

AN EXAMINATION OF PROFITABILITY  
ASSESSMENT  
BY  
THE PRICES JUSTIFICATION TRIBUNAL

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PREFACE

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### ABSTRACT

"Many major accounting problems deal with aspects of income measurement. In the analysis of these problems accounting suffers from the lack of a clear-cut, operational definition of income based on a well-defined objective."\*

One such problem with which accounting must deal is the measurement of the profitability of an enterprise for the purpose of prices investigation by Governmental regulatory authorities. The aim of this project is to examine profitability assessment by the Australian Prices Justification Tribunal in its public inquiries.

The project commences with a review of the methods of profitability assessment used by price regulatory authorities in the United Kingdom, the United States of America, New Zealand and Australia. The most popular indicators of a company's profitability are found to be accounting rates of return.

The accounting rate of return is examined with the aim of establishing the most appropriate definition of the ratio for the purpose of prices justification. There are important differences between various definitions of the rate of return, and no single definition will suffice for the one purpose. The analysis suggests that four major ratios, with specific definitions of the numerator and denominator, should be examined for any one company.

The use and interpretation of the accounting rate of return is investigated in each of the public inquiries held by the Tribunal in its first seventeen months of operation (until the end of 1974). It is found that the Tribunal utilises the Industries Assistance Commission and Reserve Bank profitability ratio series for comparisons

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\* Bierman, H. Jr., and Davidson, S., "The Income Concept - Value Increment or Earnings Predictor", *Accounting Review*, Vol. XLIV No. 2, April 1969, p. 239.

with a company's level of profits. However, the Tribunal's reliance on companies' definitions of the rate of return results in a diverse set of ratios being accepted for the one purpose - prices justification. This research shows that the Tribunal is inconsistent in its use of the Industries Assistance Commission and Reserve Bank series, and in several comparisons, the definitions of the companies' rate of return do not conform with those of the guidepost series.

Comparisons using a rate of return measure can be severely distorted by traditional historical cost accounting conventions, and by the irregular patterns of asset revaluations carried out by companies in Australia. The Industries Assistance Commission and Reserve Bank series are distorted by these factors, and the Tribunal does not attempt to adjust either series to eliminate the distortion. A method is devised to restate on a "current-value basis" the accounting data of several companies that have appeared before the Tribunal. These current-value results are compared with the ratios that would be presented, to the Tribunal, from company annual reports. Additionally, a current-value guidepost series is developed from Reserve Bank data, and compared with the companies' adjusted current-value ratios. This analysis shows that the use of current-values in profitability ratios may change, to a considerable extent, the pricing decisions made by the Tribunal.

The "internal rate of return" (IRR) is examined as an alternative measure of profitability for prices justification. The conceptual relationship between the accounting rate of return (ARR) and the IRR is investigated, and it is concluded that, under some conditions, the ARR will approach the IRR. However, more empirical research is necessary if appropriate adjustments to the ARR are to be discovered

that will assist in estimating the IRR from accounting data.

Chapter six summarises the main findings of the project and outlines several recommendations on profitability assessment for prices justification that arise from the research.

It is hoped that at least a small part of accounting will be improved by this analysis of one of the problems with which accounting must deal.

## INTRODUCTION

It is a matter of observation that the products of accounting are intended to be useful. There is a wide range of potential users of accounting information - investors, creditors, managers, stock-brokers, lawyers, and governmental authorities - to name but a few. Australian governmental investigatory agencies, such as the Industries Assistance Commission and the Prices Justification Tribunal make use of accounting data in their respective investigations. The former tends to use such data in their inquiries, for example in measuring the funds employed in, and the profitability of, the production and marketing of goods under reference.<sup>1</sup> The latter uses accounting data in its function to "inquire and report ... whether the price at which a company ... supplies or proposes to supply goods or services of a particular description is justified and, if the Tribunal is of the opinion that the price is not justified, what lower price for the supply by the company of goods and services of that description would be justified".<sup>2</sup>

Professor Vatter considers that "the best - if not the only - way in which accounting can be improved is by analysis of those problems with which accounting must deal".<sup>3</sup> The need for accounting data by governmental investigatory authorities is one such problem with which accountants must deal. It is contended here that, by examining some

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1. For example, see Tariff Board Report, *Tariff Revision, Agricultural, Horticultural, etc. Machinery*, 19 June, 1970 (Commonwealth of Australia) p.6 and Appendix E.
  2. Prices Justification Act 1973 (Australia). Government Printer of Australia, section 16.
  3. Vatter, W.J., "Income Models, Book Yield and Rate of Return", *Accounting Review*, Vol. XLI No.4, October 1966, p.681.

aspects of the use and interpretation of accounting data by this type of authority, proper focus may be placed on the validity or otherwise of existing accounting data for this particular use. If the old adage, "one learns by one's mistakes", is to be believed in, then both the governmental authorities using the data and, indeed, the accountants who produce it, may benefit from this task.

The specific aim of this project is to examine profitability assessment by the Prices Justification Tribunal in its public inquiries.

## CHAPTER 1

### PRICE REGULATORY AUTHORITIES

Several governmental authorities in Britain and the United States of America have relied on accounting data in public inquiries. The Monopolies and Restrictive Practices Commission,<sup>1</sup> established in 1948, the National Board for Prices and Incomes (N.B.P.I.) (1965-1970), and more recently the Price Commission provide examples in Britain. In October 1971, the United States Government created the Price Commission to conduct a price-control program as part of the "Phase 2" anti-inflation measures. With the exception of the Monopolies Commission, these investigatory agencies were directly concerned with controlling the prices charged by companies. The Monopolies Commission has also been involved in appraising the price level established by dominant organizations. Since these bodies have had a vast experience with very similar problems facing the Prices Justification Tribunal in Australia, an investigation into the use made of accounting data and measures by these authorities appears relevant to this project. This chapter provides this background, against which the performance of the Prices Justification Tribunal can be judged.

#### BRITISH EXPERIENCE

##### *The Monopolies Commission*

The Monopolies Commission has regarded the rate of return on capital as the most significant test of economic performance.<sup>2</sup> This measure has been calculated as a means of assessing the profitability

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<sup>1</sup> Reconstituted as the Monopolies Commission (1956), and now the Monopolies and Mergers Commission (1974).

<sup>2</sup> Rowley, C.K., "The Monopolies Commission and Rate of Return on Capital", *Economic Journal*, Vol. LXXIX No.313, March 1969, p.42.

of the companies under investigation. The rate of return has always been calculated from accounting data provided by the companies, and the Commission has attempted to establish a guidepost of *average profits/capital employed* for manufacturing industry, against which the company return may be assessed. Considerable attention has been paid to guidepost development and to the validity of the comparisons of the companies' returns, and the guidepost.

The accounting rate of return is by no means a simple or unambiguous measure. This has been shown in several reports of the Monopolies Commission, and the need for a clearly defined concept is apparent from mistakes in early reports. For example, the denominator of the rate of return (capital employed) has been defined in different ways, but used for the same purpose. In the *Report on the Supply of Dental Goods* (1950) capital employed was defined as:

"Net assets comprising fixed and current assets used in the business (but not goodwill), less current liabilities and provisions. The amount of capital employed has been computed by taking the average of the net assets at the beginning and end of the period concerned, at the values shown by the balance sheets."<sup>3</sup>

The following year, in the *Report on the Supply of Electric Lamps* (1951), capital employed was defined differently:

"The capital employed has been computed at the terminal accounting dates in the relevant years and it is the amount of net assets, comprising the cost of fixed assets less, in appropriate cases, wear and tear allowances (as allowed for income tax but excluding the initial allowances), and current assets used in the business less current liabilities and provisions."<sup>4</sup>

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<sup>3</sup> Monopolies and Restrictive Practices Commission, *Report on the Supply of Dental Goods*, HMSO, 1 December 1950, Appendix 29.

<sup>4</sup> Monopolies and Restrictive Practices Commission, *Report on the Supply of Electric Lamps*, HMSO, 4 October 1951, p.73.



Thus in the report on Dental Goods, the balance sheet values of net fixed assets (i.e. excluding depreciation) as computed by the company was accepted in capital employed, and an average calculated for the year. In the Electric Lamps case, fixed assets were valued at original cost less taxation depreciation allowances, and calculated as at the end of the accounting period. In both cases the numerator of the rate of return (net profit) was calculated by deducting costs of production and operating expenses from net sales. Operating expenses included provision for stock obsolescence, lease amortization, value for owner-occupiers (in lieu of rent) and directors' remuneration. Provisions for income tax, interest on borrowed money, and transfers to general reserves were not included as operating expenses, and income derived from trade investments, subsidiary companies and royalties were excluded from income.

Between 1950 and 1955, each case before the Monopolies Commission was considered without reference to a rate of return guidepost, and with calculations made from the historical data supplied by companies. From 1956 onwards, the Commission developed an average rate of return for manufacturing industry in the United Kingdom. The guideposts have varied considerably over the years from 1956 to the present time. This evolution can be conveniently divided into several series of calculations of the rate of return guidepost.

