decline in sales.

---

1. See the Report of The Commissioner of Taxation (Annual).
of low rate goods and rise in sales of higher rate goods. Another explanation is that the rate reductions may have been over-estimated owing to the rapid decline in the sale of taxable goods. Even if the estimated revenue effect of the discretionary changes was only half ($5m.), the elasticity would only be 0.309.\textsuperscript{1}

Finally, it is possible that some tax revenue paid in 1952-53 was incurred the year before.

The negative values of $E_b^s$ in 1952-53, 1956-57 and 1961-62 reflect a decline in the sale of taxable goods and increase in G.N.P. Much of the volatility of the sales tax base stems from the taxation of the sale of automobiles. For example, in 1952-53, automobile sales declined 20 per cent when G.N.P. increased 13.4 per cent (in money terms).\textsuperscript{2} The following year, G.N.P. rose 9.2 per cent while the sale of automobiles rose 37 per cent. Sales fell 3.8 per cent in 1961-62 and increased 30 per cent the next year. Corresponding changes in G.N.P. were 2.4 and 7.6 per cent respectively.

The overall elasticity indicates that the automatic change in sales tax was stabilising in the 1952-53\textsuperscript{3} and 1961-62 recession when there were declines in real tax revenue. In 1957-58, tax revenue increased substantially. Revenue automatically increased in all recovery years. As far as the inflation years are

\textsuperscript{1} The Australian National Accounts 1948-49 to 1964-65 record a decline in actual sales tax revenue of 6.8 per cent. The 36th Report of The Commissioner of Taxation (p.79) shows a decline of 6.7 per cent.

\textsuperscript{2} Automobile sales figures are taken from Table 49 of the Australian National Accounts.

\textsuperscript{3} The very high elasticity with respect to real changes in $T_s$ and G.N.P. was the result of a 9.9 per cent decline in revenue and 0.7 per cent decline in G.N.P.
concerned, real tax revenue increased in 1949-51, 1955-56 and 1959-60.

(iv) Excise Tax

The built-in elasticity of the excise tax $E^x$, can be expressed by

$$\frac{\Delta T^x / T^x_0}{\Delta G.N.P. / G.N.P.\_0}$$

where $\Delta T^x$ is the change in excise revenue from one period to the next given no change in tax legislation.

Between 1948 and 1964, there were only two major changes in excise tax legislation, and in both cases, an estimate of the revenue effect was given. Table VIII-H records the annual elasticity values. In the recession of 1952-53 real tax revenue increased. In the subsequent recession years and recovery years as well, revenue increased. During inflation, real taxes increased in three years; 1955-56, 1956-57 and 1959-60.

**TABLE VIII-H**

**BUILT-IN ELASTICITY OF THE EXCISE TAX**

<table>
<thead>
<tr>
<th>Year</th>
<th>Value of $E^x$</th>
<th>Year</th>
<th>Value of $E^x$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1949-50</td>
<td>0.320</td>
<td>1957-58</td>
<td>3.286</td>
</tr>
<tr>
<td>1950-51</td>
<td>0.325</td>
<td>1958-59</td>
<td>0.268</td>
</tr>
<tr>
<td>1951-52</td>
<td>0.932</td>
<td>1959-60</td>
<td>0.670</td>
</tr>
<tr>
<td>1952-53</td>
<td>0.970 (-5.0)</td>
<td>1960-61</td>
<td>0.278</td>
</tr>
<tr>
<td>1953-54</td>
<td>1.250</td>
<td>1961-62</td>
<td>0.794</td>
</tr>
<tr>
<td>1954-55</td>
<td>2.166</td>
<td>1962-63</td>
<td>0.508</td>
</tr>
<tr>
<td>1955-56</td>
<td>1.220</td>
<td>1963-64</td>
<td>0.526</td>
</tr>
<tr>
<td>1956-57</td>
<td>1.079</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Some additional adjustment had to be made in 1955-56. See Section (d) of Chapter VII.
2. The elasticity of excise revenue with respect to base changes could not be calculated since the volume of goods subject to the excise is not available. The real consumption of petrol, from which a substantial portion of excise tax is derived, is included with other expenditure on motor vehicle operation in the National Accounts and the Monthly Review of Business Statistics.
(v) Payroll Tax

The built-in elasticity of the payroll tax $E^e$ is

$$\frac{\Delta T_e / T_e}{\Delta G.N.P. / G.N.P.}$$

where $\Delta T_e$ is the change in payroll tax revenue. There were four changes in the exemptions granted to payroll taxpayers, and in each case an estimate was given of the cost to revenue. By adjusting actual revenue accordingly, the following estimates of $E^e$ were obtained.

TABLE VIII-J

BUILT-IN ELASTICITY OF THE PAYROLL TAX

<table>
<thead>
<tr>
<th>Year</th>
<th>Value of $E^e$</th>
<th>Year</th>
<th>Value of $E^e$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1949-50</td>
<td>0.714</td>
<td>1957-58</td>
<td>1.952</td>
</tr>
<tr>
<td>1950-51</td>
<td>0.819</td>
<td>1958-59</td>
<td>0.296</td>
</tr>
<tr>
<td>1951-52</td>
<td>4.082</td>
<td>1959-60</td>
<td>1.247</td>
</tr>
<tr>
<td>1952-53</td>
<td>0.604 (1.928)</td>
<td>1960-61</td>
<td>1.457</td>
</tr>
<tr>
<td>1953-54</td>
<td>1.228</td>
<td>1961-62</td>
<td>0.833</td>
</tr>
<tr>
<td>1954-55</td>
<td>0.939</td>
<td>1962-63</td>
<td>0.539</td>
</tr>
<tr>
<td>1955-56</td>
<td>1.171</td>
<td>1963-64</td>
<td>0.683</td>
</tr>
<tr>
<td>1956-57</td>
<td>0.742</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The high elasticity in 1951-52 was the result of large increases in wages but a decline in farm income which showed up in the slower rate of growth of G.N.P. The values of $E^e$ reflect the relative rates of growth of taxable wages and G.N.P. from one year to the next. As a stabiliser, the tax is not very effective since it is imposed as a small flat rate, and the exemptions are nominal for large labour-intensive industries. In addition, the payment of this tax is a deductible item in arriving at taxable company income. During a period of rapidly rising wages, higher taxes, when deducted, reduce company tax liability which is destabilising if inflation is present.

The elasticity with respect to real changes in revenue and G.N.P. in 1952-53 (1.928) indicates that there was a decline in real tax revenue. In all other
recession years, and in the recovery years, tax revenue increased. Real tax revenue also increased in each year of inflation. The built-in response of the payroll tax was therefore stabilising in one recession and seven inflation years.

(vi) All Taxes

Built-in Elasticity

The built-in elasticity for all taxes was calculated on a uniform payment basis as well as one which substituted company tax accruals for tax payments. To obtain the annual elasticities, the previously calculated automatic tax changes were aggregated using the above approaches. The elasticities are recorded in Table VIII-K. If the elasticity with respect to payments is considered, there were two negative values, in 1958-59 and 1962-63. These were small, the result of a nominal decline in revenue during recovery years when the rate of increase in G.N.P. was fairly substantial. On the payment/accrual basis, this occurred only in 1958-59 when it was of significant magnitude. The elasticity values in brackets for 1952-53 are the result of deflating taxes and G.N.P. in 1952-53 as was done previously. The 9.571 value of E was the result of a

<table>
<thead>
<tr>
<th>Year</th>
<th>Payments</th>
<th>Payments/</th>
<th>Year</th>
<th>Payments</th>
<th>Payments/</th>
</tr>
</thead>
<tbody>
<tr>
<td>1949-50</td>
<td>0.840</td>
<td>0.863</td>
<td>1957-58</td>
<td>3.952</td>
<td>4.571</td>
</tr>
<tr>
<td>1950-51</td>
<td>0.684</td>
<td>0.957</td>
<td>1958-59</td>
<td>-0.056</td>
<td>-0.110</td>
</tr>
<tr>
<td>1951-52</td>
<td>2.562</td>
<td>1.699</td>
<td>1959-60</td>
<td>1.337</td>
<td>1.753</td>
</tr>
<tr>
<td>1952-53</td>
<td>0.530</td>
<td>0.134</td>
<td>1960-61</td>
<td>1.259</td>
<td>0.630</td>
</tr>
<tr>
<td>1953-54</td>
<td>1.212</td>
<td>1.685</td>
<td>1961-62</td>
<td>1.208</td>
<td>1.250</td>
</tr>
<tr>
<td>1954-55</td>
<td>1.212</td>
<td>0.773</td>
<td>1962-63</td>
<td>-0.066</td>
<td>0.408</td>
</tr>
<tr>
<td>1955-56</td>
<td>1.621</td>
<td>1.598</td>
<td>1963-64</td>
<td>1.212</td>
<td>1.327</td>
</tr>
<tr>
<td>1956-57</td>
<td>0.315</td>
<td>0.652</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The Coefficient of Built-in Tax Flexibility

The coefficient of built-in tax flexibility is a measure of the impact of built-in tax change on the level of national income. The derivation of this coefficient $\beta$, and a discussion on its application is found in Chapter III. The application of this formula is appropriate only if the company tax is fully shifted, and in order to calculate $\beta$, this rather strict assumption was necessary. The coefficient can be calculated using a payments elasticity or a payment/accrual elasticity.

**TABLE VIII-L**

COEFFICIENT OF BUILT-IN TAX FLEXIBILITY

<table>
<thead>
<tr>
<th>Year</th>
<th>Payment Basis $\beta^1$</th>
<th>Payment/Accrual Basis $\beta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1952-53</td>
<td>.701</td>
<td>.892</td>
</tr>
<tr>
<td>1953-54</td>
<td>.417</td>
<td>.552</td>
</tr>
<tr>
<td>1957-58</td>
<td>.738</td>
<td>.765</td>
</tr>
<tr>
<td>1958-59</td>
<td>-.043</td>
<td>-.295</td>
</tr>
<tr>
<td>1961-62</td>
<td>.461</td>
<td>.468</td>
</tr>
<tr>
<td>1962-63</td>
<td>-.043</td>
<td>.219</td>
</tr>
</tbody>
</table>

First, consider the value of $\beta^1$ in the recession years. In 1952-53, the decline in tax revenue offset the otherwise inevitable decline in G.N.P. by 70 per cent. In 1957-58 and 1961-62, the otherwise inevitable

---

1 It is assumed also that the consumption taxes and the payroll tax are shifted forward.

2 The coefficient $\beta^1$ can be expressed by $1 - \frac{\Delta G.N.P.}{\Delta G.N.P.}$, and since $\beta^1 = .701$ and $\Delta G.N.P. = -$34m., the otherwise inevitable change would have been a decline in G.N.P. of $112m.$
increases in G.N.P. were offset by 74 and 46 per cent respectively. In the recovery years of 1958-59 and 1962-63, the automatic decline in tax revenue was stabilising, boosting the otherwise inevitable rise in G.N.P. by approximately 4 per cent in each instance.

For the values of $\beta^2$, the performance is similar with the exception of 1962-63 when the recovery was dampened. Performance in 1952-53 and 1958-59 appears to be quite good. In 1952-53, the otherwise inevitable decline in G.N.P. was offset to the extent of almost 90 per cent, and in 1958-59, the recovery was substantially boosted. For the inflation years, real taxes, on a payment basis, increased in five of the seven years. On the payment/accrual basis, there was a real increase in six of the seven years.

(vii) Summary

On a strict payment basis, and looking at individual taxes, there was a tendency for automatic changes to be destabilising more often than stabilising in the recession and recovery periods. On the accrual/payment basis, the result was similar. Total tax revenue changes, on the 'payment only' basis, were slightly more stabilising than on the accrual/payment basis. During the inflation periods, the tendency was for most automatic changes to be stabilising whether on the payment or payment/accrual basis. The built-in change in total tax revenue was, on a payment basis, stabilising in five inflation years while on the accrual/payment basis, the changes were stabilising in six years.

The contribution of each tax towards total built-in tax flexibility can be ascertained by calculating the
built-in marginal response (\(\Delta T/\Delta G_{N.P.}\)) for each tax and taking the result as a proportion of the marginal response of total tax revenue. The built-in marginal responses are recorded in VIII-M below. The relative contribution of any particular tax in a given year to total built-in tax flexibility is determined by taking the ratio of the marginal response of the particular tax to the marginal response of total tax liability. For example, the contribution of personal income tax to total built-in flexibility, (on a payment/accrual basis), in 1957-58 is .32/.80 or 40 per cent. A negative value of the marginal response simply indicates that the built-in tax change was in opposite direction to the change in

**TABLE VIII-M**

**BUILT-IN MARGINAL RESPONSES OF PARTICULAR TAXES AND TOTAL TAX LIABILITY**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Income</td>
<td>.41</td>
<td>.12</td>
<td>.32</td>
<td>-.11</td>
<td>.17</td>
<td>.01</td>
</tr>
<tr>
<td>Company Income</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-accrual</td>
<td>1.29</td>
<td>.10</td>
<td>.23</td>
<td>.03</td>
<td>.001</td>
<td>.06</td>
</tr>
<tr>
<td>-payment</td>
<td>-.94</td>
<td>-.03</td>
<td>.12</td>
<td>.07</td>
<td>.001</td>
<td>-.03</td>
</tr>
<tr>
<td>Sales</td>
<td>.56</td>
<td>.04</td>
<td>.11</td>
<td>.01</td>
<td>-.06</td>
<td>.03</td>
</tr>
<tr>
<td>Excise</td>
<td>-.21</td>
<td>.03</td>
<td>.12</td>
<td>.01</td>
<td>.04</td>
<td>.02</td>
</tr>
<tr>
<td>Payroll</td>
<td>.03</td>
<td>.01</td>
<td>.02</td>
<td>.01</td>
<td>.01</td>
<td>.004</td>
</tr>
<tr>
<td>Total Tax Liability</td>
<td>3.08</td>
<td>.30</td>
<td>.80</td>
<td>-.05</td>
<td>.16</td>
<td>.12</td>
</tr>
<tr>
<td>-accrual/payment</td>
<td>.85</td>
<td>.17</td>
<td>.69</td>
<td>-.01</td>
<td>.16</td>
<td>.03</td>
</tr>
<tr>
<td>- payments</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 This cannot be done by calculating the coefficient of built-in flexibility for each tax since the values of \(S\) for individual taxes are not additive. Proof of the non-additive nature of the \(S\)s requires that

\[
1 - c + \frac{c.E_i.t_i}{E_i.t_i} + \frac{c.E_j.t_j}{E_j.t_j} = \frac{c.E_k.t_k}{E_k.t_k}
\]

where \(E_i\) is the elasticity with respect to a change in tax \(i\) and \(E_j\) the elasticity with respect to a change in tax \(j\). The elasticity with respect to the net change in tax \(i\) plus tax \(j\) is \(E_k\). Given appropriate values for \(c\), \(E\) and \(t_0\), it can be shown that the lefthand side of the expression does not equal the righthand side.
G.N.P. The relative contribution of a particular tax is meaningful as long as the marginal response of each tax has the same sign. When this does not occur, the measure of contribution is somewhat vague. For example, in 1958-59, the relative contribution of the personal income tax to total built-in flexibility is 220 per cent, on an accrual/payment basis. The contribution by company income tax, on the accrual basis is -60 per cent. In this particular year, the built-in change in personal income tax was opposite in direction to the change in G.N.P. while all other taxes changed in the same direction.

(b) EXPENDITURE COMPONENTS

It is generally recognised that only unemployment benefits can really be classified as a built-in expenditure stabiliser. Furthermore, the contribution of unemployment benefits towards stabilising fluctuations in national income can be measured by a coefficient very similar to the Musgrave-Miller coefficient of built-in tax flexibility. It was pointed out in Chapter III that other expenditures, notably payments for social services and grants to the states, change automatically in response to demographic and economic changes. Unlike taxes and unemployment benefits, however, their response to fluctuations in national income is very limited. This does not, of course, preclude examination of the automatic changes in these expenditures in the light of their effect on the level of demand.

---

1 See Section (f), Chapter III.
(i) Unemployment Benefits

Cash benefits paid to registered unemployed persons respond quickly to changes in economic activity. Although rising unemployment may be the lagged response to some earlier economic change, the stabilisation of personal income which the benefits provide is immediate. Diagram VIII-C shows the total benefits paid out each quarter on a seasonally adjusted basis.\(^1\) The rise in benefits from $0.38m. in 1951-52 to $4.5m. the following year (at 1948-49 rates) is indicative of the speed at which the decline in economic activity occurred. The next period of unemployment, from 1955-56 to 1958-59, developed more slowly. There was then only a short reprieve of two years before benefits increased once more during the 1961-62 recession.

It should be pointed out that the payment of unemployment benefits does not precisely reflect the total number of persons unemployed. S.P. Stevens has shown that registrations tend to match unemployment only when the recession becomes serious.\(^2\) Early in the recession, registrations under-estimate the number of unemployed, and, for this reason, the rate of payment of benefits does not necessarily reflect the rate of increase in unemployment.