#### Series 1 ("Historical Cost" 1956-1960).

The first rate of return guidepost was based on an historical cost valuation of the assets included in capital employed and the depreciation allowed as a deduction from net profit. The guidepost adopted was an adjusted weighted average rate of return on capital of over 2000 public companies as prepared from statistics of

industrial profits and assets published in *The Economist*. Capital employed was defined as total assets less outside investments, goodwill, current liabilities and provisions. Profit was published company profit before taxation plus interest on loans and overdrafts, and after deducting one-half of non-recurring profit (to eliminate the tax component) and any non-trading items.

Series 2 ("Historical Cost and Replacement Cost Conglomeration" 1961-1965).

In 1961, the Monopolies Commission developed and used an alternative guidepost. The basis for the compilation of this series was the *Economic Trends* statistics of the Board of Trade, which covered 3000 companies quoted on United Kingdom Stock Exchanges. In 1966, the Commission became dissatisfied with this data, which had been later described as a "... hotchpotch of historic-cost and replacement-cost valuations of capital and depreciation ...".<sup>5</sup>

Series 3 ("Purified Historical Cost" 1966-1970).

In the early 1960's a growing number of companies had revalued their fixed assets on a replacement cost basis, and the Monopolies Commission became increasingly conscious that the data in the rate of return on capital calculations compiled from *Economic Trends* (Series 2) were open to criticism. In 1966, the Commission derived figures of the average rate of profits on capital for manufacturing industry on an historic cost basis from the *Economic Trends* data used in Series 2. At the same time, they calculated a replacement cost series (Series 4) from this new historic cost series. Series 3

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<sup>5</sup> Rowley, C.K., *op.cit.* p.45.

was constructed by obtaining information of revaluation adjustments carried out by individual companies from 1954 to 1963 and estimating the revaluations between 1950 and 1953. It was assumed that no asset revaluations had been carried out before 1950. Thus the *Economic Trends* figures were reconstructed by excluding the yearly increments resulting from company revaluations, and a "purified" historic cost series developed.

Capital employed related only to trading capital, and had been calculated as follows:-

- (a) all tangible trading assets were included;
- (b) trade and other investments were excluded, (and the relevant income excluded from profits);
- (c) trade and sundry creditors had been deducted from tangible trading assets;
- (d) loans, bank overdrafts, provisions for future taxation and provisions for dividends had been included in capital employed. Adjustments were made for interest charges on loans and bank overdrafts in arriving at trading profits.<sup>6</sup> This series was used in reports from 1966-1970. However, from 1968 onwards, it was not the exclusive benchmark. A replacement-cost series had been created at the same time as Series 3 and from 1968, this new series became the preferred guidepost.

#### Series 4 ("Replacement Cost" 1968-1970).

The Commission used Series 3 to calculate average profit rates on a replacement cost basis. Asset values in 1946 (including land)

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<sup>6</sup> These definitions were disclosed in The Monopolies Commission, *A Report on the Supply of Metal Containers*, 10 July, 1970, Appendix 4.

were increased by 100% - the estimated general price level increase from 1938 to 1946. From 1946 onwards, price indices for buildings, plant and machinery, and vehicles were applied on an annual basis, with adjusting calculations for net assets purchased in the relevant year. Land was not revalued. Profits were adjusted to allow for the higher replacement cost depreciation. In 1968, the Monopolies Commission accepted that the replacement cost series was more satisfactory than the historic cost series. However, in the same 1968 report, they showed an unwillingness to discard historical costs altogether. "The historical cost of fixed assets can, however, be determined with more certainty than their 'replacement cost' at a particular point in time, and for this reason we think it an advantage to obtain and record the figures on the historic cost basis as a check upon those calculated on a replacement cost basis."<sup>7</sup> Series 3 and 4 were used in reports throughout 1968 and 1969.<sup>8</sup>

Series 5 and 6 ("Revised Historical and Replacement Costs" 1970 - ).

The 1970 report on Metal Containers<sup>9</sup> revealed two new series of profits/capital employed - an historical cost series and a replacement cost series. These resulted from more detailed information published by the Board of Trade, and from a revision of previous methods of calculation by the Monopolies Commission. Land was now

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<sup>7</sup> The Monopolies Commission, *A Report on the Supply of Flat Glass*, 7 February, 1968, HMSO, London, pp.107-108.

<sup>8</sup> For example, the Monopolies Commission, *A Report on the Supply of Clutch Mechanisms for Road Vehicles*, 12 December, 1968, HMSO, London (both Historical Cost and Replacement Cost bases used); and *A Report on the Supply and Exports of Cigarette Filter Rods*, 23 July, 1969, (Historical Cost basis only).

<sup>9</sup> *Report on the Supply of Metal Containers*, *op.cit.*, Appendix 4.

revalued; and separate indices were computed for each of 17 main industrial classifications. The definitions of 'profit' and 'capital employed' as used in developing Series 3 and 4 were maintained.

Recent reports of the Monopolies Commission indicate that historical cost and replacement cost series containing revised estimates for average U.K. manufacturing industry are being used. A number of reports in 1973 contained analysis using an historical cost series only.<sup>10</sup> However, the preference for replacement costs was confirmed in November, 1973, when the Monopolies Commission suggested to British Rope Limited that "... inclusion of the fixed assets revalued to show the current replacement costs would provide a truer measure of the Group's profitability in relation to capital employed".<sup>11</sup> (Table 1.1 (over) shows the Monopolies Commission's several series as described in this chapter).

A deviation from both historical costs and replacement costs was made in 1974 when the Commission calculated capital employed on a "price-level adjusted" basis and made appropriate adjustments to the annual depreciation charges.<sup>12</sup> This was undertaken for individual

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<sup>10</sup> The Monopolies Commission, *Report on the Supply of Asbestos and Certain Asbestos Products*, 23 January, 1973; *Report on the Supply and Exports of Machinery for the Manufacture of Footwear*, 2 May, 1973; and *Report on the Proposed Merger of British Match Corporation Limited and Wilkinson Sword Limited*, October, 1973.

<sup>11</sup> The Monopolies Commission, *Report on the Supply and Exports of Wire Rope and Fibre Rope and Cordage*, 20 November, 1973, p.62.

<sup>12</sup> The Monopolies Commission, *Report on the Supply of Certain Cross Channel Car Ferry Services*, 10 April, 1974, pp.35-39.

Table 1.1

The Monopolies Commission Rate of Return Guideposts

YEAR	Series 1	Series 2	Series 3	Series 4	Series 5	Series 6	1973* Series
1950		20.9					
1951	19.4	22.2	23.3	16.0			
1952	15.4	17.1	18.2	12.0			
1953	16.6	17.6	18.4	12.5			
1954	17.2	18.2	19.1	13.6			
1955	17.3	18.0	18.8	13.8			
1956	16.5	16.4	17.1	12.5			17.1
1957	15.4	15.5	16.2	11.9			
1958	14.1	14.2	14.9	10.9			
1959	15.7	15.3	15.9	12.2			
1960	15.5	15.8	16.6	13.1			
1961	13.2	13.3	14.0	11.1			14.2
1962		11.8	12.5	9.9	12.4	9.5	
1963		12.7	13.4	10.7	13.3	10.2	
1964			14.7	12.0	14.6	11.4	
1965			13.9	11.5	13.9	10.7	
1966			12.3	9.9	12.1	9.2	12.0
1967			12.3		12.1	9.4	12.0
1968					13.9	11.0	13.4
1969							12.5
1970							11.5
1971							12.5

\* This historical cost based series appeared in Monopolies Commission Reports relating to Asbestos (23/1/73), Footwear Machinery (2/5/73) and Wire and Fibre Ropes (20/11/73).

companies and a general series was not developed. The definitions of profits and capital employed have also varied from case to case in recent reports. For example, in the British Match Corporation-Wilkinson Sword merger report, capital employed was calculated from balance sheet data at year ends and consisted of the sum of fixed assets, long-term investments at book values, and current assets less current liabilities. Bank loans and overdrafts were treated as long-term funds.<sup>13</sup> In the Car Ferry Service Report, capital employed was stated as the average of opening and closing figures for each year. Whether such differences are due to the individualistic nature of the companies accounting method is difficult to discern. However, no attempt was made to compare the companies in these reports with an overall industry average.

The Monopolies Commission has made quite clear which definition of the rate of return on capital employed it is using at any one time. Furthermore, the Commission has developed guideposts relating to varied asset valuation bases and has recognized the value of using alternatives to historical cost accounting, such as replacement costs. The comparisons made between profitability on reference goods and the averages of manufacturing industry have been to place the company profitability in some general perspective before any judgement is made. Every effort has been made to ensure that such comparisons have been valid - from the point of view of the definitional consistency of the components in the rate of return and the valuation methods used by companies for the fixed asset and depreciation calculations.