To measure the stabilising impact of these benefits, the coefficient \(\mu\) is computed. This is the proportion of the otherwise inevitable change in G.N.P. which is offset because of the built-in flexibility of unemployment benefits. The formula is

---

1. The original data were kindly made available by the Department of Social Services, Canberra.
DIAGRAM VIII-C

COMMONWEALTH UNEMPLOYMENT BENEFITS 1951-52 TO 1963-64 (THOUSANDS OF DOLLARS)

Seasonally Adjusted Quarterly Payments Based on 1948-49 Benefit Rates

SOURCE: Dept. Social Services Canberra.
\[ u = \frac{-c \cdot E_u \cdot r_u}{1 - c - c \cdot E_u \cdot r_u} \]

where \( c \) is the marginal propensity to consume domestically produced goods and services out of personal disposable income; \( E_u \) is the built-in elasticity of unemployment benefits with respect to changes in G.N.P. and \( r_u \) is the ratio of unemployment benefits to G.N.P. in the initial period. The values for \( u \) are recorded in the Table below.

**TABLE VIII-N**

**COEFFICIENT OF BUILT-IN FLEXIBILITY FOR UNEMPLOYMENT BENEFITS**

<table>
<thead>
<tr>
<th>Year</th>
<th>Value of ( u )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1952-53</td>
<td>+0.429 (^1)</td>
</tr>
<tr>
<td>1953-54</td>
<td>+0.031</td>
</tr>
<tr>
<td>1957-58</td>
<td>-0.052</td>
</tr>
<tr>
<td>1958-59</td>
<td>-0.007</td>
</tr>
<tr>
<td>1961-62</td>
<td>-0.129</td>
</tr>
<tr>
<td>1962-63</td>
<td>+0.014</td>
</tr>
</tbody>
</table>

The proportion of the otherwise inevitable decline in G.N.P. offset in 1952-53 was almost 43 per cent. This relatively large offset was caused by a decline in real G.N.P. of only $3^{14}m. while the automatic rise in benefits was $4m. In the next year, benefits declined and the otherwise inevitable rise in G.N.P. was offset 3.1 per cent. The negative value of \( u \) in 1957-58 and 1958-59 were the result of automatic increases in benefits occurring with increases in G.N.P. In these years, the otherwise inevitable rise in G.N.P. was boosted 5.2 and 0.7 per cent respectively. For the same reason, \( u \) was negative in 1961-62 indicating that the otherwise inevitable rise in G.N.P. was boosted. With an automatic decline in benefits in 1962-63, the value of \( u \) was positive.

\(^1\) Because of the inflation in the recession year 1952-53, the data was transformed into real value amounts,
(ii) Other Transfers

The other transfers which display an automatic change from year to year accounted for a large proportion of Commonwealth budgetary expenditure between 1948-49 and 1963-64. The automatic response of social service payments is primarily due to changes in population, and for the purpose of this exercise, the automatic increase from year to year is calculated by increasing payments by the percentage increase in population. The grants to the states respond automatically to population and wage changes. The tax reimbursement grants, which were in force up to 1958-59, were theoretically tied to a population and a wage index. They were, however, supplemented by large discretionary grants. The financial assistance grants which replaced the tax reimbursement scheme were more directly tied to a formula. Given the formula for both of these grant schemes, the automatic change from year to year can be calculated. These automatic changes along with those of social services are recorded in Table VIII-0 for post-war recession and recovery years.

These automatic changes in transfers were only destabilising once; in 1952-53 when social service payments declined. This was to be expected in the light of the inflation during that year. The financial assistance grants which were in operation during 1961-63

---

1 Total grants to the states and total social service payments were both, on average, about 20 per cent of annual budgetary spending.
2 A reference to the background of these grants is given in Section (d) of Chapter VI.
3 The proportion of grants to the states which was formula-determined is recorded in Table VI-G of Chapter VI.
TABLE VIII-0

AUTOMATIC CHANGE IN SOCIAL SERVICE PAYMENTS AND GRANTS TO THE STATES

($m.)

<table>
<thead>
<tr>
<th>Year</th>
<th>Social Services</th>
<th>Grants to States</th>
</tr>
</thead>
<tbody>
<tr>
<td>1952-53</td>
<td>-4.0</td>
<td>+8.3</td>
</tr>
<tr>
<td>1953-54</td>
<td>+22</td>
<td>+8.5</td>
</tr>
<tr>
<td>1957-58</td>
<td>+30</td>
<td>+6.3</td>
</tr>
<tr>
<td>1958-59</td>
<td>+29</td>
<td>+5.4</td>
</tr>
<tr>
<td>1961-62</td>
<td>+40</td>
<td>+28</td>
</tr>
<tr>
<td>1962-63</td>
<td>+45</td>
<td>+16</td>
</tr>
</tbody>
</table>

provided a considerably larger automatic increase than the tax reimbursement grants.

During a period of inflation, the impact of the automatic change in social service benefits will depend on the rise in prices. If prices rise by the same percentage as the rise in benefits, there will be no increase in real demand, given that such payments have a responding coefficient of unity. If the inflation is severe, there will be a decrease in real demand of budget origin. This latter situation occurred in those post-war periods when the rise in prices exceeded 2.5 per cent per annum.

With respect to grants to the states, both the increase in population and wages has to be considered. During post-war years of inflation, the rise in both these factors was sufficient to offset the increasing prices. Thus, the automatic increase in grants to the states was inflationary.

(c) CONCLUSION

The foregoing measures of the stabilising effectiveness of built-in changes in various taxes lead to the following conclusions. First, the performance of

\footnote{These changes are in real terms for 1952-53.}
automatic tax changes between 1948-49 and 1963-64 during recessions and recoveries was not very good. In two recessions, the poor performance was due to the lag between tax payments and tax accruals in the case of income taxes. Another factor contributing to the performance was the nature of the recessions of 1957-58 and 1961-62. In both cases, there was no decline in real G.N.P. and consequently, many tax revenues did not decline. Second, during periods of inflation, the performance was slightly better. On the accrual/payment basis, built-in tax changes were destabilising only once while on the payment basis, this occurred twice. In both cases, this took place immediately prior to a recession.

As far as automatic changes in expenditures are concerned, unemployment benefits were clearly stabilising in each recession. The changes in social service payments and grants to the states were stabilising in most of the recession and recovery periods. During inflation, real social service payments declined while grants to the states increased. Although these latter categories of expenditure (social service payments and grants to the states), are not highly responsive to fluctuations in G.N.P. like unemployment benefits, they are beneficial whenever the pace of economic activity declines.
CHAPTER IX
TIME LAGS AND AUSTRALIAN FISCAL POLICY

The effectiveness of fiscal stabilisation policy depends significantly upon the length of time required for a particular policy to have an effect on prices or employment. The time between the need for stabilisation policy and the impact of policy is due to a combination of institutional, psychological and economic factors. In the last few years, considerable discussion and measurement of time lags has taken place in Canada and the United States. The aim of this chapter is to expand on the discussion in Chapter IV, and, with reference to Commonwealth fiscal stabilisation policy, measure the lags involved.

(a) THE INSIDE LAG

The inside lag is the time between the need for discretionary action and an effective change in policy. A portion of the inside lag is the recognition lag, defined generally as the time between the need for stabilisation action and the recognition of this need. There is little doubt that such a lag exists but it raises several conceptual difficulties which all but preclude an objective measurement of this lag. First of all, when does a need for stabilisation policy occur?

2 Will, op. cit., second reference, p.137.
One proposal suggests that 'a change in policy so called for or should be given careful consideration by policy makers whenever a departure from a target variable occurs or is threatened'. ¹ A second suggests that 'where there is a definite expectation, justified by events, of serious recession or inflation...policies...should be supplemented by emergency fiscal action'. ² Both of these call for the establishment of specific criteria such as unemployment above a certain level for six months or a steady increase in prices over a number of months.

The second problem is to determine when the need for stabilisation policy has been recognised. It seems appropriate that the relevant observer is the government, but any information regarding official recognition of the need for discretionary action is, in most instances, unobtainable. Public statements by the executive on the need for restraint or more business confidence, do not necessarily reflect the government's recognition that policy measures were required. It is probably safe to say that, in Australia, the recognition by the executive that, on economic grounds, discretionary policy was required remains a highly confidential decision, the time of which is impossible to determine precisely.

One fact is certain; the time when a specific change in policy (fiscal or monetary) was proposed by the Commonwealth. This was not necessarily an indication of the government's recognition that action was required. First, it is possible that there was disagreement within the executive as to what specific action was to be

¹ Will, op. cit., p.135.
proposed which delayed the introduction of the action. 1

Second, the government was always in the position of being able to increase or reduce the rate of expenditure in certain departments without seeking concurrent legislative approval.

There is one part of the inside lag which can be measured objectively: the information lag. This is the time between a change in various economic indicators and publication of the change. The main source of time series data over this period was the Monthly Review of Business Statistics published by the C.B.C.S. Between 1948-49 and 1963-64, the last month reported in different series varied between one and three months prior to the date of publication. Some of the data appearing in the Review had, however, been published previously as a mimeographed bulletin or preliminary statement. These were made available to the public, Treasury and Reserve Bank simultaneously. Such early releases by the C.B.C.S. and those of the Department of Labour and National Service supplied information on a preliminary basis within a month or two during later years of the 1948 to 1964 period.

The availability of information did not remain static over this post-war period. Although the reporting lag in the Review did not alter significantly, the increasing frequency and wider coverage of preliminary statements and mimeographed releases made it possible to analyse changes in the economy more quickly. In the early sixties, economic analysis was assisted by the publications of quarterly estimates of gross national

---

1 One source of disagreement may have been whether to use monetary or fiscal counter-cyclical policies.
product. Finally, very recent publications (1967) present data both in original and deseasonalised form. Lack of such information undoubtedly hindered economic analysis in earlier years.

The information lag, the time between a change and reporting a change in some indicator, was therefore slightly shortened over the 1948 to 1964 period with an average lag of one to two months. Although improvements were also made in the quality of information available, the publication of an official index of factory production, surveys of capital spending intentions and consumer spending would have been helpful to those concerned with economic analysis and stabilisation policy.¹

As already mentioned, one of the obstacles to measuring the recognition lag is the lack of a precise definition of when the need for action occurs. The Commonwealth government never publicly stated any specific guidelines as to what limits it would permit unemployment or inflation to rise before proposing discretionary action. There were, of course, certain political advantages to be gained from not specifying statistical objectives too precisely. In order to estimate the total lag, some approximation of the recognition lag is required. It is therefore suggested that anti-inflationary policy was called for when the rate of increase in the consumer price index reached more than 2.5 per cent per annum, (on a monthly basis) and remained above this level for a period of three to six months.²

¹ An 'unofficial' index of factory production has been published quarterly by the Australian New Zealand Bank while business intention surveys have been conducted by the Bank of New South Wales.
² This abstracts from the need to introduce restrictive policy in the light of balance of payments difficulties.
Similarly, expansion policy was needed when the rate of unemployment exceeded two per cent of the work force for a period of three to six months.¹

Given that these were reasonable criteria for recognising that discretionary action was required, the next step for the government was to decide what specific measures should be taken. It was noted earlier that a particular discretionary change (monetary or fiscal) did not necessarily indicate that the need for action had been recognised. Even if there was no lag in deciding what action was required, it is quite possible that a fiscal policy change followed an earlier change in monetary policy. There is, therefore, no unique fiscal policy recognition lag. This is illustrated by the following examples of policy changes during the 1955 to 1964 period.

(i) By June of 1955, the consumer price index had been increasing at rates greater than 2.5 per cent per annum for five or six months. Anti-inflationary fiscal measures were not introduced until March 1956, eight and one-half months later. Monetary measures (directives to trading banks and calls to special accounts) were introduced as early as December 1954 and January 1955.

(ii) Unemployment had been at more than two per cent for three to four months by September 1957. The Treasurer noted in the September 1957 Budget Speech that some unemployment had emerged but no

¹ It was pointed out by a Commonwealth Treasury official that such criteria were, on average, reasonable. The actual lag in particular periods of instability would, of course, depend on a number of factors, including forecasting. With a highly reliable forecasting model, the lag could possibly be negative.
particular expansionary policy was proposed. A year later, an 'expansionary budget' was introduced. Between September 1957 and September 1958, expansionary policies were provided by monetary policy and additional Loan Council funds (in January and June 1958) were granted for employment-creating projects.

(iii) The consumer price index increased sharply between December 1959 and March 1960. Fiscal deflationary policy was introduced in September 1960. Before this, deflationary policies took the form of a relaxation of import controls (to allow some demand to spill into imports), and restrictive monetary policy.

(iv) By June 1961, unemployment had been above two percent for four to five months. In August 1961, an expansionary budget was introduced to reduce the unemployment. But expansionary measures had been introduced as early as June 1961 when an increase in Loan Fund allocations was provided for state works and housing.

From these examples, it is not clear when the government saw the need for discretionary action, nor is it clear when any Treasury decision was made on the matter. It is apparent from the examples above that some discretionary policy occurred at the same time, or before, the 'critical' level of unemployment or price inflation had been surpassed. These examples also indicate that when price instabilities arose, monetary policy was quickly introduced whereas the Loan Council was often the initial avenue for fiscal stabilisation.
measures when an increase in unemployment was recognised.¹

The remaining parts of the inside lag, the time required for parliamentary approval and the administrative problems of implementing discretionary changes, are not as difficult to measure. Under normal circumstances, the Treasurer presents the estimates of expenditure and revenue in the annual budget. Changes in tax rates, exemptions and expenditure are proposed along with the dates from which certain proposals become effective. The final pre-budget review of spending takes place in mid-July before a regular mid-August budget.² Thus, the final opportunity to alter expenditure policy for the purpose of stabilisation is one month before the expenditure program is proposed. Revenue decisions are made about the same time with the possibility of a last minute change.³

The annual budget is obviously a highly inflexible means of introducing discretionary fiscal policy. A decision in late June or early July to propose fiscal stabilisation policies could be introduced six weeks after this date.

¹ The Loan Council is a convenient way to introduce inter-budgetary stabilisation policy. The Commonwealth, at Loan Council meetings, is in a position to regulate, to some degree, funds for state works and housing. Between Loan Council meetings, the Commonwealth can, for example, signify its intentions to increase allocations, thereby permitting the states to draw advances on the proposed increased allocations.

² Since 1958-59, the annual Budget Speech has been delivered in the first or second week of August. Between 1948 and 1963, Budget Speeches have been given as early as August 5 and as late as October 12.

³ Although cabinet approval of expenditure and revenue is given two or three weeks before the budget presentation to allow time for printing and final calculations, there is nothing preventing the government from including a last minute change by means of a supplement to the budget.
later in the budget. A decision reached in December, for example, could not be introduced for eight months when the need for such action may well have passed. In Australia, the solution to this problem between 1948 and 1964 was the introduction of inter-budgetary economic measures or supplementary budgets in addition to the Loan Council allocations. The dates of these measures and the major policy changes are as follows:

<table>
<thead>
<tr>
<th>Date of Inter-Budgetary Policy Change</th>
<th>Nature of Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>March 1949</td>
<td>reduction in personal income tax rate</td>
</tr>
<tr>
<td>September 1955</td>
<td>announcement of reduction in spending</td>
</tr>
<tr>
<td>March 1956</td>
<td>increases in company, sales and excise tax rates</td>
</tr>
<tr>
<td>November 1960</td>
<td>increases in motor vehicle sales tax rates and proposal to disallow tax deductibility of interest for certain companies</td>
</tr>
<tr>
<td>February 1961</td>
<td>withdrawal of tax increase</td>
</tr>
<tr>
<td>March 1961</td>
<td>payroll tax reduction based on increased exports</td>
</tr>
<tr>
<td>May 1961</td>
<td>withdrawal of the non-deductibility of interest proposal</td>
</tr>
<tr>
<td>February 1962</td>
<td>reduced rates of taxation for personal income and durable goods</td>
</tr>
<tr>
<td></td>
<td>company investment allowance</td>
</tr>
<tr>
<td></td>
<td>increase in spending and unemployment benefits.</td>
</tr>
</tbody>
</table>

Although the timing, magnitude and nature of these changes were, in some cases criticised, they do reflect the desire and ability of the Commonwealth Government to overcome the inflexibility of the annual budget as a means of introducing fiscal stabilisation policy. With regard to both budget and inter-budget changes in policy, the Government, in the 1948-64 period, had sufficient parliamentary support to ensure rapid approval of policy changes. With many of these changes, the new policy
became effective when it was announced. This ease of implementing legislation in Australia is considerably greater than in the United States where policy changes may take months.¹

'Stand-by authority' has often been suggested as a possible means of overcoming legislative inflexibility. Such authority would permit the Treasurer to vary taxes and/or expenditure when price increases or unemployment reach undesirable levels. 'Stand-by authority' was approved in Great Britain, while, in the United States, Congress refused a request for such authority.² Although no such authority was sought in Australia, tax changes were introduced when Parliament was in recess.³ There was, therefore, virtually no legislative impediment to the introduction of discretionary fiscal policy in Australia.