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<sup>13</sup> Report on proposed merger - British Match Corporation, *op.cit.*, p.7 and p.13.

*The National Board for Prices and Incomes*

The 1965 White Paper "Prices and Incomes Policy" contained criteria for application by the National Board for Prices and Incomes (N.B.P.I.). The criteria strongly emphasized the need for a return on investment measurement. The White Paper stated that enterprises would not be expected to raise their prices except where:-

- (1) capital, labour or other costs such as materials, fuel, services or marketing costs per unit of output had unavoidably increased and could not be offset by a reduction in the rate of return sought on investment or by other cost reductions; and
- (2) the enterprise is unable to secure the capital required to meet home and overseas demand.

Thus a lowering of the rate of return on capital was seen as an alternative to raising prices. However, the White Paper gave no guidance on how the rate of return or an enterprise's profitability was to be assessed.

In its enquiries, the N.B.P.I. examined companies' rates of return on capital employed over a period of time to isolate seasonal, cyclical and long-term trends. Rates of return were used to indicate whether or not firms were attempting to increase profit rates above some "usual" level that had been maintained in the past. There were two main questions to be dealt with in assessing profit rates:-

- (a) Was the level of return on capital employed reasonable? and
- (b) Would new investment be reduced if a price increase was not given?

These questions were partly answered by comparing the profit rates of firms under inquiry with a rate for the whole economy. This was the main method of profit assessment until August 1967. A change was made in the Inquiry into Portland Cement Prices when the N.B.P.I.



assessed the price increase by reference to a comparison between discounted rates of return and the cost of capital.<sup>14</sup> However, the discounted cash flow approach was not consistently applied in assessing a company's profits, and until November 1969, only two inquiries referred to this method.<sup>15</sup> Other inquiries during this period used the rate of return on capital as the major indicator of the firm's profitability.

The denominator of the rate of return, capital employed, was normally defined to include share capital, reserves, long-term loans and liabilities (including bank overdrafts). Assets not productively employed were excluded (for example, outside investments). Goodwill was accepted as an asset in capital employed, providing the calculations of comparative figures also included goodwill. In some cases it was excluded.<sup>16</sup>

The Monopolies Commission examined the question of asset valuation to a far greater extent than did the N.B.P.I. In N.B.P.I. enquiries, an historical cost approach to asset valuation was usually accepted, although if a company or industry had substituted replacement values for book values of fixed assets, the replacement values were examined. Otherwise no attempt at revaluation was undertaken.<sup>17</sup>

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<sup>14</sup> N.B.P.I. Report No. 38, *Portland Cement Prices*, August, 1967, HMSO, London, p.13.

<sup>15</sup> See N.B.P.I. Report No. 66, *Butyl Rubber*; and Report No. 100, *Synthetic Organic Dyestuffs and Organic Pigments Prices*.

<sup>16</sup> For example, N.B.P.I. Report No. 154, *Tea Prices*, August, 1970, p.12.

<sup>17</sup> Fels, A., *The British Prices and Incomes Board*, University of Cambridge, Department of Applied Economics, Occasional Paper No. 29, 1972, p.207.

The rate of return for a company or an industry was compared with an average level for industry generally. The Monopolies Commission's averages were usually employed in N.B.P.I. comparisons - especially Series 3 and 4 (and revisions thereto). Fels points out that the measurement problems in making such comparisons were often insuperable, "... no matter which type or types of measure of capital employed were available".<sup>18</sup> Other problems encountered with the measurement of the rate of return included the question of allocation of capital employed in multi-product firms where the inquiry was related to specific products. Such problems increased the difficulties of making inter-firm and inter-industry comparisons. Thus the N.B.P.I. had not evolved any specific criteria for judging a company's rate of return on capital employed; and had not developed benchmarks and explicit definitions as the Monopolies Commission had done before them. However, the N.B.P.I. had pioneered the use of a new concept of profitability assessment for a British investigatory authority - that of the discounted return on new investment.

The new approach, adopted in 1969, was directed to discovering if a price increase was necessary to make an essential future investment project profitable. An "essential" project was one that was required to meet the demand for a company's products. The approach adopted in measuring the profitability was to compare the estimated rate of return at the present price level and the cost of financing the project. If the rate of return was less than the percentage cost, then a price rise would be considered so as to cover the cost and an allowance for risk.

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<sup>18</sup> *ibid.*, p.214.

In using the discounted cash flow method, the N.B.P.I. relied mainly on company or industry estimates for the data required. The Board expressed the opinion that the "... Discounted Cash Flow (D.C.F.) method is the only one which gives proper weighting to the phasing of capital expenditure and revenue and the length of life of projects".<sup>19</sup> The N.B.P.I. used two different methods to determine the cost of capital. One method was to compute the cost of alternative sources of capital available to the industry and determine the weighting of each source.<sup>20</sup> There were several problems encountered here - especially with calculating the cost of equity finance. The N.B.P.I. used an average return (net of taxes and inflation) which a portfolio investor had received over the past 30 to 40 years, as prepared by Merrett and Sykes.<sup>21</sup> The second method of estimating the cost of capital was to obtain an opinion from merchant bankers. This was used in two inquiries and seemed to lack justification in principle.<sup>22</sup> Once the cost of capital had been determined, it was compared with the postulated return on investment and a decision made as to whether a price rise would be granted.

Thus the N.B.P.I. used an "accounting rate of return" as a profitability indicator during most of its years of existence. But the Board's approach to the "new investment test" was an enlightened

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<sup>19</sup> N.B.P.I. Report No. 133, *Portland Cement Prices*, November, 1969, p.12.

<sup>20</sup> For example, see N.B.P.I. Report No. 38, *op.cit.*, p.13, Report No. 100, *op.cit.*, p.11 and Report No. 133, *op.cit.*, p.13.

<sup>21</sup> Merrett, A.J. and Sykes, A., "Return on Equities and Fixed Interest Securities: 1919-1966", *District Bank Review*, June, 1966, No. 158, p.29.

<sup>22</sup> Fels, A., *The British Prices and Incomes Board*, *op.cit.*, p.219.

one; and although the calculations of the return on new investment and the cost of capital were only rough estimates and not used in a consistent manner, the venture into discounted cash flow techniques was a first for a governmental authority. However, this rate of return was employed for "new" investment and not for investigating the past or present profitability of a company or a product for which an accounting rate of return was used.

### *Price Commission*

The Price Commission, established in 1973, was required to administer the price code. The first principle of the Code is "... to limit the extent to which prices may be increased on account of increased costs, and to secure reductions as a result of reduced costs ..."<sup>23</sup> The Counter Inflation Act 1973, which set up the Price Commission has proceeded in three separate stages. Stage 1 enforced a "freeze" on prices and profits. Stage 2<sup>24</sup> constrained manufacturers from exceeding the average of the best two of the preceding five years of the *net profits/sales* ratio. The allowable costs which firms could pass on in price increases were defined; and productivity deductions made. Departures from these limits were allowed if the Price Commission was satisfied that such a modification was necessary in order to encourage investment. The Commission was to have regard to the following criteria in making a decision for relaxation of the limits:-

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<sup>23</sup> Price Commission, *Report for the period 1 March to 31 May, 1974*, HMSO, London, p.1.

<sup>24</sup> The following brief account of the Stage 2 provisions is a summary of the Code as set out in "The Counter-Inflation Programme. The Operation of Stage Two", Cmnd. 5267, HMSO, London.

- "(i) whether there is satisfactory evidence that if this is done the investment will take place; and
- (ii) whether the application of the limits would:-
  - (a) deprive the enterprise of funds essential for investment which it could not reasonably be expected, or would not be able, to raise in some other way; or
  - (b) reduce the prospective rate of return on the investment to a level which would deter the enterprise from undertaking it; or
- (iii) whether there is satisfactory evidence that the enterprise had absorbed cost increases to an exceptional degree as a result of voluntary price restraint and in consequence had significantly reduced profit margins in the twelve months ending 30 September, 1972."<sup>25</sup>

There was also provision for the relief of low profits if firms were below the benchmarks set under the Code. If the net profit margin represented a return on capital of less than 5%, the firm could calculate the level of net profits necessary to provide such a return, and charge prices accordingly. An alternative measure to the 5% return on capital could be used at the option of the company. This was a 1% net profit margin on turnover. Stage 2 provisions also included a gross margins control on the distributive trades.

Stage 3 provisions<sup>26</sup> made some amendments to the Stage 2 Code but were similar in concept. Stage 3 introduced a twelve month period within which new investment must commence if a price increase or profit margin modification was granted under the new investment allowances. The low profit relief provisions were modified to an 8%

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<sup>25</sup> *ibid.*, section 74.

<sup>26</sup> The following account is a summary of the Code as set out in "The Price and Pay Code for Stage 3. A Consultative Document", Cmd. 5444, HMSO, London.

level of the return on capital or a  $1\frac{1}{2}\%$  net profit margin on turnover.

A safeguard to prevent an excessive reduction of profit margins, due to impact costs or productivity deductions, provided that enterprises may limit that reduction to one-tenth below the level in the period before the base date in calculating a permitted price increase.

Capital had been defined as the "... net assets employed excluding any part of them which is represented by borrowings...".<sup>27</sup> Net profit was that profit "... determined in accordance with generally accepted accounting principles consistently applied by the enterprise concerned, which arises from trading operations in the United Kingdom after taking into account all expenses of conducting and financing them, including depreciation and interest on borrowed money, but before deducting Corporation Tax or Income Tax".<sup>28</sup>

In November 1974, a major revision of the Price Code was produced to vary the Stage 3 provisions.<sup>29</sup> The new investment provisions allowed firms to recoup  $17\frac{1}{2}\%$  of capital expenditure by increasing their prices and net profits. The Code also maintained the provisions relating to a modification of the limits where a firm would be deprived of funds essential for investment; or where the rate of return limit would deter the company from continuing with the investment. Restriction of price increases would be eased if the return on capital was less than 10% or the net profit margin on turnover was less than 2%. In calculating the rate of return, the following statement on the valuation of assets was made:-

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<sup>27</sup> "The Price and Pay Code: A Consultative Document", Cmnd. 5247, HMSO, London, p.9.

<sup>28</sup> *ibid.*, p.8.

<sup>29</sup> The following account of the revision of the Code is summarized from "Review of the Price Code: A Consultative Document", Cmnd. 5779, HMSO, London.

"The value of the assets concerned shall be determined in accordance with generally accepted accounting principles consistently applied by the enterprise concerned but should be based on the historic costs of the assets except that where, in annual accounts for a year ended on or before 30 September, 1972, the enterprise has revalued an asset the value may be based on the value of the asset shown in these accounts".<sup>30</sup>

Substantial changes were made to safeguard against the erosion of profit margins. The new Code placed limits on profit margin reduction, but emphasized that any price increase under such provision be limited to the profit reference level.

Thus the Price Code, administered by the Price Commission, has concentrated heavily on profit and investment provisions. Profit margins, net profits and capital employed have been defined, and allowable cost increases carefully specified. Asset valuation, which affects the capital employed calculation has been considered. However, the allowance of a departure from historical cost (for firms who revalued their assets before 30 September, 1972) would result in inconsistencies in applying the limits. For example, a firm that carried out a substantial revaluation before 1972 may show a much lower rate of return on capital employed than a firm who remained on an historic-cost basis, even though their respective rates of return had been similar before the revaluation had been carried out. This was the major reason for the change to Series 3 ("Purified" Historical Cost) and Series 4 (Replacement Cost) by the Monopolies Commission in 1966. It would appear then, that even with this major emphasis on profits and capital in the Price Code, the investigations into bases for measuring these two elements has been minor compared to the work carried out by the Monopolies Commission, who used the return on capital as only one indicator in their judgements.

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<sup>30</sup> *ibid.*, section 68, p.26.

## U.S.A. EXPERIENCE<sup>31</sup>

### *Price Commission*

Price control in the United States of America commenced in August, 1971 when a 90 day price freeze was announced. Towards the end of the freeze ("Phase 1") a report, prepared by the accountants in the Commerce Department of the U.S. government, listed the basic alternative directions that the price-control program may take. Briefly, these were:-

- (1) Companies may raise prices only by the dollar amounts of increased costs.
- (2) Companies may raise prices to maintain formulated percentage margins.
- (3) Price increases would be limited to cost-reimbursement or margin-maintenance on individual products.
- (4) A product's price may be raised by some specified fixed percentage.
- (5) Companies must limit profits - either to a particular dollar amount or to a particular level of the return on investment.

These considerations led to a programme based on profit margin control and cost justification. The basic proposition was that prices could not increase unless costs had increased, and the price rise would be limited to a specified pre-tax profit margin (as a percentage of sales). The ceiling decided upon was the average of the best two margins of the proceeding three fiscal years before

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<sup>31</sup> The following analysis of the U.S. experience has been made by mainly referring to: Jackson Grayson Jr., C., "Controlling Prices is an Educational Experience", *Fortune*, Vol. LXXXVI, No. 4, October 1972, pp.76-79 and pp.180-188, and Straszheim, Donald H., "Before-Tax Profit Margin Guidelines and Phase 2 Pricing Policy", *Financial Analysts Journal*, March/April 1972, Vol. 28, No. 2, pp.27-32 and pp.83-85.



15 August, 1971. Allowable cost increases were reduced to reflect productivity gains. The regulations also provided relief for firms that had losses or low profits in the base years. For companies in this category, a formula was developed that linked the pre-tax profit margin to capital turnover (*net sales/long-term debt plus equity*). The lower the turnover ratio, the higher the profit margin that was allowed.

In calculating justifiable costs, companies were required to offset part of their higher labour costs with productivity gains. Initially, the Price Commission allowed companies to develop their own measures of productivity. However, it was found that companies were understating their productivity, and in May 1972 companies were required to use standard productivity trends developed by the Commission. The Chairman of the Price Commission has expressed the view that the use of such industry norms have given companies "... a powerful new incentive to do something about their productivity : by doing better than the industry norm, a company can increase its profitability".<sup>32</sup>

Phase 3 profit controls were similar to the Phase 2 conventions. Phase 4 introduced a profit per unit of output freeze. These regulations allowed firms to pass on in prices, their cost increases on a dollar-for-dollar basis, after allowing for productivity gains as calculated in the Phase 2 rules. Additionally, the profit margin ceilings continued to operate. Thus money profits would increase only if sales increased.<sup>33</sup>

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<sup>32</sup> Jackson Grayson Jr., C., *op.cit.*, p.180.

<sup>33</sup> Fels, A., "Rules on Profitability under Various Prices and/or Income Schemes", Unpublished Prices Justification Tribunal Paper, 13 December, 1974, p.20.

The United States price controls, which were discontinued early in 1974, were based mainly on before-tax profit margin guidelines. There was little reliance on a "return on investment" measure, and any limitation on the return on investment was seen as a danger to new investment proposals. The scheme provided that large firms notify the Commission of any proposed price increase and file quarterly reports on prices, costs and profits. Proposed price increases were then judged on the basis of cost justification which incorporated productivity allowances, and a "normal" profit margin ceiling which a company could not exceed. This limited United States experience had been a simple and flexible approach to prices justification.

#### NEW ZEALAND EXPERIENCE<sup>34</sup>

New Zealand has a continuous history of price control since 1947.<sup>35</sup> The 1974 New Zealand regulations relating to the stabilization of prices emphasized a maximum profit ceiling as the main feature of prices control. The ceiling established was based on a four year average of the profit before tax to sales ratio. If the limit was exceeded, firms were either required to reduce prices or apply for approval to retain the "excess" profits. Several considerations entered into the decision to allow an enterprise to retain these excess profits. Briefly, these were:-

- (1) that the profits were necessary to sustain an approved program of capital expansion, to effect improvements in productivity, or to provide for investment in the national interest;

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<sup>34</sup> Fels, A., *ibid.*, has been used as the basis for the following summary of New Zealand experience.

<sup>35</sup> For example, "The Control of Prices Act 1947" (and amendments 1947, 1958, 1969, 1970, 1971). New Zealand Government Printer, Wellington, New Zealand.

- (2) that improvements in productivity had been achieved;
- (3) that compliance with the maximum profit ceiling would adversely affect the financial stability of the enterprise; and
- (4) that changes in the structure of the enterprise rendered the maximum profit ceiling unreasonable.

The New Zealand regulations thus emphasized a profit to sales ratio as the main controlling feature. Safeguards were built into the maximum ceiling to allow firms to show that profit in excess of the limit were necessary to stimulate investment or productivity. However, profits were not related to investment and a rate of return on capital employed was not used as a measure of profitability in these price controls.

#### AUSTRALIAN EXPERIENCE

Apart from wartime and post-war controls, which progressed through stages relating to gross margin stability and a profit freeze, the Prices Justification Act 1973 was the first nation-wide prices regulation that Australia had experienced.

#### *Prices Justification Tribunal*

The Prices Justification Act 1973 provides that:

"The functions of the Tribunal are to inquire and report to the Minister, in any case where the Tribunal is required to do so by the Minister or the Tribunal considers that it is desirable to do so, whether the price at which a company to which this Act applies supplies or proposes to supply goods or services of a particular description is justified and, if the Tribunal is of the opinion that the price is not justified, what lower price for the supply by the company of goods or services of that description would be justified."<sup>36</sup>

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<sup>36</sup> Prices Justification Act 1973, No. 37 of 1973, Government Printer of Australia, s.16.