A second proposal for more efficient stabilisation policy, is formula flexibility. Under this scheme, rates of particular taxes and/or spending change when a particular economic indicator reaches some predetermined level. For example, a five per cent increase in the rates of personal income tax might come into effect when the consumer price index rose to an annual rate of increase of four per cent. This method of implementing fiscal stabilisation policy has not been used in Australia nor elsewhere. The main objection, apart from political considerations, is that a formula which signals only serious instabilities and then applies the correct action would be extremely difficult to devise. A rapid

¹ Ando and Brown, op. cit., pp.107-8.
³ The sales tax on automobiles was reduced in February 1961 when Parliament was in recess.
increase in the consumer price index owing to a rise in
the price of imported foods requires different action
from that required by the same price rise owing to excess
demand. The advantage, which is the reduction of the
lag between recognising the need for and introducing
discretionary policy, appears, so far, to be outweighted
by the disadvantages.

A third solution to the problem of budget
inflexibility and inside lags in general, is to alter
the expenditure-tax structure in such a way that
automatic changes in tax revenue and expenditure, induced
by changes in national income, will mitigate economic
instabilities. Such built-in features existed between
1948 and 1964, but their efficiency as stabilisers was
not always good.¹

For a portion of the personal income tax and the
total company income tax, there was a collection lag of
approximately one year. Thus, high farm incomes in one
year were not reflected by a higher tax payment until the
next year. If farm incomes were low in the year the high
tax was paid, disposable income would not be cushioned.
A similar analysis applies to company income. The
efficiency of the personal income tax as an automatic
stabiliser increased over the post-war period as a
larger share of personal income became subject to the
pay-as-you-earn system.² The lag in this case was only
a matter of a month. On the expenditure side,
unemployment benefits responded quickly to changes in
the work force, but the low level of unemployment and
modest size of benefits were reasons for the relatively
small impact of such an automatic stabiliser.

¹ See Chapter VIII.
² See Diagram IX-A.
Diagram IX-A

Percentage of personal income tax revenue collected through installment payments

Source: Report of the Commissioner of Taxation (Annual)
The time required to administer a discretionary fiscal change constitutes the final component of the inside lag. The lag here is the time between the proposed change (budget speech, supplementary economic measures), and the time when the change actually begins to take place. For tax changes, the following table indicates the nature of the tax change, the date proposed and when it became effective.

The lag for the excise and sales tax is quite short (0 to 2 months). For personal income tax, the lag depends upon the method of collection. On the instalment basis, it varied between one-half and two and one-half months, while on a provisional payment basis, it was between two and one-half to seven and one-half months.

Measurement of the time lags associated with the administration of expenditure changes is more complex, and the problem received considerable attention in the post-war period. The main components of this lag are (a) organising expenditure projects, (b) completing technical details, (c) advertising for bids and awarding contracts and (d) the contractors delay. These lags will vary depending upon the size and nature of the project as well as the availability of resources required to commence the job. In Maisel's study, the average length of time between approval of a project and award of the contract in the United States for 1946 was ten months. The period between advertising bids and awarding contracts

---


2 Maisel, op. cit., p.149.
### TABLE IX-B

ESTIMATES OF THE ADMINISTRATIVE LAG FOR CHANGES IN TAX POLICY

<table>
<thead>
<tr>
<th>Date of Proposal</th>
<th>Personal Income</th>
<th>Effective Date</th>
<th>Company Income</th>
<th>Sales/Excise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct. 12/50</td>
<td>Nov. 1(1/4)</td>
<td>Sept. 16/60</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>Sept. 26/51</td>
<td>Nov. 1(2 1/2)</td>
<td>Aug. 14/60</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>Aug. 18/54</td>
<td>Sept. 1(1/2)</td>
<td>Sept. 15/61</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>Mar. 14/56</td>
<td>Mar. 1(3/4)</td>
<td>Mar. 15/63</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>Sept. 3/57</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aug. 16/60</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feb. 7/62</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aug. 13/63</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*The administrative lag for the company income tax is assumed to be zero. Although it may require a few weeks to circulate new rates, companies are immediately aware of the effect of tax changes on tax liability since they (the changes) apply to the previous year's income.*
in Canada was estimated by Will to be one to two months. ¹
A minimum of four weeks is given as the time for a project to commence after award of the contract.² The above estimates apply to new projects or projects that are still in the early planning stage. For immediate stabilisation purpose, it is likely that policy will be directed towards accelerating or reducing the rate of spending on present projects. At any time in Australia, there are a variety of projects, both State and Commonwealth, in various stages of progress. Once funds are made available or promised, a number of these projects can be accelerated, to absorb labour, in a short time. Reducing the rate of expenditure might present greater problems, and if so, any appreciable effect on demand would involve a longer time lag. For Australia, it appears that the administrative lag for moderate increases in expenditure during a period of unemployment was only a matter of one or two months. The lag involving a change in transfers was approximately one or two months.

Having discussed and where possible, measured portions of the inside lag, can it be suggested what the total length of this lag was in the post-war period. The information lag varied between one and three months. A rough estimate of the recognition lag might be six months. This was shorter when certain economic indicators showed a very large change over a one or two month period.³ A

¹ Will, op. cit., p.148.
² Howenstine, op. cit., p.236.
³ An example of this is February 1961 when the Commonwealth reduced the sales tax on automobiles following a decline in the industry during December 1960 and January 1961.
recognition lag then, of two to six months does not seem unreasonable. The length of time required to take action is unknown. It seems likely that some fiscal action, (budgetary or Loan Council) or monetary change would be taken within one or two months of recognising the need.

The time needed for legislative approval was zero while the administrative lag depended on the particular tax or expenditure measure. For taxes, this was probably between zero and eight months. For moderate increases in expenditure, the lag was probably two to six months on average. It was undoubtedly longer if new projects were introduced to stimulate the economy. The following table provides a summary of the estimates of the inside lag for discretionary fiscal policy changes.

**TABLE IX-C**

ESTIMATES OF INSIDE LAGS FOR FISCAL POLICY CHANGES

<table>
<thead>
<tr>
<th>Change</th>
<th>Lag (months)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Income Tax</td>
<td></td>
</tr>
<tr>
<td>- instalment</td>
<td>3 1/4 to 11 1/2</td>
</tr>
<tr>
<td></td>
<td>5 1/2 to 16 1/2</td>
</tr>
<tr>
<td>- other</td>
<td></td>
</tr>
<tr>
<td>Sales/Excise Tax</td>
<td>3 to 9 1/2</td>
</tr>
<tr>
<td>Company Income Tax</td>
<td>2 to 16 1/2</td>
</tr>
<tr>
<td>Expenditure on Goods and Services</td>
<td>5 to 15 +</td>
</tr>
<tr>
<td>Transfers to Persons</td>
<td>4 to 10 1/2</td>
</tr>
</tbody>
</table>

(b) **THE OUTSIDE LAG**

The outside lag was defined as the time between the effective change in policy and its impact on some target such as prices or employment. For an increase in public works, the outside lag is non-existent, since the commencement of a new project or acceleration of present projects implies the hire of labour. For personal transfers, it seems reasonable to assume that the lag between receiving benefits and spending is short. The
The impact of a company tax rate reduction may not occur for some time after the reduction in tax liability. A sales tax reduction, however, is likely to stimulate sales within a month or two. Lags associated with some changes in fiscal policy such as the effect of higher income taxes on prices, are virtually impossible to measure.

The analysis here has been confined mainly to measuring the relationship between changes in consumer expenditure (C) and changes in personal disposable income (Y_d). An attempt has also been made to estimate the lag between a change in consumption and a change in production, as well as the lag between production and employment changes. The first lag, between income changes and consumption changes, was measured by the regression technique described in Section (a) of Chapter IV.

One of the problems in applying time series data to estimate the relationship between consumption and income is serial correlation which may render the significance tests for values of regression coefficients invalid. One method of reducing serial correlation is to divide the three series C_t, Y_{dt} and C_{t-1} by Y_{dt} so that the relationship to be estimated becomes

\[ \frac{C_t}{Y_{dt}} = b_1 + c_1 \cdot \frac{(C_{t-1})}{Y_{dt}} \]

Using quarterly, current value data for the period September 1958 to June 1966, and adjusting for seasonal influences the following equation was obtained.\(^1\)

\(^1\) Assuming seasonal factors to be linearly related, it is possible to write \(Q_1 = 1\) in the first quarter and 0 for all others, \(Q_2 = 1\) in the second quarter only and \(Q_3 = 1\) in the third quarter only. For a description of this method of seasonal adjustment see L. Klein, An Introduction to Econometrics, (N.J., Prentice-Hall, 1963), p.35
\[
\frac{C_t}{Y_{d_t}} = 0.3304 + 0.7269 \frac{C_{t-1}}{Y_{d_t}} - 0.0702 Q_1 - 0.0497 Q_2 - 0.1501 Q_3 \quad [1]
\]

\[
R^2 = 0.891
\]

Lag coefficients for the eight quarters following a change in \(Y_d\) are:

<table>
<thead>
<tr>
<th>Lag</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1.727</td>
</tr>
<tr>
<td>1</td>
<td>0.529</td>
</tr>
<tr>
<td>2</td>
<td>0.385</td>
</tr>
<tr>
<td>3</td>
<td>0.280</td>
</tr>
<tr>
<td>4</td>
<td>0.148</td>
</tr>
<tr>
<td>5</td>
<td>0.108</td>
</tr>
<tr>
<td>6</td>
<td>0.079</td>
</tr>
</tbody>
</table>

According to this pattern of coefficient values, 47 per cent of the effect on \(C\) of a change in \(Y_d\) has taken place after one quarter, 62 per cent after the second quarter and 80 per cent after one year.

When \(C\) was replaced by \(C_d\), the consumption expenditure on durable goods, the resulting equation was:

\[
\frac{C_{d_t}}{Y_{d_t}} = 0.0698 + 0.5331 \frac{C_{d_{t-1}}}{Y_{d_t}} - 0.0009 Q_1 - 0.0234 Q_2 - 0.0226 Q_3 \quad [2]
\]

\[
R^2 = 0.549
\]

Lag coefficients for the eight quarters following a change in \(Y_d\) are:

<table>
<thead>
<tr>
<th>Lag</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1.531</td>
</tr>
<tr>
<td>1</td>
<td>0.282</td>
</tr>
<tr>
<td>2</td>
<td>0.150</td>
</tr>
<tr>
<td>3</td>
<td>0.080</td>
</tr>
<tr>
<td>4</td>
<td>0.042</td>
</tr>
<tr>
<td>5</td>
<td>0.022</td>
</tr>
<tr>
<td>6</td>
<td>0.012</td>
</tr>
<tr>
<td>7</td>
<td>0.006</td>
</tr>
</tbody>
</table>

According to this pattern of weights, 72 per cent of the effect on durable goods consumption has taken place after one quarter, 85 per cent after the second quarter and 96 per cent after one year. It is apparent that the response of \(C_d\) to \(Y_d\) is quicker than the response of \(C\). However, the coefficient of determination, \(R^2\), indicates that substantially more than a change in \(Y_d\) is required to explain changes in the consumption of durable goods.\(^2\)

\(^1\) Durable goods include electrical appliances, furniture, hardware and automobiles. Data was obtained from Australian Quarterly Estimates of National Income and Expenditure, various issues 1958 to 1965.

\(^2\) It should be pointed out that the responses here are related to the M.P.C. out of a change in total \(Y_d\). The response to a tax-induced change in \(Y_d\) may be greater. (See Chapter X).
Having examined the lag between changes in personal disposable income and consumption, the next step was to briefly investigate the lag between personal spending and production. Following a similar method employed by Ando and Brown, the A.N.Z. index of factory production \((P)\), was regressed on the volume of retail sales \((R_S)\), lagged by quarterly periods. Using deseasonalised data over the 15 year period 1949-50 to 1963-64, the relationship was

\[
0_t = -234.6 + 1.905R_S^t + 1.639R_S^{t-1} + 0.678R_S^{t-2} \\
+ 0.071R_S^{t-3} + 0.069R_S^{t-4} \\
R^2 = 0.845
\]

This indicates that the level of production in any one quarter depends on retail sales over a fairly long period. The size and significance of the coefficients of \(R_S^t\) and \(R_S^{t-1}\) suggests that the present and previous quarters are most important. However, the lagged values of \(R_S\) are highly correlated which precludes determining the specific influence of the lagged values of \(R_S\). In addition, the index of production, 0, includes items not included in retail sales.

In order that the marginal response of production to changes in spending could be more accurately determined, the relation between first differences of production and consumption of various items was tested. The only significant result was that for the automobile industry

\[
\Delta 0_t^{\text{mv}} = -9.522 + 0.3686\Delta R_t^{\text{mv}} + 0.0513\Delta R_t^{\text{mv}} \cdot 0.099 + 12.23Q_{t-1} + 24.23Q_{t-2} + 7.368Q_{t-3} \\
R^2 = 0.799
\]
where $O^{MV}$ is the index of automobile production and $R^{MV}$ is retail sales of automobiles. The above equation indicates that a change in output depends significantly upon a change in sales in the same quarter. In fact 57 per cent of the variance in $O^{MV}$ can be explained by changes in $R^{MV}$. The data for the above relationship was limited to the 1959 to 1964 period. The equation explicitly states that for this period, a $10$m. increase in the sale of automobiles was, on average, associated with a 3.7 point rise in the index of production.

The final lag tested was that between a change in production and change in employment. Using seasonally adjusted quarterly data for employment in factories and the A.N.Z. index of factory production, the equation for data covering the decade prior to 1963-64 was

$$ \Delta E^f = 2.039 + .3540\Delta_0 t + .4354\Delta_0 t-1 $$

$$ R^2 = 0.494 $$

This equation states that approximately one-half of the quarterly change in factory employment can be explained by changes in production in the same and previous quarter. Thus, a one point rise in the production index in period $t$ is associated with a rise in employment of 350 while a similar rise in period $t-1$ is associated with an increase in employment of 435.

If the question of these lags is confined to when the first response in spending, production and employment occurred as a result of an income change, the outside lag was not exceptionally long. The foregoing investigations show that spending appeared to have changed significantly.

---

1 Factory employment figures on a deseasonalised basis were kindly made available by A.M.C. Waterman.
within three months of an income change. In the automobile industry, there was a significant response in production to sales within three months. Finally, there was a significant response in factory employment to changes in production in the same quarter. In each of the three cases the lag was somewhere between one and three months suggesting the possibility of a total outside lag as short as three months. If the response did not occur until the end of the quarter, in each case, the total lag could have been up to nine months.

(c) SUMMARY AND CONCLUSION

The foregoing analysis indicates that the total fiscal time lag in Australia was between five and 25 months, depending upon the particular policy. This is calculated by summing the extremes of the inside and outside lags. A reasonable average would be six to 12 months. The following table is a summary of the time lags for discretionary changes in taxes and expenditures.

<table>
<thead>
<tr>
<th>Fiscal Change</th>
<th>Inside</th>
<th>Outside</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Income</td>
<td>3½ - 11½</td>
<td>3-9</td>
<td>6½ - 20½</td>
</tr>
<tr>
<td>Tax-installment -other</td>
<td>5½ - 16½</td>
<td>3-9</td>
<td>8½ - 25½</td>
</tr>
<tr>
<td>Company Tax</td>
<td>2 - 16½</td>
<td>3-**</td>
<td>5 - **</td>
</tr>
<tr>
<td>Excise/Sales</td>
<td>3 - 9½</td>
<td>3-9</td>
<td>6 - 18½</td>
</tr>
<tr>
<td>Expenditure on Goods and Service</td>
<td>5 - 15 +</td>
<td></td>
<td>5 - 15 +</td>
</tr>
<tr>
<td>Transfers</td>
<td>4 - 10½</td>
<td>3-9</td>
<td>7 - 19½</td>
</tr>
</tbody>
</table>

Given these estimates of fiscal time lags, to what extent, if any, have they inhibited effective fiscal policy? To answer such a question, it is necessary to
know something about the periods of Australia's post-war business cycle. Waterman estimates that the period from peak to trough of the cycle varied between 15 and 21 months, and from trough to peak, it varied between 16 and 26 months.\(^1\) If counter-cyclical policies, such as changes in the sales tax or moderate increases in expenditure were introduced before these peaks and troughs, there is little likelihood that they would be destabilising.

Unfortunately, major fiscal policies were undertaken late, in relation to turning points, on several occasions.\(^2\) Waterman estimates that the major peaks of the booms were June 1951, June 1955 and July 1960. Strong deflationary fiscal policies were introduced in September 1951, March 1956 and September-November 1960. The troughs of post-war recessions are estimated by Waterman to be November 1952, July 1958, and July 1961. Expansionary fiscal policies were introduced in August 1952, September 1958 and February 1962.

Dynamic studies indicate that the effects of fiscal policies are likely to continue for some time. The extent to which this may have occurred in the periods above is not possible to determine in the present framework. All that can be said is that given the estimated length of the administrative and outside lag, and the time at which policies were introduced, certain counter-cyclical fiscal policies probably had some destabilising effect on

---


2 It was noted in Section (a), however, that some counter-cyclical policies were introduced early in the stage of developing instabilities. These were usually in the form of moderate changes in monetary policy or expenditure policy. It would appear that the recognition lag was, in most cases, fairly short.
economic activity. The evidence suggests that this occurred with respect to deflationary rather than expansionary policies.
CHAPTER X

AN APPLICATION OF ECONOMETRICS
TO EVALUATE FISCAL TAX POLICY

One of the major difficulties in formulating fiscal stabilisation policy is imprecise knowledge regarding the response of consumers to given changes in fiscal policy, especially tax changes. There are a wide range of possible responses depending on the nature of the tax change and its magnitude. A reduction in the estates tax rate is likely to have quite a different impact on personal consumption than a reduction in personal income tax rates, (given that both changes result in the same loss of government revenue). With regard to transfer payments, the spending response to increased interest payments will probably be different from a similar increase in welfare payments.