The Act applies to companies whose sales turnover during the previous twelve months in Australia exceed \$20 million. A company in this category must not supply goods or services at a price higher than that which existed during the preceeding month unless the company notifies the Tribunal of its intention to do so. The Tribunal must then notify the company within 21 days if it intends to proceed to a public inquiry. If the 21 days elapse, or the Tribunal notifies the Company that it does not intend to hold a public inquiry, the company may increase its prices. If the Tribunal decides to have a public hearing, the company is obliged, under the Act, not to raise its prices until the inquiry is completed and the Minister has released the Tribunal's report. The Tribunal has three months to complete the hearing and issue the report to the Minister. The Minister then has fourteen days in which to make the report available to the public. After this report is made available, the company must, within fourteen days, notify the Minister of the price which it proposes to charge.

There is no statutory compulsion on the companies to comply with the Tribunal's rulings. As the Chairman of the Tribunal, the Honourable Mr. Justice L.H. Williams has stated, the "... Prices Justification Act provides for a system of prices justification and not of price control ... The Government apparently took the view that the major companies covered by the prices justification scheme would be conscious of their corporate image and of the impact that their actions could have on the economy and that they could be expected to act responsibly".<sup>37</sup>

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<sup>37</sup> The Honourable Mr. Justice L.H. Williams, "The Prices Justification Tribunal", *Chartered Secretary*, Vol. 26, No. 2, April-June 1974, p.79.

The Prices Justification Act was amended in 1974 to provide the Tribunal with the power to inquire into prices charged by companies irrespective of their turnover. However, only companies with a turnover in excess of \$20 million were obliged to notify proposed price increases. The Tribunal may notify such companies of a lower price that it considers justified as an alternative to holding a public inquiry. In this case the company has seven days in which to accept the lower price ruling of the Tribunal, or opt to proceed to a public inquiry.

During the period covered by the first Annual Report of the Tribunal (1 August, 1973 to 30 June, 1974), there were 3859 notices of proposed higher prices dealt with by the Tribunal. Only fifteen of these proceeded to a public hearing. There were 421 applications that opted for lower prices rather than proceeding to public inquiry, and 36 of the 3856 proposals were withdrawn by companies after discussion with the Tribunal.<sup>38</sup> Thus the "private" inquiries by the Tribunal outnumbered the public hearings by a ratio of more than 250 to one. This is understandable when one considers the number of applications the Tribunal has had to deal with in its first eleven months of operation, and the considerable time lag that a company experiences before it can increase its prices if there is a public hearing. This lag obviously has varied with each public inquiry. For example, the Australian Paper Manufacturers hearing took only 48 days before a report was issued but the Preservene inquiry took over 95 days.<sup>39</sup> The cost such time delays before a company is permitted

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<sup>38</sup> *First Annual Report of the Prices Justification Tribunal 1973-1974*, Australian Government Publishing Service, Canberra 1975, p.7.

<sup>39</sup> Australian Paper Manufacturers Limited and Cellulose Australia Limited (A.P.M.), Matter No. N73/62, Report by the Prices Justification Tribunal, 24/10/1973; and Preservene Pty. Limited, Matter No. N74/55, Report by Prices Justification Tribunal, 10/5/1974.

to raise prices (labelled "impact costs" in Tribunal deliberations) must be a considerable deterrent for a company proceeding to public hearing rather than accepting a lower price rise.

#### Guidelines and Criteria

The Prices Justification Act 1973 does not lay down any specific guidelines for the Tribunal to follow in deciding whether a particular price is justified. Since its commencement in August 1973 the Tribunal has repeatedly declined to specify precise guidelines, arguing that:-

- (1) the Tribunal has been established specifically as a prices justification authority, not a prices regulating authority. The prescription of rigid guidelines could lead to prices which were not justified and which could inhibit the assessment of prices which were justified;
- (2) there is no one set of agreed guidelines overseas; rather a diversity of criteria have been applied at different times in different countries; and
- (3) there is no one set of guidelines that can cover the multiplicity of situations which can arise in different firms operating in different sectors of the economy.<sup>40</sup>

Despite such objections to developing guidelines, the Tribunal has outlined, in its public reports, many of the guidelines which it takes into account in determining a justified price. In the first B.H.P. inquiry the Prices Justification Tribunal stated that the criteria put forward in the company submission were relevant and

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<sup>40</sup> The Broken Hill Proprietary Co. Ltd. and Australian Iron and Steel Proprietary Ltd. (B.H.P.), Matter No. N74/1637, Report by Prices Justification Tribunal, 28/3/1974, pp.32-40.

useful "... as indicators rather than essential criteria".<sup>41</sup>

These indicators were:-

- (1) The earning test.
- (2) The new investment test.
- (3) The comparative prices test.
- (4) The cost increase test.

The first test - the earnings test - stated that a company is justified in charging prices for its products which will enable it to earn a reasonable return on funds employed. This was subject to the industry being a desirable one and the company concerned operating efficiently. The new investment test was that a company must be allowed to set prices at a level that will enable new investment to be justified as a proper use of funds. The comparative prices test referred to a comparison of the company's prices with efficient overseas producers to provide a measure for judging price levels. The last test put forward by B.H.P. - the cost increase test - stated that a company is justified in charging prices which will enable it to recoup cost increases which arise in the ordinary course of business.<sup>42</sup>

In the third public inquiry, relating to General Motors-Holden's Pty. Ltd., further "criteria" were evolved. The Tribunal stated:-

"In considering this case we have had regard amongst other things to the following matters as being relevant, namely whether:

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<sup>41</sup> The Broken Hill Proprietary Co. Ltd. and Australian Iron and Steel Proprietary Ltd. (B.H.P.), Matter No. N73/7, Report by Prices Justification Tribunal, 10/10/1973, p.15.

<sup>42</sup> B.H.P. Submission to Prices Justification Tribunal, August 1973, p.28, and Prices Justification Tribunal Report relating to B.H.P., *op.cit.* 10/10/1973, pp.16-17.

- (a) the cost increases were known to have occurred rather than merely expected;
- (b) such increases were unavoidable;
- (c) such increases could be offset by greater efficiency;
- (d) sufficient accounting allowance was made for the effects of improved productivity on costs and whether in general the benefits of improved productivity were being sufficiently passed on to the consumer;
- (e) the price increase is justified having regard to the profitability of the Company including the return on investment."<sup>43</sup>

In the 1973-1974 Annual Report, the Tribunal's attitude to profitability assessment, as expressed in its second B.H.P. decision, was stated as follows:-

"First, we do not accept automatically the convention in some sectors of the economy of translating cost increases into higher profits by means of application of percentage mark-ups to cost increases in arriving at price increases. Each case must be considered on its merits.

Second, we do not automatically assume that a company's current profits - whether in relation to capital or sales - are right, and neither too high or low.

In our opinion, in assessing a company's level of profits it is relevant for the Tribunal to pay some regard to that company's level of profits in comparison with average profit figures. Average profit figures may be those of the industry to which the firm belongs if the industry is made up of more companies than one or those of industry as a whole. For this purpose, comparisons with the Tariff Board's and Reserve Bank's series (using their definitions) are useful. However, such comparisons may in some cases be of limited value, and each case must be decided on its own merits.

There are several factors which to some extent detract from the value of such comparisons; for example:

- (a) even when figures of return on capital and the like are calculated on a nominally similar basis to the above series, problems in measuring capital may render comparisons less significant;
- (b) above-average profit may reflect risk, the special circumstances of an industry, or efficiency, and should not automatically be regarded as unjustified;
- (c) the lowering of seemingly unjustified profits may not improve resource allocation and may even worsen it;

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<sup>43</sup> General Motors-Holden's Pty. Ltd. (G.M.H.), Matter No. N73/770, Report by Prices Justification Tribunal, 21/12/1973, pp.58-59.



- (d) a company's investment plans may also have some relevance to its profits."<sup>44</sup>

In the same B.H.P. inquiry, the Tribunal emphasized that:

"Trends in the return on capital and on investment over a period of years both in a company and in an industry would ... be relevant and useful information ..."<sup>45</sup>

Thus one of the most important indicative tests or guidelines used by the Prices Justification Tribunal is some measure of profitability. The evidence shown above from Tribunal reports and the 1973-74 Annual Report of the Tribunal suggests that measurement of profitability is important from the viewpoint of prices justification. This is understandable since the price charged for a product is a significant factor in measuring how profitable that product is likely to be.

The "accounting rate of return" seems to be the most popular and widely-used measure of profitability by the Prices Justification Tribunal and the various overseas price regulatory authorities. This widespread reliance on a rate of return on capital employed warrants a closer examination. This will be the main aim of Chapter 2.

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<sup>44</sup> *First Annual Report of the Prices Justification Tribunal, op.cit.*, pp.21-22 and Prices Justification Tribunal Report relating to B.H.P., 28/3/1974, pp.49-50.

<sup>45</sup> *ibid.*, pp.52-53.

## CHAPTER 2

### ACCOUNTING RATES OF RETURN

The rate of return on capital employed is one measure of the profitability of a business. Professor Chambers claims that "The rate of return is the one statistic that embraces the consequences of all the operations of the company and all the external events that may have impinged on it".<sup>1</sup> If this is the case, it is little wonder that the measure is used so frequently and for so many purposes. Silberston and Solomons claim that there are "at least" six purposes for which the rate of return on capital may be required.<sup>2</sup> Briefly, these are:-

- (1) To compare profits and dividends with capital employed rather than with nominal capital.
- (2) To assess the future profitability of a company planning new investment.
- (3) To compare profit rates earned by a number of businesses in the same industry.
- (4) To see if risk-bearing has received a positive reward.
- (5) To estimate a standard profit on capital employed for purposes of calculating an excess profits tax.
- (6) To estimate profit on capital for the purposes of Governmental control or investigation of prices.

They further point out and illustrate that no single definition of the rate of return will be equally suitable for all of these purposes.

<sup>1</sup> Chambers, R.J., *Securities and Obscurities*, Gower Press, Melbourne, 1973, p.36.

<sup>2</sup> Silberston, A. and Solomons, D., "Monopoly Investigation and the Rate of Return on Capital Employed", *Economic Journal*, Vol. LXII, No. 248, December 1952, pp.783-784.

A perusal of the literature shows many different definitions of rate of return measures. For example, Fitzgerald lists the following relationships:

- (1) Total profits (operating and non-operating) before providing for tax or interest to total funds used.
- (2) Net profits (operating and non-operating) before tax to total owners' funds.
- (3) Net profits after tax to total owners' funds.
- (4) Operating profits before tax or interest to funds used in operating assets.<sup>3</sup>

Standish extracted 43 different ratios, that may be classified as indicating measurement of profitability, from company annual reports.

These were:-

"(Profit) earning rate/earnings/return (%) -  
 on (ordinary) (issued/paid-up) capital  
 per (ordinary) stock unit/per share  
 on average (ordinary) (issued/paid-up) capital  
 after tax, per ordinary stock unit  
 on shareholders' funds  
 on shareholders' funds at end of year/on closing shareholders' funds  
 on average shareholders' funds/equity  
 on opening funds  
 on average equity funds  
 on average net assets  
 after tax, on net tangible assets  
 on total assets  
 after tax, on sales  
 Earnings yield  
 Ordinary earnings rate to total assets  
 Net earnings after tax, per share  
 Profit (%) -  
 to paid-up ordinary capital  
 per stock unit  
 of shareholders' funds  
 before tax, to total net assets  
 after tax, per stock unit  
 after tax (applicable to [holding company], on shareholders' funds  
 after tax, on average shareholders' funds  
 after tax, on total assets  
 after tax, to gross sales

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<sup>3</sup> Fitzgerald, Sir A., *Fitzgerald's Analysis and Interpretation of Financial Statements*, Butterworths, Sydney, 3rd Ed., 1963, pp.79-81.



value of cash outlays is equal to the present value of cash receipts from the investment, is an alternative measure of the return on investment *for a single project*. He further claims that one of the major reasons for the widespread use of the accounting rate of return is that it is "... the only approach available for measuring the ongoing return on investment for a collection of assets which together comprise a division or a company".<sup>6</sup> These alternative profitability measures will be examined in Chapter 5. This chapter will be limited to the "accounting rate of return". Also, alternative methods of asset valuation, which obviously affect the measurement of the rate of return, will not be fully investigated until Chapter 4. Rather, I will be concerned with what *definitions* of the rate of return are appropriate for the purposes of prices justification.

#### DEFINITIONS OF THE RATE OF RETURN

In attempting to define the component items that make up the numerator and denominator in the rate of return, several problem areas emerge. These can be listed as follows:-

- (1) Should the numerator (profit) be measured before or after deducting income tax expense?
- (2) Should loans (debt) be treated as part of capital employed or should the rate of return be measured using shareholders' equity as the denominator? Interest paid on loans must then be treated as part of profit or as an expense respectively.

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<sup>6</sup> Solomon, E., "Return on Investment: the Relation of Book-Yield to True Yield", *Research in Accounting Measurement*, American Accounting Association Collected Papers (Jaedicke, R.K., Ijiri, Y. and Nielsen, O., Editors) 1966, pp.232-233.

- (3) Should capital employed be calculated as at the beginning or end of the period under consideration or should an average figure be used?
- (4) Should "outside" investments be excluded from capital employed and the income from such investment excluded from profits?
- (5) Should profit (loss) from other than "manufacturing activities", or extraordinary activities be included (excluded) in the numerator of the rate of return?
- (6) Should goodwill and other intangible items be included in or excluded from the capital employed calculation?
- (7) Should the interests of minority shareholders' of a company be included or excluded from the numerator and denominator?
- (8) Should hired assets be treated as part of capital employed and net profit calculated before deducting rent?
- (9) Should redundant assets be included in the calculation of capital employed?
- (10) Should losses incurred by a newly established business in early years of operation ("initial losses") be included in capital employed?
- (1) *Profit before or after tax*

The use of an after-tax measure is important from the viewpoint of the company because taxes are an unavoidable financial characteristic that affects ultimate profitability (profits available for retention and the payment of dividends), and the return on funds invested. However, there are several problems in assessing after tax profits on a comparable basis over time, between companies, or with an industry average. If profits are calculated on an after-tax basis, allowance would have to be made for the effects of any changes in the taxation system as it affects the enterprise concerned. This would be necessary when:-

- (i) tax rates have changed materially over the period under comparison, or
- (ii) there have been material changes to the rules of measuring taxable income which may affect one company and not another, or may affect the one company over different periods of time, or
- (iii) the character of the enterprise is to be or has been changed so that it comes under different tax categories.<sup>7</sup>

Since taxation is levied on a taxable income figure net of interest charges, another difficulty arises in computing an accurate taxation charge if the numerator of the rate of return is defined as trading profits plus interest charges. It is also necessary to decide whether the tax charge to be deducted should be calculated on an accrual basis or a payment basis.<sup>8</sup> The taxation recorded in company annual accounts is not usually equal to the payment made to the Commissioner of Taxation due to deferred taxation, various adjustments made relating to prior years, and other differences. Also, such adjustments mean that the provision is not always directly related to the profits earned in the period. However, an accrual basis would be preferable to a payments basis because it is at least more consistent with the profits shown in published company reports, especially if the data for the rate of return ratio is being extracted from such reports.

Thus several difficulties occur in calculating a firm's after tax profit measure, at least without a number of adjustments; and although

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<sup>7</sup> Chambers, R.J., *Financial Management*, Law Book Company, Sydney, 3rd Ed., 1967, p.251.

<sup>8</sup> Walker, J.L., "Estimating Companies' Rate of Return on Capital Employed", *Economic Trends*, No. 253, November 1974, Government Statistical Service, HMSO, London, p.xxxiii.

these adjustments may not be insuperable in calculating individual company profits, it may be best to use a ratio with the numerator calculated on a before-tax basis if comparisons are to be enhanced. This would especially be the case when a company's returns are being compared over time with an industry average, and changes have occurred in the taxation rules that affect one company but not another.

(2) *The treatment of loan capital*

The question as to whether loans should be treated as part of capital employed mainly comes down to the choice between two measures of the rate of return. These are *profit*<sup>9</sup> *(before or after tax) plus interest/total funds employed* and *profit (before or after tax)/shareholders' funds*. The former calculates a return to all investors in the firm (including long-term debt holders), and the latter shows the return on the risk capital employed. In the numerator of the first definition (above), interest is added back to profit. This is necessary when calculating a return on total funds employed (including long-term debt) because if interest was deducted from profit, double counting would be involved - "... once as a deduction from profit and a second time as part of the rate of return on total funds".<sup>10</sup>

The differences between these two definitions are mainly due to the treatment of loan capital. They are important where the rate of return on total funds employed (including loan capital) differs from the rate of interest paid on the loan capital; and where the loan capital is a substantial proportion of the total funds employed.

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<sup>9</sup> It is emphasized that the conventional definition of profit (i.e. net of interest charges) is being used.

<sup>10</sup> Fitzgerald, Sir A., *op.cit.*, p.80.



This can be illustrated by the use of the following simple example:-<sup>11</sup>

In "situation 1", a company has the following capital structure:

Shareholders' funds ("equity")	\$20,000
Long-term loan ("debt")	10,000 (at 10% interest)
Total funds employed	<u>\$30,000</u>

In "situation 2", the company employs no loan capital, and the total funds employed of \$30,000 is entirely made up of shareholders' equity.

In "situation 3", the company has the same capital structure as in situation 1, but makes a much lower profit.

The tax rate is 50%, and the profit figure before tax expense plus interest is \$7,000 in both situation 1 and 2.