To complicate matters, conditions of credit may affect consumer response to fiscal measures. For example, if hire purchase finance is readily available on easy terms, the impact on spending of higher personal income tax rates will probably be less than under conditions of tight credit policy. To be effective, fiscal policy may therefore have to be supplemented by monetary policy.

A third, and more formidable problem is consumer expectations. If, for instance, a sales tax change is accompanied by the expectation that the tax change is a short term, temporary measure, the current impact on spending will be considerably different than if the tax rise is considered to be a permanent one. \(^1\) Unlike

\(^1\) See Chapter III, Section (e).
savings and credit conditions, this particular variable is extremely difficult to measure.

In spite of these obstacles, consumption functions have been estimated for many countries. These have ranged from the simple Keynesian relationship of the form

\[ \text{consumption} = f(\text{disposable income}) \]

to the more complicated relationships of Klein, Friedman and Duesenberry.\(^1\) Post-war investigations of the Australian consumption function have been variations on the Keynesian theme.\(^2\) The major shortcoming of these studies lies in the use of annual, absolute time series data which introduces an element of serial correlation in the functional relationship. The problem which this produces was discussed earlier.\(^3\) In addition, only limited attention has been given to the impact of tax policy on consumption.

The purpose of this chapter is to present the results of applying some simple econometric analysis to the problem of fiscal tax policy analysis. The method used was briefly described in section (b) of Chapter IV. The data used was both annual (1948-49 to 1964-65) and


\(^2\) The major article devoted to the consumption function in Australia is that of H.W. Arndt and B. Cameron, op. cit. Professor Cameron has furthered his investigation in *Production, Prices and Employment in Australia 1958 to 1964*, Melbourne: Chesires, 1966. The consumption function is also discussed in the econometric models of Kmenta, Nevile, Smyth and Hagger, op.cit.

\(^3\) See Chapter IV, Section (b).
quarterly (1958 to 1965), the main sources of data being the Australian National Accounts (annual and quarterly) and the C.B.C.S. Monthly Review of Business Statistics. In deriving most of the following equations, simple least squares regression was applied to the first differences of the data. For the quarterly equation, it was necessary to remove the seasonal influence affecting changes in the dependent and independent variables.

Assuming the seasonal factors to be linear, the simple consumption function can be written

\[ \Delta C_t = \alpha_0 + \alpha_1 \Delta Y_{d1t} + \alpha_2 Q_{1t} + \alpha_3 Q_{2t} + \alpha_4 Q_{3t} \]

where \( Q_{1t} = 1 \) in the first quarter and 0 in all other quarters; \( Q_{2t} = 1 \) in the second quarter and 0 in all others and \( Q_{3t} = 1 \) in the third quarter and 0 in all others. Finally, for the annual equations, both current value and constant value (1948-49 base) data was used. It was felt that the rate of price inflation in the early nineteen fifties may have concealed the impact of a tax change on consumption when current value data is used.\(^2\) Constant value data is denoted by underlining the variables which have been deflated.

The first relationship established was between a change in personal consumption expenditure (\( \Delta C \)) and a change in personal disposable income (\( \Delta Y_d \)). The annual data equations are

\[ \Delta C_t = 391.9 + .2521 \Delta Y_{d1ta} \quad R^2 = .219 \quad [1] \]
\[ \Delta C_t = 93.86 + .3181 \Delta Y_{d1a} \quad R^2 = .496 \quad [2] \]

---

1. See reference to Klein in Chapter IX.
2. Constant value data was obtained by dividing money values of dependent and independent variables by the Consumer Price Index, with base year 1948-49 = 100.
while the quarterly data equation is

$$\Delta C_t = 162.2 + .1991 \Delta Y_{dt} - 175.50 - (0.033) \Delta d_t (22.5)$$

$$36.84Q_0^2 - 309.6Q_3$$

$$R^2 = .973 [3]$$

The standard errors are in brackets below the estimated regression coefficients and $R^2$ is the coefficient of determination.

For the annual data, equation [2] is the only equation where the $R^2$ is significant. It says that approximately one-half of the change in real consumption between 1949 and 1965 can be explained by the change in real disposable income. The $R^2$ value in the quarterly equation says that 97 per cent of the change in consumption between 1959 and 1965 can be explained by changes in personal disposable income and the pattern of seasonal influences including factors associated with these seasonal influences. The partial coefficient of determination between $\Delta C$ and $\Delta Y_d$ is 0.562 which is similar to the $R^2$ value of equation [2]. The regression coefficient of $\Delta Y_d$ in the quarterly equation is quite significant, the standard error being only one-sixth of the coefficient value. It indicates that, other things constant, a $10m. rise in $Y_d in a quarterly period was, on average, associated with a $2m. rise in personal consumption expenditure. The substitution of a lagged independent variable in equation [3] did not improve the fit.

In order to improve the fit of the previous equations, the change in personal instalment credit ($\Delta H$) was introduced as an explanatory variable.\(^1\)

---

\(^1\) This is the change in the amount of instalment credit outstanding for retail sales, excluding machinery and plant equipment. The data was obtained from the C.B.C.S. Monthly Review of Business Statistics. On a consistent basis, this information is available only from 1953-4 onward.
Incorporating this new variable, the annual equations are

\[
\Delta C_t = 227.5 + 0.4396 \Delta Y_d + 0.7885 \Delta H_t \quad R^2 = 0.604 \quad [4]
\]

\[
\Delta C_t = 73.16 + 0.3968 \Delta Y_d + 1.203 \Delta H_t \quad R^2 = 0.707 \quad [5]
\]

with a quarterly data equation

\[
\Delta C_t = 156.0 + 0.1875 \Delta Y_d + 0.9139 \Delta H_t - 175.7 Q_t - 37.53 Q_{t-1} - 276.2 Q_{t-2} \quad R^2 = 0.972 \quad [6]
\]

For the annual data, the \( R^2 \) value for equation [5] indicates a better fit with 71 per cent of the variance in \( C \) explained by the variance in \( Y_d \) and \( H \). In addition to the better 'fit', the coefficients of the endogenous variables are more significant in equation [5] than in equation [4]. In both equations, the introduction of the instalment credit variable helped to explain the annual changes in personal consumption expenditure. In the quarterly equation, the partial correlation coefficient indicates that more than 80 per cent of the variance in \( C \) is explained by changes in \( Y_d \) and \( H \).

The regression coefficient of \( \Delta H \) in equation [5] and equation [6] are both fairly significant, and indicate that the marginal response of consumer spending (or real consumption in the case of equation [5]), is close to unity. This is what one would expect since the acquisition of credit is primarily for current consumption spending.

For fiscal policy purposes, the importance of instalment credit cannot be overlooked. If large increases in credit are expected, then restrictive fiscal policy, in the form of higher taxes, will have to be of sufficient magnitude to compensate for the expected change in credit. Control over the availability of
credit will assist in formulating effective fiscal stabilisation policies.

The value of the marginal response of $C$ to changes in $Y_d$ must be qualified with respect to tax policy. The change in $Y_d$ in the preceding equations was the change brought about by a number of factors i.e. tax policy, wage increases, dividend payments and other components of personal income. It is quite possible that consumption may have responded in a different manner to a tax-induced change in $Y_d$ as compared to a change induced by changes in all other determinants of $Y_d$.

The first method used to test for this possibility is similar to that used by Ando and Brown. The form of the relationship tested is

$$\frac{C}{Y_d} = a + \beta \frac{T_p}{Y_d}$$

where $T_p$ is total personal income tax revenue. A negative coefficient for $\frac{T_p}{Y_d}$ would indicate that consumption had responded more quickly to a tax induced change in $Y_d$ than a change induced by non-tax factors.

The annual data equation is

$$\frac{C}{Y_d} = 0.9484 - 0.5586 \frac{T_p}{Y_d}$$

$$R^2 = .081 \quad [7]$$

The correlation coefficient of equation [7] and the regression coefficient are not significant. Consequently, there is no indication that a tax-induced change in $C$ is any quicker or slower than a change induced by a change in total disposable income. The regression coefficient

---

1 Ando and Brown, op. cit., pp.120-123.
2 Ibid., p.121.
for the quarterly data equation was of no significance.\(^1\)

This technique does not highlight discretionary changes in personal income tax which may have a particular impact on consumption. One approach to test this possibility is to divide the change in \(Y_d\) into (a) the change owing to discretionary tax policy and (b) the change owing to the aggregate effect of all other components of \(Y_d\). This was done for the annual periods 1948-49 to 1964-65 and the quarterly periods 1958 to 1965 by adding to or subtracting from the actual change in \(Y_d\), the estimated revenue impact of the discretionary tax change.\(^2\) The change in personal disposable income owing to a tax change is denoted by \(\Delta Y_d^T\) while the change owing to all other factors is denoted by \(\Delta Y_d^A\). Employing \(\Delta Y_d^T\) and \(\Delta Y_d^A\) as independent variables, the only significant equation obtained is\(^3\)

\[
\frac{\Delta C_t}{Y_{d,t}} = 88.48 + 0.3424\Delta Y_d^A_t + 0.6383\Delta Y_d^T_t
\]

\[
R^2 = 0.511 \quad [8]
\]

Although the coefficient of \(\Delta Y_d^T\) is not very significant, it does suggest that the marginal propensity to consume (M.P.C.) out of a tax-induced change in real \(Y_d\) may have

\(^1\) The quarterly equation is

\[
\frac{C}{Y_{d,t}} = 0.8993 + 0.4814 \frac{T_d}{Y_{d,t}} - 0.0379Q_1
\]

\[
- 0.0902Q_2 - 0.0714Q_3
\]

\[
R^2 = 0.912 \quad [3]
\]

\(^2\) Estimates of the revenue effect of personal income tax changes were given in Chapter I.

\(^3\) For the current value annual equation and the quarterly equation, the standard errors of the \(\Delta Y_d^T\) terms were larger than the regression coefficients.
been higher than the M.P.C. associated with a change in $Y_d$ which was otherwise-induced.

Another approach to this question is to introduce variables into the simple consumption function which represent the estimated increase and decrease in personal disposable income owing to a change in personal income tax legislation. This was carried out by introducing the variable $T^r_p$ to represent the estimated reduction in personal disposable income brought about by a change in personal income tax legislation which increased personal income tax revenue. The variable $T^i_p$ was introduced to represent an increase in personal disposable income brought about by a tax change which reduced revenue. Since $\Delta Y_d$ in the following equations includes the effect of the tax changes, $T^r$ and $T^i$ can be viewed as 'dummy' variables designed to test for any significant relationship between a particular tax change and a change in personal consumption expenditure. The annual equations are

$$\Delta C_t = 296.9 + .2956\Delta Y_d - .7380T^r_p + .1291T^i_p$$

$$R^2 = .430 \quad [9]$$

while the quarterly equation is

$$\Delta C_t = 87.58 + .3426\Delta Y_d + .2763T^r_p + .3294T^i_p$$

$$R^2 = .506 \quad [10]$$

1 The application of the revenue effects of discretionary tax changes is described in Appendix G.

2 Lagged values of the independent variables did not improve the fit of the equation.
Annual equation [9] indicates that between 1948-49 and 1964-65, there was a weak relationship between a rise in consumption spending and a tax-induced increase in $Y_d$. In the quarterly equation [11], the value of the regression coefficient and standard error of $T_p^r$ indicate a mildly significant relationship between a decline in consumer spending and a tax-induced reduction in $Y_d$. In both cases, the marginal response of $C$ to a tax-induced change in personal disposable income was greater than unity. Although the values of the parameters in these two cases are not very significant, they do support the previous suggestion that the M.P.C. associated with a tax-induced change in $Y_d$ was probably higher than the M.P.C. associated with the overall change in $Y_d$. The size of the standard errors of the coefficients $T_p^r$, $T_p^r$ and $T_p^i$ in the annual equations and $T_p^i$ in the quarterly equation indicate that the value of these coefficients are not significantly different from zero.

Having examined the relationship between discretionary changes in personal income tax and consumption, it seems appropriate to investigate the possible relationship between discretionary changes in the sales tax and personal consumption expenditure. As a means of testing for any significant relationship, the variables $T_p^r$ and $T_p^i$ were replaced by $T_s^r$ and $T_s^i$. The former represents the estimated reduction in Commonwealth sales tax revenue owing to a change in legislation while the latter represents an increase in revenue owing to a

---

1 The value of the coefficient $T_i^i$ in the annual equation and $T_i^i$ in the quarterly equation are only significant at an 80.5 to 85 per cent level.
change in legislation. The resulting annual equations are

\[ \Delta C_t = 306.1 + 0.3056 \Delta Y_{dt} - 0.4675 T^r_s + 5.778 T^i_s (3.23) \]

\[ R^2 = .419 \quad [12] \]

\[ \Delta C_t = 88.70 + 0.2938 \Delta Y_{dt} - 2.915 T^r_s + 6.001 T^i_s (3.97) \]

\[ R^2 = .511 \quad [13] \]

with a quarterly data equation

\[ \Delta C_t = 174.1 + 0.1869 \Delta Y_{dt} + 2.255 T^r_s - 12.87 T^i_s (5.37) \]

\[ 178.8 Q^1_t - 39.15 Q^2_s (26.9) \]

\[ 297.6 Q^3_s (16.8) \]

\[ R^2 = .978 \quad [14] \]

Equation [12] indicates that an increase in sales tax revenue, owing to higher rates of taxation, was associated with an increase in consumer spending. This particularly puzzling result is explained by the price inflation in 1951-52 when a large tax increase was accompanied by a substantial increase in consumer expenditure. In real terms, however, consumption declined in this year. If the year 1951-52 is excluded, the resulting equation gives a coefficient of \( T^i_s \) which is not significantly different from zero. When real data was used (equation [13]), none of the tax variable coefficients were significant, precluding the identification of any precise relationship between a real tax change and change in consumption.

---

For a discussion on the application of the tax change effects in these equations, see Appendix G.

The lagged values of the independent variables improved the fit.
The quarterly data equation indicates that there was a significant relationship between an increase in sales tax revenue, caused by discretionary tax policy, and a decrease in consumption expenditure in the following quarter. The equation also indicates a very weak relationship between a reduction in sales tax revenue, caused by discretionary tax policy, and a reduction in consumer expenditure. When $T_{st-1}^r$ was replaced by $T_{st}^r$, there was a negative correlation between a tax reduction and the change in consumption. The estimated parameter was not significant.

The problem in the above equations where tax variables are used is that a large portion of personal consumption expenditure is likely to be insensitive to changes in the personal income and sales tax. Food, clothing and rent are highly 'stable' expenditures. By including them in total consumption expenditure, the effect of discretionary tax policy on tax-elastic goods, such as household durables and automobiles, may be difficult to determine.

It seems reasonable then, to assume that tax policy, for the purpose of stabilisation, was directed towards durable goods expenditure. If this was so, the substitution of consumer durable goods expenditure ($C_d$) for $C$ is an appropriate method to test for any significance between changes in $C_d$ and changes in $Y_d$ and other variables, especially discretionary sales and personal income tax changes. For the simple

---

1 Durable goods expenditure was obtained from the Australian National Accounts, both annual and quarterly issues. The goods included are electrical appliances, furniture, hardware and automobiles. The analysis of sales tax change in Chapter VII indicates that, on a number of occasions, the sales tax was employed as a stabilisation measure.
consumption-income relationship, the annual equations are,

\[ \Delta C_{d_t} = 47.31 + .0808 \Delta Y_{d_t} \quad R^2 = .135 \quad [15] \]

\[ \Delta C_{d_t} = 9.837 + .1156 \Delta Y_{d_t} \quad R^2 = .378 \quad [16] \]

while the quarterly data equation is

\[ \Delta C_{d_t} = 24.84 + .0378 \Delta Y_{d_t} - 12.23Q - .114Q_2 - 69.13Q_3 \quad R^2 = .884 \quad [17] \]

Annual equation [16] states that approximately 38 per cent of the variance in real durable goods consumption between 1948-49 and 1964-65 was explained by the change in real personal disposable income. The coefficient of \( \Delta Y_{d_t} \) is significant enough to indicate that, other things constant, a $10m. change in \( Y_{d_t} \) was, on average, associated with a $1.2m. change in \( C_{d_t} \). The value of the regression coefficient of \( \Delta Y_{d_t} \) in the quarterly equation is not very significant. The partial correlation coefficient between \( \Delta C_{d_t} \) and \( \Delta Y_{d_t} \) indicates, however, that, on a quarterly basis, 58 per cent of the variance in \( C_{d_t} \) between 1958 and 1965 is explained by the change in \( Y_{d_t} \).