	<u>Situation 1</u>		<u>Situation 2</u>		<u>Situation 3</u>	
	\$		\$		\$	
Profit before tax plus interest	7,000		7,000		1,400	
less interest	<u>1,000</u>		<u>-</u>		<u>1,000</u>	
Profit before tax	6,000		7,000		400	
less Taxation at 50%	<u>3,000</u>		<u>3,500</u>		<u>200</u>	
Profit after tax	3,000		3,500		200	
add interest	<u>1,000</u>		<u>-</u>		<u>1,000</u>	
Profit after tax plus interest	<u>4,000</u>		<u>3,500</u>		<u>1,200</u>	
(1) Profit before tax plus interest / total funds	$\frac{7,000}{30,000}$	23.3%	$\frac{7,000}{30,000}$	23.3%	$\frac{1,400}{30,000}$	4.7%
(2) Profit before tax / shareholders' equity	$\frac{6,000}{20,000}$	30.0%	$\frac{7,000}{30,000}$	23.3%	$\frac{400}{20,000}$	2.0%
(3) Profit after tax plus interest / total funds	$\frac{4,000}{30,000}$	13.3%	$\frac{3,500}{30,000}$	11.7%	$\frac{1,200}{30,000}$	4.0%
(4) Profit after tax / shareholders' equity	$\frac{3,000}{20,000}$	15.0%	$\frac{3,500}{30,000}$	11.7%	$\frac{200}{20,000}$	1.0%

<sup>11</sup> This example appeared in Leech, Stewart A., "Profitability, Rates of Return and Prices Justification", *Abacus*, Vol. 10, No. 2, December 1974, pp.150-152.

These four rate of return ratios may be explained by the use of the following notation:-

$r$  = before tax rate of return on total funds

$t$  = company rate of tax

$B$  = debt capital

$E$  = equity capital

$i$  = rate of interest on debt capital

$$(1) \text{ Profit before tax plus interest/total funds} = r$$

$$(2) \text{ Profit before tax/shareholders' equity}$$

$$= \frac{r(B + E) - iB}{E}$$

$$= r + \frac{B}{E} (r - i)$$

$$(3) \text{ Profit after tax plus interest/total funds}$$

$$= \frac{(1 - t) [r(B + E) - iB] + iB}{B + E}$$

$$= r(1 - t) + \frac{itB}{B+E}$$

$$(4) \text{ Profit after tax/shareholders' equity}$$

$$= (1 - t) \left[ r + \frac{B}{E} (r - i) \right]$$

Another definition of the rate of return on total funds employed may be calculated if the interest charges are computed net of tax.

This would appear as:-

$$(5) \text{ Profit after tax plus interest (net of tax)/total funds}$$

$$= \frac{(1 - t) [r(B + E) - iB] + iB(1 - t)}{B + E}$$

$$= r(1 - t)$$

In the simple example (above), ratio 5 would be calculated as follows:-

	<u>Situation 1</u>	<u>Situation 2</u>
	\$	\$
Net profit after tax	3,000	3,500
add interest (net of tax) (i.e. \$1,000 - \$500)	<u>500</u>	<u>-</u>
Net profit after tax plus interest which is net of tax	<u>3,500</u>	<u>3,500</u>

Ratio (5):

$$\text{Net profit after tax plus interest (net of tax)/total funds} \quad \frac{3,500}{30,000} = 11.7\% \quad \frac{3,500}{30,000} = 11.7\%$$

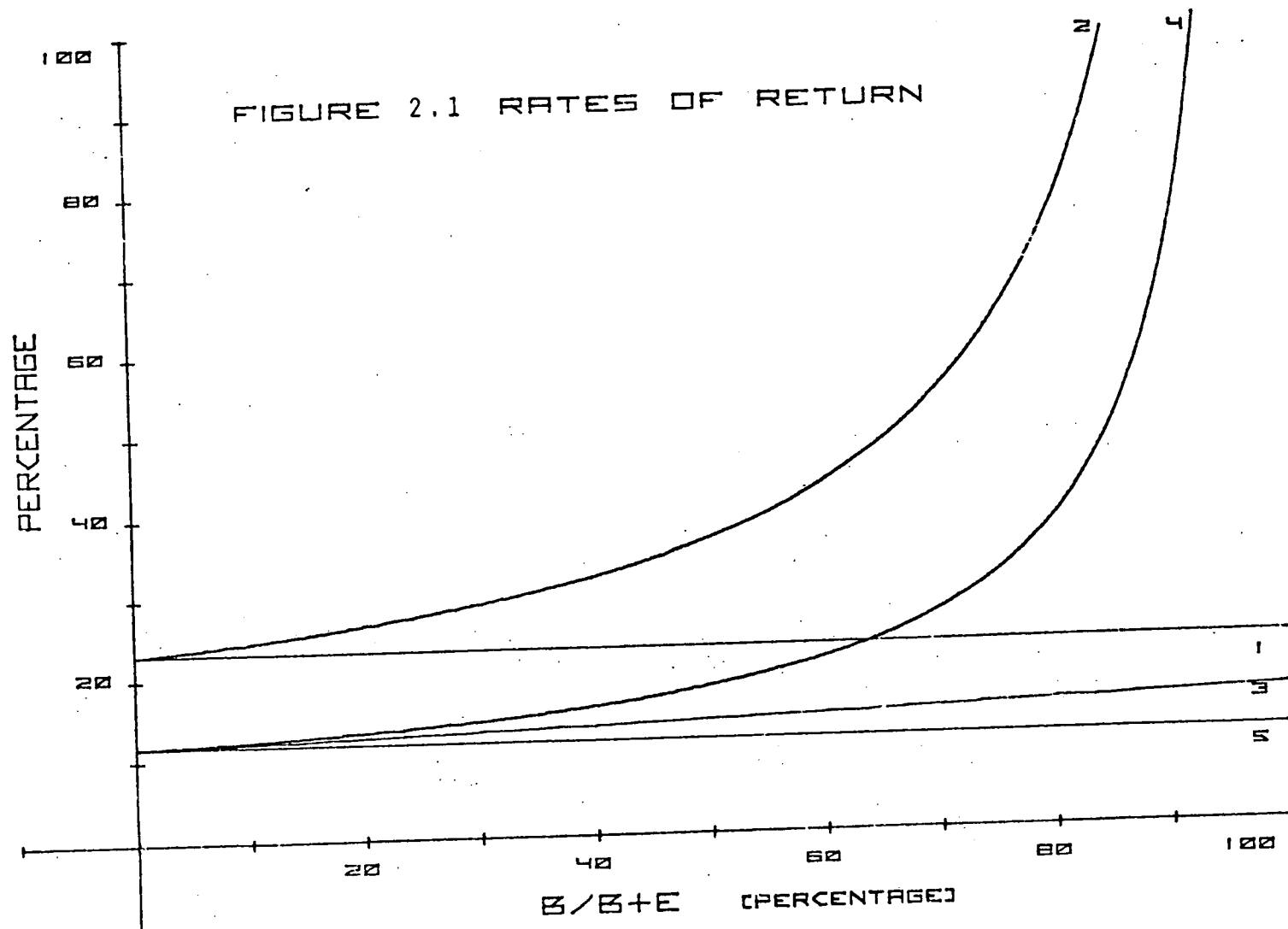
The way in which these five definitions of the rate of return vary with the *debt/debt plus equity* ratio is illustrated in Figure 2.1.<sup>12</sup>

#### The before tax ratios

Figure 2.1 illustrates that  $r$  (ratio 1) does not vary with the ratio of loan capital to total funds employed, but  $r + \frac{B}{E} (r - i)$ , (ratio 2), increases as the amount of debt employed increases. The rate of this increase, and therefore the difference between ratio 1 and ratio 2 as  $B/B + E$  increases, depends on the difference between  $r$  and  $i$ . If  $r > i$ , the use of debt capital will increase the return on shareholders' equity, but if  $r < i$ , the use of debt will cause a decline in the return on shareholders' equity (as shown in situation 3). Thus it might be argued that the return in situation 1 is 23.3% on total capital employed. On the other hand, the loan has enabled 30.0% to be earned on shareholders' equity. But it may then be argued that this does not give a proper impression of the total concern because much less than \$6,000 on \$20,000 (30.0%) would probably have been earned if no debt had been employed. In situation 3, it may be misleading to state that 4.7% has been earned.