Adding the change in instalment credit as an independent variable to equations [15], [16] and [17] gave the following results. Annually,

\[ \Delta C_{d_t} = -15.09 + .1249 \Delta Y_{d_t} + .7389 \Delta H_t \quad R^2 = .669 \quad [18] \]

\[ \Delta C_{d_t} = -1.692 + .1071 \Delta Y_{d_t} + .7287 \Delta H_t \quad R^2 = .728 \quad [19] \]
while quarterly,

\[ \Delta C_d = 24.51 + 0.0497 \Delta Y_d + 1.002 \Delta H_d - \\
(0.014) (0.202) \\
27.55Q_1 - 20.67Q_2 - 33.92Q_3 \quad R^2 = 0.947 \quad [20] \\
(11.2) (13.1) (9.70) \\
\]

The regression coefficients of all independent variables in the above three equations are quite significant. For the annual equation, it matters little whether real or current value data is used. Both of these equations indicate that approximately seventy percent of the variance in real or current value consumption of durables was explained by the variance in real or current value personal disposable income and instalment credit. For the quarterly equation, the coefficient of determination was close to eighty-five per cent.

Although the values of the regression coefficients are more significant than in equations [4] to [6] the fits are very similar. Again they point to the importance of instalment credit as a determinant of fluctuations in consumer spending.

Following the same line of investigation when total consumption was the dependent variable, the Ando-Brown method of testing for the response of consumption to tax-induced changes in \( Y_d \) was applied to durable goods consumption. The annual data equation was

\[ \frac{C_d}{Y_d} = 0.1615 - 0.1688 \frac{T_p}{Y_d} \quad R^2 = 0.196 \quad [21] \\
(0.125) \\
\]

The fit is very poor and there is little that can be said about the particular response of \( C_d \) to a tax-induced change in disposable income. As before, the

---

1 These equations covered the period 1953-54 to 1964-65 thereby omitting the earlier years of severe price inflation.
coefficient in the quarterly data equation was not significant. 1

Using the change in $C_d$ as the dependent variable, the next step was to test for the effect of a discretionary personal income tax change on durable goods consumption. This was done by separating $\Delta Y_d$ into $\Delta Y_d^A$ and $\Delta Y_d^T$ as described earlier. The resulting annual equations are as follows.

$$
\begin{align*}
\Delta C_{d_t} &= 41.76 + .0887 \Delta Y_{d_t}^A + .1613 \Delta Y_{d_t}^T \\
R^2 &= .138 \quad [22] \\
\Delta C_{d_t} &= 6.494 + .1304 \Delta Y_{d_t}^A + .3175 \Delta Y_{d_t}^T \\
R^2 &= .408 \quad [23]
\end{align*}
$$

The quarterly equation is

$$
\begin{align*}
\Delta C_{d_t} &= 12.86 + .0267 \Delta Y_{d_t}^A + .7056 \Delta Y_{d_t}^T - 7.829Q_1 + 13.59Q_2 - 63.67Q_3 \\
R^2 &= .882 \quad [24]
\end{align*}
$$

The value of the coefficient of $Y_{d_t}^T$ in equation [22] was not significant, nor was the value of $R^2$. In equation [23], the regression coefficient was slightly significant. In the quarterly equation however, the coefficient was significant at a 99 per cent level of confidence. This indicates that the short-run response of $C_d$ to a tax-induced change in $Y_d$ was, on average, higher than the response to a change in $Y_d$ which is

---

1 The equation was

$$
\frac{C_d}{Y_d} = 0.1669 + 0.0050T_p - 0.072Q_1 - 0.066Q_2 - 0.053Q_3 \\
R^2 = .479
$$
otherwise induced.¹ The above quarterly equation suggests that other things being equal, almost three-quarters of a tax-induced change in $Y_d$ is reflected by a change in durable consumption in the same period.

To test for unique responses of $C_d$ to personal income tax increases and decreases separately, the method described on page 311 was adopted. For discretionary changes in personal income taxation, the annual equations are

$$\Delta C_d = 21.43 + 0.1018\Delta Y + 0.0030T^r + \frac{0.3490T_i}{(0.532)_p}$$

$R^2 = 0.175$ [25]

$$\Delta C_d = -11.50 + 0.1644\Delta Y + 0.1222T^r + \frac{0.6490T_i}{(0.452)_p}$$

$R^2 = 0.469$ [26]

with a quarterly equation

$$\Delta C_d = 28.07 + 0.0243\Delta Y + 2.392T^r - \frac{0.5658T_i}{(0.429)_p} + 3.455Q_1 + \frac{4.197Q_2}{(12.8)} - \frac{71.41Q_3}{(8.12)}$$

$R^2 = 0.924$ [27]

In equation [26], the coefficient of $T^i_p$ is significant at an 80 to 90 per cent level, indicating the likelihood of a fairly high response by $C_d$ to a tax-induced rise in personal disposable income. In the quarterly equation, the coefficient of $T^r_p$ (lagged) was quite significant, indicating a high response by $C_d$ in one quarterly period to a tax-induced decline in personal disposable income in the previous period. On average, a discretionary tax change which reduced personal disposable income in one

¹ Earlier, when total consumer spending was used as the dependent variable, only one equation even suggested this possibility.
quarter by $10m. was associated with a decline in durable goods consumption of $24m. in the following quarter, other factors being constant.

As before, sales tax variables were substituted for personal income tax variables. The annual equations are

\[
\Delta C_d = 61.82 + 0.0729 \Delta Y_d + 0.7103 T^r_s - 0.5400 T^i_s + 0.7103 T^r_s - 0.5400 T^i_s
\]

\[
\Delta C_d = 7.487 + 0.1070 \Delta Y_d - 1.117 T^r_s - 0.1978 T^i_s
\]

with a quarterly equation

\[
\Delta C_d = 29.55 + 0.0381 \Delta Y_d + 0.3692 T^r_s - 5.218 T^i_s - 15.66 Q_1 - 4.581 Q_2 - 66.67 Q_3
\]

The coefficients of the tax variables in equations [28] and [29] were not at all significant, nor were the values of the $R^2$. In equation [29], however, the partial coefficient of determination between $\Delta C_d$ and the tax changes showed that 27 per cent of the variance in $C_d$ was explained by the discretionary sales tax changes.

The quarterly equation indicates that there was a significant relationship between an increase in sales tax rates in one quarter and reduction in the consumption expenditure on durable goods in the following quarter. The coefficient of $T^i_s$ (lagged) is very high e.g. 5.218, suggesting that durable goods consumption, in the short run, is highly tax-elastic with respect to an increase in sales tax rates. Further analysis shows that almost
20 per cent of the variance in $C_d$ in one period or quarter, was explained by sales tax increases in the previous period.

**SUMMARY AND CONCLUSION**

The main result of the above investigations are as follows:

(i) Annual (1948-49 to 1964-65) and quarterly (1958 to 1965) simple consumption functions using first differences indicate that considerably more than the change in personal disposable income determined the change in consumption expenditure. Instalment credit enhanced the explanation of changes in consumer spending. With the annual data, the use of constant value data improved the fit of the equation.

(ii) There was some evidence to suggest that the marginal propensity to spend associated with a tax-induced change in personal disposable income was higher than that associated with the change in income otherwise-induced. More specifically, an increase (decrease) in total consumer spending was associated with a decrease (increase) in personal income tax rates.

(iii) For the 1958 to 1965 period, the equations indicated that there was a significant relationship between higher sales tax rates and a reduction in consumer spending.

(iv) The marginal propensity to consume durable goods associated with a tax-induced change in personal disposable income was higher than that associated with the otherwise-induced change in personal disposable income. More specifically, on an annual basis, a real rise in consumer durable expenditure was associated with a tax-induced increase in real personal disposable
income. On a quarterly basis, a decrease in durable goods expenditure was associated with a tax-induced reduction in personal disposable income.

(v) The quarterly equation indicates that a reduction in durable goods spending was significantly associated with an increase in sales tax rates and that the lagged response by consumption expenditure was high. The annual equation using real data showed that a substantial proportion of the variance in real durable goods expenditure was explained by discretionary sales tax changes.

The main conclusion, aside from the insight into consumer spending, is that the above evidence strongly suggests fiscal tax policy did have a stabilising impact during the 1948-49 to 1963-64 period. From a quantitative point of view, the parameters of the tax variables indicate a fairly high response of durable consumption to discretionary tax policy. Whether or not fiscal tax policy was more effective as an anti-inflation or anti-recession weapon is a question which the limited investigation above cannot answer.
CHAPTER XI
FISCAL MARKSMANSHIP

Effective fiscal stabilisation policy requires a high degree of accuracy in forecasting revenue and estimating expenditure. The importance of this fact was discussed earlier in Chapter IV. The degree of accuracy is also important for the purpose of this study, in view of the use of the Commonwealth's estimates of the revenue effect of tax changes to separate discretionary from automatic fiscal policy. The following is a measure of the accuracy of Commonwealth predictions of revenue and expenditure.1

Three statistical techniques are used to make this appraisal of fiscal marksmanship. In the first section, the difference between the actual change in tax revenue or expenditure is compared with the predicted change, both changes expressed as a percentage of actual tax revenue or expenditure the year before. In the second section, linear relationships between actual and predicted change in revenue and expenditure are computed. The results are used to evaluate fiscal accuracy. In the third section, the value of the coefficient of inequality is computed.

(a) ACTUAL AND PREDICTED CHANGES IN TAX REVENUES AND EXPENDITURES

TAXES

The difference between the actual and predicted percentage change in tax revenue varied considerably between 1949 and 1964 as Diagram XI-A shows. The sales

1 These predictions appear each year in the Budget Speech.
DIAGRAM XI-A
ERRORS IN FORECASTING TAX REVENUES

Per cent

+ 10

+ 0

- 10

- 20

personal income tax

+ over estimate
- under estimate

company income tax

XI-A(i)

+ 40

+ 30

+ 20

+ 10

sales tax

excise

XI-A(ii)

DIAGRAM XI-A

ERRORS IN FORECASTING TAX REVENUE

Per cent

other taxes

-10
-20

customs duties

XI-A(iii)

+10
+5
0
-5

all taxes

XI-A(iv)

1952-1953
1957-1958
1961-1962
tax underwent the widest range of fluctuation with an under-estimation of 18.9 per cent and an over-estimation of 37.6 per cent. The range was much smaller for excise taxes with an under-estimation of 9.1 per cent and an over-estimation of 3.1 per cent. For total tax revenue, the range was between an under-estimation of 8.3 per cent and an over-estimation of 4.9 per cent.

Errors were divided into absolute error, over-estimation and under-estimation, and the average for each was calculated. These are presented in Diagram XI-B. Diagram XI-B (i) shows the absolute average absolute error for each of the major taxes over the fifteen year period up to 1964. The ranking of these taxes, with the smallest error first, is

1. excise
2. other
3. personal income
4. company income
5. customs
6. sales

The average annual error for total tax revenue was only slightly over three per cent.

Diagrams XI-B (ii) and XI-B (iii) show the average over-estimate and under-estimate errors. In two categories, sales tax and other taxes, the average over-estimate was greater than the average under-estimate. For total tax revenue, the average over-estimate was approximately equal to the average under-estimate.

Since the first half of this 1949 to 1964 period was marked by substantial increases in income and prices, the prediction of revenue and expenditure was somewhat handicapped. With a reduction in the intensity of price fluctuations later in the period, one might expect better prediction. In order to test for this possibility, two sub-periods, 1949 to 1957 and 1958 to 1964, were set out,
DIAGRAM XI-B

AVERAGE ERRORS IN FORECASTING TAX REVENUE
1949-50 TO 1963-64

Per cent

(i) Average Absolute Error

(ii) Over-estimation

(iii) Under-estimation
DIAGRAM XI-B
ERRORS IN FORECASTING TAX REVENUE
1949 TO 1957 COMPARED WITH 1958 TO 1964

(iv) Average Absolute Error

(v) Over-estimation

(vi) Under-estimation

Per cent
and the prediction performance for each period calculated. The results of the findings are shown in Diagrams XI-B (iv) to B (vi). With each tax, the average absolute error in the second period was below that of the first period. This was also true for average errors of under-estimation, but not so for over-estimation.

EXPENDITURE

The range of error for expenditures was not as extensive as for taxes. The maximum over-estimation was 12.2 per cent (other expenditures), while the maximum under-estimation was 16.6 per cent (grants to the states). The following graphs show the range of fluctuation of error for defence, social service payments, capital works, grants to the states and other expenditure.

The average annual errors are shown in Diagram XI-D. The ranking of the various expenditures, with the smallest absolute error first, is

1. grants to the states
2. social service payments
3. defence
4. other expenditures
5. capital works

Diagrams XI-D (ii) and D (iii) show the average over-estimation and under-estimation respectively. The largest error of over-estimation was associated with other expenditures, while capital works had the largest error of under-estimation.

The period 1949 to 1964 was divided into two shorter sub-periods as was done for taxes. The errors for these separate periods are shown on Diagrams XI-D (iv) to XI-D

1 Because of the small number of observations (eight in the first period and seven in the second), the average over-and under-estimations are not highly significant.
DIAGRAM XI-C
ERRORS IN ESTIMATING EXPENDITURES

+ over estimate
- under-estimate

social welfare

defence

XI-C(i)
capital works

grants to the states

XI-C(ii)
other expenditure
total expenditure

XI-C(iii)

DIAGRAM XI-D

ERRORS IN ESTIMATING EXPENDITURE

Per cent

(i) Average Absolute Error

(ii) Over-estimation

(iii) Under-estimation
DIAGRAM XI-D

AVERAGE ERRORS IN ESTIMATING EXPENDITURE
1949 TO 1957 COMPARED WITH 1958 TO 1964

(iv) Average Absolute Error

(v) Over-estimation

(vi) Under-estimation
(vi). With two exceptions, improvement was evident in the second period 1958 to 1964. The exceptions were grants to the states and social service expenditure.

(b) MEASURING ACCURACY BY LINEAR REGRESSION

The second method of measuring the accuracy of tax and expenditure predictions was to establish a linear relationship between the actual change in tax revenue or expenditure and the predicted change. This was done by regressing the predicted change $P$ on the actual change $A$, as described in Chapter IV. In the equations below, subscripts denote particular tax or expenditure items.

TAXES

The linear relationship between the predicted and actual change in particular taxes and total tax revenue is shown in the following tables.

**TABLE XI-A**

LINEAR RELATIONSHIP BETWEEN PREDICTED AND ACTUAL TAX REVENUE

<table>
<thead>
<tr>
<th>Tax</th>
<th>Equation</th>
<th>Correlation Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Income</td>
<td>$P_{pi} = 1.53 + 0.823A_{pi}$</td>
<td>0.978</td>
</tr>
<tr>
<td>Company Income</td>
<td>$P_{ci} = -0.945 + 0.775A_{ci}$</td>
<td>0.980</td>
</tr>
<tr>
<td>Sales</td>
<td>$P_{s} = -4.89 + 0.944A_{s}$</td>
<td>0.944</td>
</tr>
<tr>
<td>Excise</td>
<td>$P_{e} = -1.02 + 0.967A_{e}$</td>
<td>0.943</td>
</tr>
<tr>
<td>Customs</td>
<td>$P_{c} = -3.17 + 0.719A_{c}$</td>
<td>0.880</td>
</tr>
<tr>
<td>Other Taxes</td>
<td>$P_{ot} = -1.43 + 1.07A_{ot}$</td>
<td>0.904</td>
</tr>
<tr>
<td>All Taxes</td>
<td>$P_{t} = -0.287 + 0.862A_{t}$</td>
<td>0.948</td>
</tr>
</tbody>
</table>

The results of these equations highlight the difficulty of making comparisons of accuracy between taxes. For example, the company income tax has a high correlation coefficient but a regression coefficient considerably
below one. 'Other Taxes' has a regression coefficient close to unity but the correlation coefficient is not very high. Both the correlation and regression coefficient for the sales tax were high. The constant term, however, was large.

Diagram XI-E shows the relationship between predicted and actual total tax revenue for the 1949 to 1964 period. The regression line indicates a bias towards under-estimation over this period. In order to determine if there was any improvement over time in predicting expenditure, the period 1949 to 1964 was divided into two sub-periods, 1949 to 1957 and 1958 to 1964. The resulting linear equations (shown in Diagrams XI-F and XI-G), are

\[
P' = -1.05 + 0.898A' \quad R = 0.956
\]

for the period 1949 to 1957, and

\[
P'' = +1.54 + 0.683A'' \quad R = 0.922
\]

for the latter period. It can be seen immediately that predictive accuracy in the first period was higher since all three characteristics of the equation are 'superior' to those of the second equation. In both time periods, the tendency in the error was towards under-estimation.

Finally, for each tax, the errors were distributed as follows.

\footnote{Correlation coefficients are significant at 90 per cent level.}
DIAGRAM XI-E

LINEAR RELATIONSHIP BETWEEN THE PREDICTED AND ACTUAL CHANGE IN TOTAL TAX REVENUE 1949-50 TO 1963-64
DIAGRAM XI-F
LINEAR RELATIONSHIP BETWEEN THE PREDICTED AND ACTUAL CHANGE IN TOTAL TAX REVENUE 1949-50 TO 1956-57

DIAGRAM XI-G
LINEAR RELATIONSHIP BETWEEN THE PREDICTED AND ACTUAL CHANGE IN TOTAL TAX REVENUE 1957-58 TO 1963-64
TABLE IX-B

TYPES OF PREDICTION ERRORS FOR PARTICULAR TAXES

<table>
<thead>
<tr>
<th>Tax</th>
<th>Over-H</th>
<th>Under-E</th>
<th>Turning Point Error</th>
<th>Perfect Prediction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Income</td>
<td>8</td>
<td>7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Company Income</td>
<td>5</td>
<td>8</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Sales</td>
<td>7</td>
<td>4</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Excise</td>
<td>5</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Customs</td>
<td>4</td>
<td>10</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Other Taxes</td>
<td>5</td>
<td>9</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>All Taxes</td>
<td>3</td>
<td>9</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

EXPENDITURES

The accuracy of predicting Commonwealth expenditures can be measured in the same way as tax revenue forecasts; by computing the relationship between predicted and actual change. The following equations are the result of regression analysis for particular expenditures. As with taxes, variation in the characteristics of the equations

TABLE XI-C

LINEAR RELATIONSHIP BETWEEN PREDICTED AND ACTUAL EXPENDITURES

<table>
<thead>
<tr>
<th>Expenditure</th>
<th>Equation</th>
<th>Correlation Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defence</td>
<td>$P_d = -0.453 + 0.955A_{d}$</td>
<td>0.992</td>
</tr>
<tr>
<td>Social Services</td>
<td>$P_w = -0.025 + 1.129A_{w}$</td>
<td>0.896</td>
</tr>
<tr>
<td>Capital Works</td>
<td>$P_k = 1.208 + 0.893A_{k}$</td>
<td>0.991</td>
</tr>
<tr>
<td>Grants to States</td>
<td>$P_s = 1.042 + 0.768A_{s}$</td>
<td>0.851</td>
</tr>
<tr>
<td>Other Expenditure</td>
<td>$P_{os} = -2.707 + 1.112A_{os}$</td>
<td>0.977</td>
</tr>
<tr>
<td>Total Expenditure</td>
<td>$P_{ex} = 0.412 + 0.858A_{ex}$</td>
<td>0.980</td>
</tr>
</tbody>
</table>

makes it impossible to rank expenditures according to their predictive accuracy. Defence spending had the

1 This is also an over-or under-estimation as well.
highest correlation coefficient and a regression
coefficient close to unity, but the absolute term is
greater than that of social service payments.

To see if there had been any improvement in
predicting total expenditure over the 1949 to 1964 period,
separate regressions were carried out for the periods 1949
to 1957 and 1958 to 1964. The results were as follows.

For the first period,
\[ P'_{ex} = 0.707 + 0.853 A'_{ex} \quad R = 0.980 \]
and for the second period,
\[ P''_{ex} = -0.318 + 0.914 A''_{ex} \quad R = 0.933 \]

The equation for the first period had the highest
correlation coefficient but the absolute term and
regression coefficient were closer to zero and unity in
the equation for the second period. Consequently, no
direct comparison of accuracy in the two periods can be
made. From Diagrams XI-J and XI-K, however, it can be
seen that in the second period, there was a strong
tendency towards under-estimation.

Finally, Table XI-D records the number of times a
particular error occurred for various expenditure
predictions.

<table>
<thead>
<tr>
<th>TABLE XI-D</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TYPES OF PREDICTION ERRORS FOR PARTICULAR EXPENDITURES</strong></td>
</tr>
<tr>
<td>Expenditure</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Defence</td>
</tr>
<tr>
<td>Social Services</td>
</tr>
<tr>
<td>Capital Works</td>
</tr>
<tr>
<td>Grants to the States</td>
</tr>
<tr>
<td>Other Spending</td>
</tr>
<tr>
<td>Total Expenditure</td>
</tr>
</tbody>
</table>
DIAGRAM XI-H

LINEAR RELATIONSHIP BETWEEN THE PREDICTED AND ACTUAL CHANGE IN TOTAL EXPENDITURE 1949-50 TO 1963-64
DIAGRAM XI-J
LINEAR RELATIONSHIP BETWEEN THE PREDICTED AND ACTUAL CHANGE IN TOTAL EXPENDITURE 1949-50 TO 1956-57

DIAGRAM XI-K
LINEAR RELATIONSHIP BETWEEN THE PREDICTED AND ACTUAL CHANGE IN TOTAL EXPENDITURE 1957-58 TO 1963-64
(c) THE COEFFICIENT OF INEQUALITY

A third method of evaluating fiscal marksmanship is to compute the coefficient of inequality described in Chapter IV. Unlike linear regression analysis, this measure does allow a comparison of fiscal accuracy between various budget items and between various time periods.

TAXES

The following table records the values of the coefficient \( U \) for particular taxes and total tax revenue forecasting.

<table>
<thead>
<tr>
<th>Tax</th>
<th>Value of ( U )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customs Duty</td>
<td>.0913</td>
</tr>
<tr>
<td>Personal Income Tax</td>
<td>.1222</td>
</tr>
<tr>
<td>Excise Tax</td>
<td>.1262</td>
</tr>
<tr>
<td>Total Tax</td>
<td>.1469</td>
</tr>
<tr>
<td>Company Income Tax</td>
<td>.1618</td>
</tr>
<tr>
<td>Other Taxes</td>
<td>.1940</td>
</tr>
<tr>
<td>Sales Tax</td>
<td>.2381</td>
</tr>
</tbody>
</table>

The fifteen year period was subdivided as in Section (b), and the value of \( U \) for total tax revenue calculated for each period. In the first period, 1949 to 1957, the value of \( U \) was 0.126. In the second period, 1958 to 1964, the value of \( U \) was 0.172. This shows that the accuracy of forecasting total tax revenue in the first period was better than in the second period.

The inequality coefficient \( U \) can be broken down into components which indicate the source of the forecasting error.¹ These components are; the proportion of the total error caused by under- and over-estimation of the average

¹ The formulae for these components is given in Section (c) of Chapter IV.
change \((U_i)\), the proportion of the total error caused by under-and over-estimation of the variance of the change \((U_j)\) and the proportion of the total error which is random \((U_m)\). For total tax revenue, the source of error are as follows. In the first period,

**TABLE XI-F**

VALUES OF THE COMPONENTS OF U

<table>
<thead>
<tr>
<th>Period</th>
<th>(U_i)</th>
<th>(U_j)</th>
<th>(U_m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1949-1957</td>
<td>0.278</td>
<td>0.017</td>
<td>0.705</td>
</tr>
<tr>
<td>1958-1964</td>
<td>0.013</td>
<td>0.431</td>
<td>0.556</td>
</tr>
</tbody>
</table>

The systematic error was caused by over- and under-estimation of the average change. In the second period, the systematic error was caused by over- and under-estimation of the variance of the change. Random error was higher in the first period.

**EXPENDITURES**

The coefficient \(U\) can be computed for expenditures as well. The values of \(U\) for various expenditures and total expenditure is recorded below.

**TABLE XI-G**

VALUES OF U FOR PARTICULAR EXPENDITURES AND TOTAL EXPENDITURE

<table>
<thead>
<tr>
<th>Expenditure</th>
<th>Value of U</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defence</td>
<td>.0666</td>
</tr>
<tr>
<td>Capital Works</td>
<td>.0750</td>
</tr>
<tr>
<td>Total Expenditure</td>
<td>.0947</td>
</tr>
<tr>
<td>Other Expenditure</td>
<td>.1189</td>
</tr>
<tr>
<td>Social Services</td>
<td>.1258</td>
</tr>
<tr>
<td>Grants to the States</td>
<td>.1642</td>
</tr>
</tbody>
</table>

The least accurate of the expenditures is estimates of grants to the states. This is primarily the result of one particular year when there was a large difference between the predicted and actual change. If this year is
omitted in the calculation of $U$, the value of $U$ is .0549, indicating a much higher degree of estimation accuracy.

As was done for total taxes, the value of $U$ was computed for total expenditure in two separate periods: 1949 - 1957 and 1958 - 1964. The value for $U$ in the first period was 0.097, and in the second period, it was 0.072. Accuracy in estimating total expenditure was higher in the later period.

The source of the error for the two periods was also computed. In the second period, systematic

<p>| TABLE XI-H |
| VALUES OF THE COMPONENTS OF $U$ |</p>
<table>
<thead>
<tr>
<th>Period</th>
<th>$U_i$</th>
<th>$U_j$</th>
<th>$U_m$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1949-1957</td>
<td>.067</td>
<td>.254</td>
<td>.679</td>
</tr>
<tr>
<td>1958-1964</td>
<td>.769</td>
<td>.000 (^1)</td>
<td>.231</td>
</tr>
</tbody>
</table>

error was relatively high, the result of under-and over-estimation of the average change. It will be recalled from Diagram XI-K that expenditure was under-estimated in every year of the second period.

(d) **SUMMARY AND CONCLUSION**

The largest errors for both tax and expenditure prediction occurred in the inflationary years 1949 to 1952. The worst performance was the sales tax which was over-estimated by 35 per cent in 1951-52. Errors in personal was company income tax predictions were approximately ten and 15 per cent in 1950-51 and 1951-52 respectively. The overall tendency was to under-estimate. Absolute errors for most tax and expenditure items were less in the second than in the first period.

\(^1\) The numerator of the formula for $U_j$ is $(s_p - s_A)^2$, and in this case, both standard deviations were the same.
Measuring accuracy by linear regression indicated that the degree of accuracy in forecasting total tax revenue was higher in the first period than in the second, despite the substantial errors in forecasting individual tax revenues. This can be explained by the fact that these large errors tended to 'cancel' each other so that on average, the forecast of total tax revenue was fairly accurate. The regression analysis also showed that there was a definite tendency to under-estimate predictions during the 1949-64 period, confirming the results arrived at in Section (a). In the case of expenditures, the characteristics of the regression equations do not indicate if predictive accuracy was better in the first or second period. They do, however, indicate a tendency to under-estimate expenditure predictions in both periods.

Theil's inequality coefficient for total tax revenue confirms the result of the regression analysis: predictive accuracy was higher in the first period. A breakdown of the coefficient reveals that 71 per cent of the error in the first period was random compared to 56 per cent in the second period. For expenditure, the coefficient indicated higher predictive accuracy in the second period. Again, random error was highest in the first period.

Aside from the particular conclusions about predicting various tax revenues and expenditures, the above analysis is important for another reason. In Chapter V, the separation of discretionary and automatic components of tax revenue was carried out, in most cases, by using government estimates of the effect discretionary tax changes on revenue. When the errors were relatively large, some adjustment was made to the actual revenue data. Given that most of the errors were less than ten
per cent, the use of government estimates of the revenue
effect of discretionary tax changes seems a reasonable
approximation of their actual effect.
PART IV

CONCLUSION
The purpose of this thesis was to appraise the performance of fiscal stabilisation policies between 1948 and 1964. In other words, to what extent did these policies prevent, or at least mitigate, undesired fluctuations in prices and employment? In an open economy, there is the problem that fiscal policies may have been directed towards external rather than internal stability. It is generally recognised that post-war fiscal policies in Australia were often directed towards restoring external balance. Such policies were, however, also directed towards the internal instabilities accompanying external imbalance. It was therefore possible to concentrate on the internal effects of these policies.

In Part I of this thesis, the fiscal policies adopted by the Commonwealth between 1948 and 1964, and the major economic events surrounding these policies, were briefly outlined. From this historical sketch, there is little doubt that the internal instabilities in prices and employment were caused by a variety of factors. Indeed, each period of instability appears to have been precipitated by a unique series of events. The nature of the fiscal policies employed to counter these instabilities varied considerably, with taxation policy emerging as a major instrument of policy. The early post-war blueprint for stability, which highlighted the use of expenditures, was apparently an insufficient and inflexible means of achieving stability.

The major analytical techniques used in this study to appraise fiscal performance were based on a static
Keynesian framework. The shortcomings of this type of analysis are well known, but, aside from a highly sophisticated econometric fiscal model, it is felt that this approach provided the most reasonable estimate of fiscal performance. It is possible that an econometric model would have fallen short of providing a framework for analysis, given the problems involved in constructing such a model for an open economy. In addition, such a model may only be able to provide reliable information about average behaviour. With the approach used here, it was possible to compare the relative effects on the level of demand of discretionary and automatic policy in different periods of instability. Supplemented by information on time lags, particular response functions and the forecasting competency of the Commonwealth, a fairly comprehensive appraisal of fiscal performance was possible.

The first chapter of Part II of the thesis was devoted to the theoretical analysis underlying the use of a budget result as an indicator of performance. There, it was demonstrated that a budget result, the components of which were weighted by their first round responding coefficient, could provide a reasonable indication of the impact of changes in the budget on the level of aggregate demand. The weighted budget result could also, it was shown, be reconciled, in part, with Hansen's rigorous conditions for using such a budget result to indicate fiscal performance.

Part II was also concerned with the question of separating discretionary and automatic fiscal policy.

---

1 For a criticism of the static approach, see D.J. Smyth's note and D.A.L. Auld's reply, forthcoming in the Economic Record.
It was shown that the conceptual distinction between automatic and discretionary changes in taxes was not difficult to apply given that an automatic change in revenue is one occurring under given legislation. For expenditures, the distinction was not quite so clear since it was recognised that some expenditures may incorporate an implicit built-in factor. If, however, the analysis is confined to expenditures which are based on a formula or a fixed rate of payment, the distinction between automatic and discretionary changes is not difficult to make. The convention of treating government expenditure as discretionary is in general, not realistic. For purposes of measuring built-in flexibility, careful attention must be given to the factors which determine the built-in change. In the case of taxes, these were mainly economic, whereas with expenditure, they were mainly demographic.

As far as discretionary changes were concerned, one of the problems was to decide on a criterion by which to evaluate the stabilising performance of discretionary changes in expenditure. In a growing economy, it did not seem reasonable to expect, as an indicator of good stabilising performance, an absolute decline in real expenditures during inflation. It was suggested that a more reasonable criterion would be to judge certain expenditure changes on the basis of deviations from some long run, increasing trend. Criteria, based on trends, were therefore established by which discretionary changes in certain expenditures could be evaluated in a stabilisation context.

The final Chapter of Part II dealt with three separate aspects of fiscal policy which would enhance the measurement of performance. The first section of
Chapter IV outlined the lags which had to be measured if the time between a need for discretionary policy and the impact of a policy change was to be determined. A simple econometric technique for measuring part of the outside lag was described. In the second section, a method of testing for the relationship between consumption, income and taxes was outlined. This was to be carried out by the application of simple least squares regression to changes in the above-mentioned variables. The results of these functional relationships would, it was hoped, give some idea of the response by consumers to changes in taxation. The third aspect of fiscal policy, discussed in Chapter IV, was fiscal marksmanship, or the predictive accuracy of Commonwealth budget forecasts. After briefly outlining the importance of predictive accuracy, it was shown how three statistical techniques could be used to measure fiscal marksmanship.

Part III was devoted to the application of the techniques described and discussed in the preceding three chapters. These empirical investigations, combined with the more general outline of fiscal policy in Part I, give a detailed indication of the performance of fiscal policy. In Chapter V, several techniques, using the weighted budget result, were employed to indicate fiscal policy performance in particular years, as well as providing a measure of average performance over the sixteen year period. During the recession years, it was found that the impact of the budget on the level of aggregate demand was expansionary. The impact of the budget was deflationary in five of the seven years of inflation. Looking at the budget impact more closely, it was found that the stabilising performance of built-
in tax change was better during inflation than in recession years. Discretionary tax policy was, for the most part, stabilising. Changes in real budget expenditure, which were considered discretionary in this particular framework, were significantly expansionary in two recessions. In periods of inflation, real expenditures increased in all but one of the seven years. The problem of evaluating expenditure changes was discussed in Chapter III where it was felt that, on allocative grounds, it was perhaps too restrictive to expect an absolute reduction in real expenditures during inflation. An alternative criterion for evaluating expenditure changes was proposed, and this was applied in Chapter VI.

The analysis in Chapter VI, along with portions of Chapter I, indicated clearly that certain expenditures were used as stabilisation measures between 1948 and 1964. The only specific, anti-recession expenditures were additional assistance grants to the states and certain public works. The rates of unemployment benefits were revised upwards in each recession. The alternative criterion for evaluating total expenditure change was to establish a growth trend and observe deviations from this trend. Given the particular criterion set out in Chapter VI, expenditure changes were stabilising in each year except one during the 1955 to 1964 period. The absence of any trend prior to 1955 precluded the application of this criterion to the earlier period.

It was mentioned above that discretionary tax policies were stabilising most of the time. Chapter VII, which was an appraisal of the stabilising performance of each major Commonwealth tax, showed that the personal
income and sales tax were used frequently as counter-cyclical measures. The sales tax was destabilising only once, and the personal income tax only twice. On these three occasions, the tax change was made for some purpose other than stabilisation. The excise and company income tax, although not used as often as other taxes, were almost always proposed as measures to achieve internal stability. The payroll tax, which was altered four times, was always stabilising.

The stabilising effectiveness of built-in tax flexibility during recessions was inadequate. The poor performance of the personal and company income tax was partly explained by the lag between tax accrual and tax payment. In addition, the mild nature of the recessions did not always induce a decline in tax liability during periods of recession. Performance was better during periods of inflation. Automatic changes in expenditures were considered briefly in Chapter VIII. During recession years, their record of performance was good. This was naturally the case for unemployment benefits which responded primarily to fluctuations in economic activity. Other expenditures, such as grants to the states and social service payments, increased in real terms most of the time. During inflation, the automatic change in social service payments was deflationary while the change in grants to the states was inflationary.

The time lags involved with fiscal policies were measured and discussed in Chapter IX. The estimated lengths of the various lags for taxation and expenditure policies were recorded in Section (c). Although the length of the lag between the need for discretionary policy and the initial impact on some goal was not, for
some policies, too long, there could well have been some destabilising effect on economic activity as a result of the continuing impact which these changes may have had on demand. The fact that anti-inflationary policies, introduced after the peak of a boom, were followed by recessive tendencies in the economy, suggests this possibility. Finally, with the exception of the recognition lag, the inside lags appear to have been short. Unfortunately, little is known about the length of the recognition lag since the timing of political decisions of this nature are highly confidential.

The econometric analysis presented in Chapter X provided information about the response of consumer spending to tax changes. Not all the relationships furnished clear-cut answers. Some, however, did indicate a significant relationship between tax changes and changes in consumption. This was sufficient to imply that changes in the personal income and sales tax were effective short-run stabilisation measures.

On the question of fiscal marksmanship, the results of the analysis in Chapter XI suggest that, aside from the inflation of the late nineteen-forties and early nineteen-fifties, the predictions of the Commonwealth about revenue and expenditure were reasonably good. The calculation of average errors over the period indicated that the estimates of the revenue effects of discretionary tax changes were probably of the correct general order of magnitude.

The overall performance of fiscal stabilisation policy between 1948-49 and 1963-64 was not outstanding. Neither was it a complete failure, as the measurement of average and long run performance in Chapter V indicated. It is evident, that, without fiscal action in certain
years, a severe recession would most likely have developed. Credit must be given to the Commonwealth's flexible use of taxation policy as a stabilisation tool. Only a short time had elapsed before the Commonwealth set aside its immediate post-war, expenditure-orientated plan for stability, and substituted, to a large extent, tax policies. Between 1949 and 1963, there were twenty-six changes in taxation made for the purpose of achieving internal stability. After the early nineteen-fifties, the allocative importance of a steady rise in a number of public expenditure categories became apparent, and expenditure, in a stabilisation context, was used chiefly to offset rising unemployment.

Discretionary policies, both expenditure and tax, were, at times, late and of insufficient or excessive magnitude. Built-in changes in budget components, especially tax changes during recession, were not always stabilising. Nevertheless, the economy, over the sixteen year period was able to expand at a rate of growth close to its potential. To what extent fiscal stabilisation policies affected the potential output through their effect on the allocation of resources has yet to be determined.
APPENDIX A

ESTIMATES OF DOMESTIC COMMONWEALTH BUDGET EXPENDITURE IN REAL 1948-49 DOLLARS FOR PERIOD 1948-49 TO 1963-64

Current Expenditures

Table 1 of this appendix provides a partial breakdown of Commonwealth budget expenditure as set out in the August 1966 Supplement to the Treasury Information Bulletin and the Australian National Accounts 1948-49 to 1964-65. The former publication provides fairly detailed information for the 1953-54 to 1963-64 period. The corresponding data for 1948-49 to 1952-53 was obtained from various tables in the latter publication. Other sources of data were employed in deriving an estimate of domestic expenditure. These sources and a description of the current expenditures items are presented in Table A-1 as follows.

Item 1  Expenditure on defence; derived from the two main sources noted above.

Item 2  Imports of munitions: This was obtained from various issues of the C.B.C.S. Monthly Review of Business Statistics 1952-1966.

Item 3  Other Overseas Defence Spendings: This was a residual obtained by subtracting overseas expenditure on embassies, trade missions, etc. from overseas government transactions. The former were obtained from the actual expenditure of the departments concerned found in Estimates of Receipt and Expenditure, submitted to Parliament by the Administrator of the Commonwealth. The latter can be found in Table 69 of the Australian National Accounts.

Item 4  Domestic Defence Expenditure; item 1 less items 2 and 3.

Item 5  Other Departmental Expenditures; derived from the two major sources noted above.

Item 6  Overseas Departmental Expenditure; see item 3.

Item 7  Domestic Departmental Expenditure; see item 5 less item 6.

Item 8  Social Welfare Payments: Australian National Accounts, Table 68.
Item 9 Repatriation Benefits; see item 8.

Item 10 Other Cash Benefits; item 11 minus 8 and 9.

Item 11 Commonwealth Cash Benefits; derived from two major sources noted above.

Item 12 Grants to the States; derived from the two major sources. In the National Accounts 1948-49 to 1963-64, the grants are divided into current and capital grants and are recorded in two tables (nos 37 and 60).

Item 13 Commonwealth Interest Payments; derived from Table 57 of the National Accounts. This is a net interest paid to the private sector for incurred Commonwealth Liability.

Item 14 Commonwealth Interest Payments Overseas: The figure here is the average of two years interest liability as recorded in Table 12 of Government Securities on Issue of 30th June, 1966.

Item 15 Commonwealth Domestic Interest Payments; item 13 less item 14.

Item 16 Subsidies and Grants to the Private Sector; derived from two major sources noted above.

Item 17 Commonwealth Overseas Payments; derived from two major sources noted above.

Item 18 Total Commonwealth Current Expenditure.

Item 19 Direct Overseas Expenditure: This is the total of items 2, 3, 6, 14 and 17.

Item 20 Import Content of Government Current Expenditures: This was estimated by applying the annual ratio imported intermediate goods to the aggregate of gross national expenditure defence spending, departmental spending and states grants. The ratio varied between .082 and .159 during 1948-49 to 1963-64 period.

Item 21 Current Domestic Expenditures: Item 18 less 19 and 20. This may slightly over-estimate domestic spending since there is no estimate of the portion of grants to the states which is direct overseas expenditure. Assuming this does not fluctuate extensively from year to year, the annual changes in domestic expenditure are not seriously affected.

Capital Expenditures

Capital budget expenditures for 1953-54 to 1963-64 were taken from the Treasury Information Bulletin Supplement. For earlier years, certain adjustments were made to the National Accounts 1948-49 to 1964-65 data in
order to link them with the 1953-54 to 1963-64 data. These adjustments are noted below. Total capital expenditure is recorded on Table A-2 of this appendix.

**Item 1** Fixed Capital Expenditure on New Assets: For 1948-49 to 1952-53, this was estimated by subtracting from the total expenditure figure in Table 75 of the National Accounts, the following: development of resources and assistance to industry, civil aviation, power, fuel and light and hostels. As a check, this was also done for 1953-54 to 1963-64 and the result closely approximated the Treasury Information Bulletin statistics.

**Item 2** Net Loans to States for Capital Works and Housing: Treasury Information Bulletin and Tables 12 and 40 of Commonwealth Payments To Or For The States, 1965-66. A small adjustment is required in the earlier figures which is explained in the Supplement to the Treasury Information Bulletin, August 1965.

**Item 3** Other Loans for Capital Works: Most of this expenditure in the early period (1948-49 to 1952-53) was for the Snowy Mountains Authority and War Service Homes. The appropriate expenditures on a basis comparable to the 1953-54 to 1963-64 figures, were obtained from Budget papers 1948-49 to 1953-54.

**Item 4** Total Budgetary Capital Expenditure.

**Item 5** Import Content of Capital Expenditures: This was estimated in the same manner as the import content of certain current expenditure.

**Item 6** Domestic Capital Expenditures.

**Real Expenditures**

Real expenditures, both capital and current were determined in the following manner. Total domestic current expenditure less cash payments to persons were deflated by the implicit price index of current expenditure by public authorities, using 1948-49 as a base year. The index was derived from Tables 10 and 11 of the Australian National Accounts 1948-49 to 1964-65. This figure is recorded as item 2 of Table A-3 of this appendix. Cash payments to persons were deflated by the Consumer Price Index, the result being recorded as item 1 of Table A-3. Capital expenditures were deflated by
the implicit price index of public fixed capital expenditure, derived from the *Australian National Accounts*, Tables 10 and 11. The deflated expenditures are recorded as items 4 to 6 of Table A-3. Item 8 is total current plus capital domestic expenditure in real terms.
<table>
<thead>
<tr>
<th>TABLE A-1</th>
<th>COMMONWEALTH CURRENT BUDGETARY EXPENDITURE 1948-49 TO 1963-64 (m$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Defence</td>
<td>84</td>
</tr>
<tr>
<td>2. Munitions</td>
<td>6</td>
</tr>
<tr>
<td>3. Other Overseas</td>
<td>28</td>
</tr>
<tr>
<td>4. Domestic Defence</td>
<td>50</td>
</tr>
<tr>
<td>5. Other Departmental</td>
<td>96</td>
</tr>
<tr>
<td>6. Overseas</td>
<td>6</td>
</tr>
<tr>
<td>7. Domestic Departmental</td>
<td>90</td>
</tr>
<tr>
<td>9. Repatriation</td>
<td>57</td>
</tr>
<tr>
<td>10. Other</td>
<td>10</td>
</tr>
<tr>
<td>11. Total 8-10</td>
<td>219</td>
</tr>
<tr>
<td>12. Grants to States</td>
<td>157</td>
</tr>
<tr>
<td>13. Interest Payments</td>
<td>95</td>
</tr>
<tr>
<td>15. Domestic Payments</td>
<td>87</td>
</tr>
<tr>
<td>16. Subsidies</td>
<td>63</td>
</tr>
<tr>
<td>17. Overseas Grants</td>
<td>35</td>
</tr>
<tr>
<td>18. Total Spending</td>
<td>749</td>
</tr>
<tr>
<td>19. Overseas</td>
<td>83</td>
</tr>
<tr>
<td>20. Import Content</td>
<td>39</td>
</tr>
<tr>
<td>21. Domestic Spending</td>
<td>627</td>
</tr>
</tbody>
</table>

357
TABLE A-2
COMMONWEALTH CAPITAL BUDGETARY OUTLAY, 1948-49 TO 1963-64 ($m.)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Fixed Capital</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expenditure on</td>
<td>39</td>
<td>52</td>
<td>72</td>
<td>84</td>
<td>87</td>
<td>78</td>
<td>83</td>
<td>104</td>
<td>116</td>
<td>122</td>
<td>128</td>
<td>143</td>
<td>153</td>
<td>172</td>
<td>183</td>
<td>198</td>
</tr>
<tr>
<td>New Assets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Net Loans to</td>
<td>112</td>
<td>162</td>
<td>296</td>
<td>428</td>
<td>350</td>
<td>370</td>
<td>328</td>
<td>350</td>
<td>354</td>
<td>368</td>
<td>380</td>
<td>398</td>
<td>404</td>
<td>440</td>
<td>458</td>
<td>488</td>
</tr>
<tr>
<td>States for</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital Works</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>and Housing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Other Loans</td>
<td>25</td>
<td>34</td>
<td>62</td>
<td>76</td>
<td>83</td>
<td>66</td>
<td>79</td>
<td>86</td>
<td>96</td>
<td>104</td>
<td>128</td>
<td>118</td>
<td>90</td>
<td>106</td>
<td>94</td>
<td>92</td>
</tr>
<tr>
<td>4. Total Capital</td>
<td>176</td>
<td>248</td>
<td>430</td>
<td>588</td>
<td>520</td>
<td>514</td>
<td>490</td>
<td>540</td>
<td>566</td>
<td>594</td>
<td>636</td>
<td>659</td>
<td>647</td>
<td>718</td>
<td>735</td>
<td>778</td>
</tr>
<tr>
<td>Expenditure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Estimated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Import Content</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>of Capital</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlay</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Domestic</td>
<td>22</td>
<td>30</td>
<td>62</td>
<td>93</td>
<td>47</td>
<td>49</td>
<td>50</td>
<td>58</td>
<td>55</td>
<td>57</td>
<td>57</td>
<td>62</td>
<td>66</td>
<td>59</td>
<td>66</td>
<td>72</td>
</tr>
<tr>
<td>Capital Spending</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital Spending</td>
<td>154</td>
<td>218</td>
<td>368</td>
<td>495</td>
<td>473</td>
<td>465</td>
<td>440</td>
<td>482</td>
<td>511</td>
<td>537</td>
<td>579</td>
<td>597</td>
<td>581</td>
<td>659</td>
<td>669</td>
<td>706</td>
</tr>
<tr>
<td>as a Proportion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>of Total</td>
<td>.21</td>
<td>.24</td>
<td>.28</td>
<td>.32</td>
<td>.27</td>
<td>.27</td>
<td>.26</td>
<td>.26</td>
<td>.26</td>
<td>.26</td>
<td>.25</td>
<td>.25</td>
<td>.23</td>
<td>.23</td>
<td>.23</td>
<td>.22</td>
</tr>
</tbody>
</table>
## TABLE A-3
CURRENT AND CAPITAL DOMESTIC BUDGET EXPENDITURES
($m.)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Current</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(cash benefits)</td>
<td>369</td>
<td>377</td>
<td>584</td>
<td>502</td>
<td>548</td>
<td>563</td>
<td>587</td>
<td>631</td>
<td>648</td>
<td>699</td>
<td>765</td>
<td>818</td>
<td>910</td>
<td>1009</td>
<td>1025</td>
<td>1150</td>
</tr>
<tr>
<td>(1948-9 $s)</td>
<td>369</td>
<td>345</td>
<td>473</td>
<td>332</td>
<td>332</td>
<td>334</td>
<td>340</td>
<td>351</td>
<td>340</td>
<td>363</td>
<td>392</td>
<td>409</td>
<td>437</td>
<td>483</td>
<td>489</td>
<td>544</td>
</tr>
<tr>
<td>2. Current</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(goods/services)</td>
<td>258</td>
<td>345</td>
<td>468</td>
<td>609</td>
<td>754</td>
<td>729</td>
<td>751</td>
<td>825</td>
<td>889</td>
<td>928</td>
<td>997</td>
<td>1074</td>
<td>1159</td>
<td>1292</td>
<td>1365</td>
<td>1481</td>
</tr>
<tr>
<td>(1948-9 $s)</td>
<td>258</td>
<td>314</td>
<td>349</td>
<td>381</td>
<td>426</td>
<td>401</td>
<td>391</td>
<td>399</td>
<td>413</td>
<td>418</td>
<td>449</td>
<td>442</td>
<td>460</td>
<td>505</td>
<td>523</td>
<td>537</td>
</tr>
<tr>
<td>3. Current</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1948-9 $s)</td>
<td>627</td>
<td>659</td>
<td>822</td>
<td>713</td>
<td>758</td>
<td>735</td>
<td>731</td>
<td>750</td>
<td>753</td>
<td>781</td>
<td>841</td>
<td>851</td>
<td>897</td>
<td>988</td>
<td>1012</td>
<td>1081</td>
</tr>
<tr>
<td>4. Capital</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(on assets in</td>
<td>34</td>
<td>42</td>
<td>50</td>
<td>49</td>
<td>49</td>
<td>42</td>
<td>42</td>
<td>51</td>
<td>55</td>
<td>58</td>
<td>60</td>
<td>65</td>
<td>67</td>
<td>73</td>
<td>76</td>
<td>80</td>
</tr>
<tr>
<td>1948-9 $s)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Capital</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(loans for state capital works in 1948-9 $s)</td>
<td>97</td>
<td>131</td>
<td>205</td>
<td>246</td>
<td>196</td>
<td>198</td>
<td>169</td>
<td>169</td>
<td>174</td>
<td>177</td>
<td>180</td>
<td>174</td>
<td>186</td>
<td>189</td>
<td>196</td>
<td></td>
</tr>
<tr>
<td>6. Capital</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(other loans in 1948-9 $s)</td>
<td>23</td>
<td>27</td>
<td>43</td>
<td>45</td>
<td>47</td>
<td>34</td>
<td>40</td>
<td>41</td>
<td>48</td>
<td>51</td>
<td>61</td>
<td>56</td>
<td>36</td>
<td>45</td>
<td>39</td>
<td>38</td>
</tr>
<tr>
<td>7. Total Capital</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1948-9 $s)</td>
<td>154</td>
<td>200</td>
<td>298</td>
<td>340</td>
<td>292</td>
<td>274</td>
<td>251</td>
<td>261</td>
<td>272</td>
<td>283</td>
<td>298</td>
<td>301</td>
<td>307</td>
<td>304</td>
<td>304</td>
<td>314</td>
</tr>
<tr>
<td>8. Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1948-9 $s)</td>
<td>781</td>
<td>859</td>
<td>1120</td>
<td>1053</td>
<td>1050</td>
<td>1009</td>
<td>982</td>
<td>1011</td>
<td>1025</td>
<td>1064</td>
<td>1139</td>
<td>1152</td>
<td>1174</td>
<td>1292</td>
<td>1316</td>
<td>1395</td>
</tr>
</tbody>
</table>
## APPENDIX B

### CALCULATION OF THE CHANGE IN THE VALUE OF LEVERAGE* (1948-49 m.$)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ge</td>
<td>179</td>
<td>221</td>
<td>278</td>
<td>308</td>
<td>315</td>
<td>278</td>
<td>271</td>
<td>290</td>
<td>292</td>
<td>281</td>
<td>303</td>
<td>293</td>
<td>302</td>
<td>317</td>
<td>331</td>
<td>355</td>
</tr>
<tr>
<td>2. Gi</td>
<td>87</td>
<td>81</td>
<td>70</td>
<td>55</td>
<td>47</td>
<td>42</td>
<td>35</td>
<td>32</td>
<td>23</td>
<td>17</td>
<td>14</td>
<td>14</td>
<td>10</td>
<td>7</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. Gb</td>
<td>63</td>
<td>40</td>
<td>68</td>
<td>43</td>
<td>31</td>
<td>28</td>
<td>27</td>
<td>20</td>
<td>21</td>
<td>23</td>
<td>26</td>
<td>24</td>
<td>33</td>
<td>44</td>
<td>38</td>
<td>52</td>
</tr>
<tr>
<td>5. Gs</td>
<td>157</td>
<td>184</td>
<td>189</td>
<td>204</td>
<td>208</td>
<td>210</td>
<td>211</td>
<td>213</td>
<td>228</td>
<td>245</td>
<td>257</td>
<td>267</td>
<td>284</td>
<td>313</td>
<td>327</td>
<td>325</td>
</tr>
<tr>
<td>6. G1</td>
<td>137</td>
<td>189</td>
<td>289</td>
<td>345</td>
<td>267</td>
<td>258</td>
<td>233</td>
<td>237</td>
<td>238</td>
<td>247</td>
<td>261</td>
<td>258</td>
<td>237</td>
<td>252</td>
<td>251</td>
<td>258</td>
</tr>
<tr>
<td>7. G</td>
<td>799</td>
<td>890</td>
<td>1194</td>
<td>1162</td>
<td>1099</td>
<td>1059</td>
<td>1039</td>
<td>1075</td>
<td>1129</td>
<td>1206</td>
<td>1220</td>
<td>1235</td>
<td>1361</td>
<td>1396</td>
<td>1479</td>
<td></td>
</tr>
<tr>
<td>8. Gm</td>
<td>(import content)</td>
<td>61</td>
<td>71</td>
<td>109</td>
<td>136</td>
<td>72</td>
<td>71</td>
<td>74</td>
<td>80</td>
<td>74</td>
<td>74</td>
<td>74</td>
<td>74</td>
<td>77</td>
<td>84</td>
<td>82</td>
</tr>
<tr>
<td>9. G'</td>
<td>738</td>
<td>819</td>
<td>1085</td>
<td>1026</td>
<td>1027</td>
<td>988</td>
<td>965</td>
<td>995</td>
<td>1014</td>
<td>1055</td>
<td>1132</td>
<td>1143</td>
<td>1171</td>
<td>1289</td>
<td>1314</td>
<td>1393</td>
</tr>
<tr>
<td>10. Tc</td>
<td>(73)</td>
<td>(73)</td>
<td>(66)</td>
<td>(93)</td>
<td>(86)</td>
<td>(75)</td>
<td>(93)</td>
<td>(106)</td>
<td>(107)</td>
<td>(94)</td>
<td>(94)</td>
<td>(107)</td>
<td>(144)</td>
<td>(130)</td>
<td>(107)</td>
<td>(132)</td>
</tr>
<tr>
<td>12. R</td>
<td>(-7)</td>
<td>(-9)</td>
<td>(-9)</td>
<td>(-9)</td>
<td>(-1)</td>
<td>(+4)</td>
<td>(+6)</td>
<td>(+3)</td>
<td>(+10)</td>
<td>(+14)</td>
<td>(+20)</td>
<td>(+31)</td>
<td>(+48)</td>
<td>(+48)</td>
<td>(+71)</td>
<td>(+80)</td>
</tr>
<tr>
<td>14. Ml</td>
<td>+130</td>
<td>+247</td>
<td>326</td>
<td>239</td>
<td>311</td>
<td>272</td>
<td>251</td>
<td>238</td>
<td>212</td>
<td>217</td>
<td>328</td>
<td>254</td>
<td>183</td>
<td>314</td>
<td>324</td>
<td>278</td>
</tr>
<tr>
<td>16. L2</td>
<td>1004</td>
<td>1306</td>
<td>1142</td>
<td>890</td>
<td>911</td>
<td>1378</td>
<td>769</td>
<td>1319</td>
<td>1361</td>
<td>+550</td>
<td>+42</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. L1</td>
<td>+302</td>
<td>-164</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. M = weighted budget result or multiplicand.
2. L = fiscal leverage
* Brackets signify component value after multiplication by the appropriate expending coefficient, (if coefficient is not unity).
APPENDIX C

COMPONENTS OF THE MULTIPLICAND
(As Set Out in Appendix B)

Item 1 (G_e). Commonwealth expenditures in Australia on goods and services. This figure is composed of item 4 and 7 of Table A-1 and item 1 of Table A-2 from Appendix A deflated by the indices described in the third section of Appendix A.

Item 2 (G_1). Commonwealth interest payments in Australia is the same as item 15 of Table A-1.

Item 3 (G_b). Subsidies and grants to the private sector is the same as item 16 of Table A-1.

Item 4 (G_p). Cash Benefits to persons excluding subsidies. This is the same as item 11 of Table A-1. This and the values of G_1 and G_b above were deflated by the consumer price index.

Item 5 (G_s). Grants to the states is the same as item 12 of Table A-1 deflated by an index of current government expenditure.

Item 6 (G_i). Loans for states works and housing and other loans for capital expenditure. This is the aggregate of items 2 and 3 of Table A-2 deflated by an index of public capital expenditure.

Item 7 (G). Total Commonwealth expenditure in Australia after applying appropriate responding coefficients to transfer components of multiplicand.

Item 8 (G_m). The import content of Commonwealth expenditure was estimated by applying the ratio

\[
\frac{\text{import of intermediate goods}}{\text{gross national expenditure}} = \frac{G_e + G_s + G_1}{G_e + G_s + G_1}
\]

Item 9 (G'). Item 7 less item 8. This may slightly over-estimate domestic spending since the direct overseas
spending portion of grants to the states is not known. Assuming that such payments do not fluctuate extensively from year to year, this does not affect the annual change in expenditure.

Item 10\(T_c\). Company income tax payments deflated by an index of gross private investment.

Item 11\(T_o\). Other taxes (excluding customs duties).

Import duties are excluded because whether they affect aggregate demand for domestic output, and in what way, depends on the aggregate price elasticity of demand for imports. The exclusion of import duties amounts to an implicit assumption that this elasticity is close to unity. \(T_o\) was deflated by the consumer price index.

Item 12\(R\). This is net operating surplus (deficit) of Commonwealth business enterprises and it is treated as a tax (subsidy).

Item 13\(T_o'\). Item 11 plus item 12.
APPENDIX D

COEFFICIENTS OF RESPENDING

Associated with each variable in the multiplicand, there is a first-round coefficient of responding, i.e., the proportion of a given change in the variable that would be channelled into or removed from the economy's spending stream. For example, a coefficient of 1.0 attached to the variable 'transfers to persons' simply indicates that if the recipient of such transfers receives an increase, 100 per cent of the increase will be spent on domestic goods. Responding coefficients are discussed more fully in chapter II.

Commonwealth government expenditures and grants or advances for expenditure have a self-explanatory coefficient of one. The import leakage has been accounted for in item 8 of Appendix B. Transfers to business are undertaken to ensure that certain expenditures do take place and it is assumed that the subsidy or assistance enters directly into this expenditure. Transfers to persons, in most cases, are directed to those people having a high propensity to spend the entire transfer; so again a coefficient of one is applied. In the absence of any empirical information regarding responding of government interest receipts, we have assumed a coefficient of 0.5 Loans for capital works have been assigned a coefficient of one.

The company tax presents a different problem to that of expenditures or transfers. The most important assumption made here is that the company tax is not shifted. If full forward-shifting were assumed, the
change in tax revenues for companies could be included with all other taxes. If the tax is not shifted, however, there is a strong case for assigning a separate responding coefficient varying with economic conditions. The reaction of spending to a tax change is assumed to depend primarily on two factors: (a) the availability of investment funds external to companies, and (b) the actual trend in real investment. In this analysis, coefficients of 0.45, 0.50 and 0.55 will be assigned to the company tax depending upon the conditions outlined in (a) and (b). The 0.45 coefficient of responding will be used when there appears to be an adequate supply of outside funds, as indicated by the position of major trading banks, interest rates and the extent to which companies rely upon external funds for investment. An accompanying condition for this coefficient would be an overall weak trend in investment by companies. Under such conditions, the years 1952-53 and 1958-59 would qualify for this coefficient.

A coefficient of 0.50 will be employed in two cases: (i) where the availability of funds is accompanied by a strong investment trend, and (ii) where a restricted supply of external funds is concomitant with a weak trend in company investment. The years 1949-51, 1953-55, 1959-60 and 1962-64 qualify for a coefficient under (i), and the years 1951-52, 1956-58 and 1961-62 qualify with respect to conditions described by (ii).

Finally, a coefficient of 0.55 is assigned when a strong trend in company investment is paralleled by tight money conditions. This combination of factors was evident in 1955-56 and 1960-61.

For the variable representing all other taxes a coefficient of 0.8 was assigned. This is approximately the marginal propensity to purchase domestically-produced
consumption goods out of personal disposable income. It is recognised that the responding coefficient in this case may vary slightly, depending on the specific tax and prevailing economic conditions. Since the bulk of these taxes fall on consumers, the responding coefficient 0.8 is a good estimate of the coefficient here.
The disposable income multiplier, $k$, was derived by first calculating $b$ in the equation

$$C = a + b \cdot Yd$$

where $C$ is the consumption of Australian-produced goods and $Yd$ is personal disposable income plus undistributed company profit. The coefficient $b$ is then the marginal propensity to consume domestically-produced goods out of disposable income and implicitly excludes the marginal propensity to import consumption and intermediate goods.

The inclusion of undistributed profits may be justified on two grounds. If we assume that such profits are substantially capitalised, the resulting capital gains or losses will have an effect on consumption. Alternatively, this can be viewed as a means of accounting for the marginal leakage into undistributed profits as a result of an increase in spending.

From the regression equation, using constant-value data, the estimate of $b$ is 0.7616 and the resulting multiplier $(1/1-b)$ is 4.194. The correlation coefficient is 0.9695, significant at the 95 per cent level.

The multiplier value of 4.2 was used in all years. This, of course, is an oversimplification since the actual multiplier will most probably vary from year to year. This procedure, however, does not detract from the general insight gained from examining the relative effects of fiscal variables in each recession and recovery.
APPENDIX F

FISCAL PERFORMANCE GIVEN ALTERNATIVE ASSUMPTIONS REGARDING CERTAIN RESPENDING COEFFICIENTS

The responding coefficients associated with \( G_i \) and \( T_c \) (interest payments and company tax payments respectively), are not based on any empirical evidence, and it is possible that alternative coefficients may better represent the first round responding for these budget components. It can be argued, for example, that since most interest payments are paid to finance companies, banks and insurance companies, they have little or no impact on demand. The responding coefficient should therefore be zero. Furthermore, it might be argued that part or all of the company tax is shifted forward to consumers. In this case, part or all of the company tax should be included with other taxes in the multiplicand. In the case of the unshifted company tax, it could be argued that the responding coefficient should be constant on the grounds that a change in the availability of external funds is not an important determinant of company spending.

In order to consider some of these alternatives, the weighted budget result is calculated given the following assumptions: ¹

(a) a zero responding coefficient for interest payments,
(b) the company income tax is fully shifted forward to consumers,
(c) the coefficient of the company income tax is a constant value at .5.

These new assumptions will affect the value of the weighted budget result and the change in leverage. The

¹ Combinations of these alternative assumptions or other assumptions could also be examined.
task here is to determine the extent to which these new assumptions affect the measurement of fiscal performance.

Assumption (a)

In making this assumption, interest payments are excluded from the multiplicand. This reduces the absolute value of the multiplicand, but tends to increase the magnitude of the positive changes and reduce the size of the negative changes since domestic interest payments steadily declined over the 1948-1964 period.

Assumption (b)

In order to calculate the change in the multiplicand under this particular condition, the company income tax was treated as 'other taxes'. The effect of this alternative assumption was to reduce the absolute size of the multiplicand since a higher responding coefficient (0.8) was now applied to the company income tax which hitherto was subject to a coefficient value between 0.45 and 0.55.

Assumption (c)

This condition did not have a substantial effect on the absolute value of the weighted budget result.

In order to demonstrate the effect which the above alternative assumptions have on the measurement of fiscal performance, the value of \( \frac{1}{4} \), under these new conditions, was calculated for the recession and recovery years. For the inflation years, the percentage change in the weighted budget result, given the new assumptions, is compared with the percentage change under original conditions. These values are recorded in Table F-1.

The values of \( \frac{1}{4} \), given the alternative assumptions, are similar to the values of \( \frac{1}{4} \) given the original assumptions as set out in
Appendix D. Only in 1957-58 and 1962-63 was there some significant difference in the values. In these two years, the assumption of a shifted company tax leads to a measure which clearly indicates better performance than under the original assumptions. In the inflation years, the percentage changes in the weighted budget result (multiplicand) were in the same direction, regardless of the assumptions given above. Under alternative assumptions (a) and (c), there was a slight tendency for worse performance than under the original assumptions. In summary, then, the alternative assumptions regarding responding coefficients do not appear to substantially alter the qualitative appraisal of fiscal performance found in Chapter V.

TABLE F-1
MEASURES OF FISCAL PERFORMANCE GIVEN ALTERNATIVE RESPONDING COEFFICIENTS

<table>
<thead>
<tr>
<th>Year</th>
<th>Original Value of $</th>
<th>Value of $ Given Assumption</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(a)</td>
<td>(b)</td>
</tr>
<tr>
<td>1952-53</td>
<td>0.72</td>
<td>0.73</td>
</tr>
<tr>
<td>1953-54</td>
<td>1.05</td>
<td>1.06</td>
</tr>
<tr>
<td>1957-58</td>
<td>0.10</td>
<td>0.17</td>
</tr>
<tr>
<td>1958-59</td>
<td>1.16</td>
<td>1.18</td>
</tr>
<tr>
<td>1961-62</td>
<td>0.85</td>
<td>0.86</td>
</tr>
<tr>
<td>1962-63</td>
<td>0.31</td>
<td>0.35</td>
</tr>
</tbody>
</table>

B. Inflation Years

<table>
<thead>
<tr>
<th>Year</th>
<th>Original Percentage Change in Weighted Budget Result</th>
<th>Percentage Change Given Assumption</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(a)</td>
<td>(b)</td>
</tr>
<tr>
<td>1949-50</td>
<td>+90.</td>
<td>+134.</td>
</tr>
<tr>
<td>1950-51</td>
<td>+32.</td>
<td>+41.</td>
</tr>
<tr>
<td>1955-56</td>
<td>-5.2</td>
<td>-2.5</td>
</tr>
</tbody>
</table>
APPENDIX G
TEMPORAL DISTRIBUTION OF THE REVENUE EFFECT OF
DISCRETIONARY TAX CHANGES USED IN CHAPTER X

Personal Income Tax

The Treasury's estimate of the revenue effect of a change in personal income tax legislation is usually given on a current year and full year basis since budgetary changes (for P.A.Y.E. taxpayers) are in effect for less than the full current financial year. The deflated revenue effects presented in Chapter I are those for the current year. This is the estimate used in the annual regression equations. For the quarterly equations, these estimates are applied in three equal parts to the December, March and June quarters following the change in tax policy. For the February 1962 tax change, the revenue effect for March to June 1962 is estimated at $20m. or $5m. per month in the remaining months of 1961-62.1 The rebate would continue to cost $3m. per month in 1962-63. Spreading the impact over three quarters of the year meant applying $5m. in the March 1962 quarter, $15m. in the June quarter, $9m. in the September quarter and $6m. in the December quarter.

Sales Tax

The distribution of the revenue effect of discretionary sales tax changes was carried out in a similar manner. For the March 1956 increase, one-third of the estimated effect was applied to each of the June, September and December quarters of 1956. On the annual data basis, one-third of the impact was recorded in

1 See Chapter VII.
1955-56 and two-thirds in 1956-57. For the November 1960 increase, one-third of the effect was applied in the December 1960 quarter and two-thirds in the March 1961 quarter since the measure was withdrawn in March, 1961.
A. ARTICLES, BOOKS AND UNPUBLISHED MANUSCRIPTS REFERRED TO IN THE THESIS.


Arndt, and B. Cameron, 'An Australian Consumption Function' E.R., April, 1957.


---, Inflation and the Australian Economy, Melbourne: Address to Trades Hall Council, November 16, 1950.


Downing, R.I., National Income and Social Accounts, Melbourne University Press, 1965. (Although this publication is not referred to explicitly in the thesis, it was a useful guide during the initial stages of my research).


---, Unemployment in Australia, Eighth School of Business Administration, Adelaide, 1963.


Hutchison, B., Mr Prime Minister, Toronto; Longmans, 1964.


B. COMMONWEALTH OF AUSTRALIA PUBLICATIONS

Annual

Budget Speeches, 1948-49 to 1965-66 inclusive.


Commonwealth Payments to or For the States 1963-4 to 1965-6

Estimates of Receipts and Expenditures for the Year Ending 30th June, 1948 to 1964.


The Australian Economy, 1957 to 1964.

Report of the Commissioner of Taxation 30th to 44th Reports.

Quarterly


Other

Full Employment in Australia, 1945.

C. PUBLICATIONS OF THE COMMONWEALTH BUREAU OF CENSUS AND STATISTICS

Annual


Quarterly


Monthly