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<sup>12</sup> The calculations for ratios 1 - 5, which form the basis of the graph, are shown in Appendix 1.



on shareholders' funds (i.e. the loan has contributed to a decline in the rate of return on shareholders' funds in this case). The comparison of situations 1 and 2 portrays the difficulty that arises from using a rate of return on shareholders' funds - the profitability of two otherwise identical companies would appear to be different if they have different capital structures. When the return on total capital is the same (23.3%) the return on shareholders' equity shows a higher return in the levered situation (30.0%) than in the unlevered situation (23.3%).<sup>13</sup>

#### The after tax ratios

The after tax ratios provide similar arguments to those stated above, except that  $r(1 - t) + \frac{1tB}{B+E}$  (ratio 3), being one half of the return of the before tax position (given a 50% tax rate), increases because of the increasing tax savings on interest (which is an allowable deduction) as more loan capital is employed. In situation 1, although the return on total capital employed is 13.3% the return on shareholders' equity is raised to 15.0%. Situation 3 shows a drop from 4.0% return on total funds to 1.0% return on shareholders' equity; and situation 2 demonstrates the tax advantage of interest as an allowable deduction in the return on total capital case (13.3% compared to 11.7%), and when compared to situation 1, is once again even higher in the levered situation (15.0% compared to 11.7%).

Ratio 3,  $r(1 - t) + \frac{1tB}{B+E}$ , may be compared with ratio 5,  $r(1 - t)$ , which maintains a constant rate of return of 11.7% irrespective of the amount of loan capital employed. Ratio 5 may be useful if the purpose requires that the effects of different methods of financing, on the rate of return, be eliminated. In other words,

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<sup>13</sup> These arguments were adapted from Silberston, A. and Solomons, D., *op.cit.*, pp.792-793.

this rate of return calculation is independent of the firm's capital structure. This definition ignores the fact that interest is an allowable deduction for taxation purposes. On the other hand, ratio 3 demonstrates that a levered firm obtains a higher rate of return because interest is an allowable deduction for taxation purposes (assuming other things equal). In the above ~~example~~, ratio 5 produced the same results for both the levered and the unlevered situations, but ratio 3 showed that the unlevered situation resulted in a rate of return of 11.7% while the levered situation resulted in a rate of return of 13.3% - a difference of 1.6% due to interest being an allowable deduction. This is shown by the calculation -

$$\begin{array}{rclcl} \text{Tax savings on interest/} & & \$500 & & \\ \text{funds employed} & = & \frac{\$30,000}{} & = & 1.6\% \end{array}$$

Since interest is an allowable deduction for taxation purposes and is one factor which raises the profitability of a company, (after tax), it cannot be ignored in measuring the after tax return on funds employed. At best, ratio 5 may be useful to the extent that it provides information on the tax savings on the interest in a firm with a levered capital structure.

This analysis would seem to suggest that ratios calculated using a denominator of total funds employed (debt plus equity) and shareholders' equity are both important for the purpose of interpreting the meaning of the rate of return as a measure of profitability. Since loan capital and its effects are important contributory factors in the financial results obtained by a company, it would appear that a rate of return on total capital employed is a necessary complement to a return calculated on shareholders' equity - provided that the capital structure of the company concerned is examined before any comparison with other firms, or with an industry average, is made.

### Short term capital and long term capital

When including loan capital in the denominator of the rate of return, a decision must also be made as to whether profits are to be assessed in relation to both long-term loans and short-term loans or whether long-term capital only is to be included in capital employed. In the latter case, interest on short-term loans would be deducted from the profit figure and interest on long-term loans would be included as part of profit. However, there are problems with this approach. Firstly, the distinction between long-term and short-term debt capital is not always a clear one. Secondly, if a prices regulatory authority uses such a distinction, it may lead to companies substituting between short-term and long-term debt. This, in fact, was the case with the United States Price Commission. In their original rules, they held that only interest charges on short-term debt could be counted as costs in calculating profit margins. The Price Commission argued that long-term debt was simply a substitute for owner's equity and there was no more justification for allowing deductions of interest on long-term debt than there was for deductions of dividends. However, they amended the legislation to allow all interest charges to be deducted in calculating profit margins because companies substituted short-term for long-term financing.<sup>14</sup>

Thus it would appear that a rate of return measure using debt as part of the denominator should include both short-term and long-term loans. In addition to the problems with such a distinction mentioned above, there seems little other justification for dividing the debt element into the two factors. If the measure is to be one that uses capital employed, all funds used in the business should be included in the rate of return.

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<sup>14</sup> Jackson Grayson Jr., C., *op.cit.*, p.186.

(3) *The point in time to measure capital employed*

The rate of return relates profit, a flow concept, to capital, a stock concept. Profit is earned over a period of time while the capital employed in generating that profit flow is measured at a particular point in time. Since capital employed may change considerably during the period in which profits are earned, it is argued that it is more correct to measure profits against an average of capital employed at the beginning and end of the period. This average would correspond more closely to an average level of capital employed during the period than would opening or closing capital alone.<sup>15</sup>

On the other hand, a more accurate average would result if the capital employed was calculated from the opening capital and weighting the changes during the period. For example, new capital introduced 4 months after the period commenced would be weighted by  $\frac{2}{3}$  and added. The profits of the period would be weighted by  $\frac{1}{2}$  and added - the assumption being that profits accrue evenly over the period. This was the method followed in calculating the denominator of a rate of return for Excess Profits Tax purposes in the United Kingdom.<sup>16</sup>

(4) *Investments and investment income*

The inclusion of investments and investment income in capital employed and profits respectively, is a matter of some debate. It is usually accepted, for the purposes of measuring profitability by the accounting rate of return for the purpose of prices justification or price control, that investments not held primarily for operational

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<sup>15</sup> Walker, J.L., *op.cit.*, p.xxxv.

<sup>16</sup> Silberston, A. and Solomons, D., *op.cit.*, p.787.



purposes in the company producing the goods under reference should be excluded from capital employed.<sup>17</sup> This is justified by the need to separate the trading from the investment function of the enterprise; and to ensure that distortions, caused by a difference in the rate of return on such investments from the rate of return on capital employed excluding the investments, do not appear in the final ratio.

However, a number of companies may hold part of their working capital in the form of marketable securities and government bonds while others hold most of their working capital in cash. Silberston and Solomons argued that marketable securities should not be included in capital employed except when such securities are realized and turned into operating assets; and interest on such excluded securities should not be included in net profit. On the other hand, cash should be included in capital employed. They hold that arguments to the contrary are not well founded because "... the first firm is not using its reserves in the business whilst they are in the form of securities, while the second firm has acquired assets that it is, in fact, employing".<sup>18</sup> Rowley argues that such a conclusion is incorrect because it will favour a company which holds most of its working capital in the form of bank deposits.<sup>19</sup> There is also the danger that companies who expect to appear before the Prices Justification Tribunal may change from securities to cash. If short-term securities were excluded from the definition of capital, there would be need to

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<sup>17</sup> Silberston, A. and Solomons, D., *op.cit.*, pp.791-792; and Rowley, C.K., *The British Monopolies Commission*, G. Allen and Unwin, London, 1966, pp.294-295.

<sup>18</sup> Silberston, A. and Solomons, D., *op.cit.*, p.791.

<sup>19</sup> Rowley, C.K., *The British Monopolies Commission*, *op.cit.*, pp.294-295.

examine the cash/securities position over a period of time.<sup>20</sup>

These arguments would seem to favour allowing companies to include marketable securities and short-term deposits, as well as cash as part of the definition of capital employed, provided that such securities were short-term and were part of the normal working capital of the enterprise. Other outside investment assets should be excluded from the denominator of the rate of return. However, in many cases the distinction may be a difficult one to make, and this may limit the application of such a criterion in determining which investments are to be excluded or included from capital employed.

(5) *Extraordinary items*

In general, extraordinary items of revenue and expense should not be deducted from profit in the rate of return calculation. The reasons are somewhat similar in nature to those justifying the exclusion of outside investment income - that such revenue and expense is not incurred in the ordinary course of producing goods under a pricing inquiry. Profits and losses on the sale of assets not usually held for sale (e.g. fixed assets) is one such item. Other items such as foreign exchange gains and losses and minor prior-period adjustments that are non-recurring from period to period would also fall into this category.

(6) *Intangible assets*

Intangible assets usually comprise items such as goodwill, capitalized exploration, research and development costs, preliminary expenses incurred during company formation or on new capital-raising, patents, trade marks, and in consolidated accounts, goodwill (or

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<sup>20</sup> Silberston, A. and Solomons, D., *op.cit.*, p.791.

reserve) on consolidation. Standish lists 36 different titles of intangible assets reported in 51 Australian company annual reports. He considers that "... intangible items pose the most contentious issues of asset recognition".<sup>21</sup> The decision by a company to include intangibles in their annual accounts means that a value must be placed on them. The valuation of such a heterogeneous group of items can vary widely according to the basis of valuation adopted and the policies employed for the amortization of the intangibles.

Goodwill usually represents that part of the payment for acquiring assets of another organization that is in excess of some value of those assets. Often that value tends to be "book value" or "written down value" under historical cost conventions, which means that the resultant goodwill figure may be quite arbitrary. Unfortunately, many meanings can be given to the "value" of the assets purchased which adds to the capriciousness of the figure placed on goodwill.<sup>22</sup> The amount may then be arbitrarily amortized over several years, leaving a "written down" value at any one point in time; or firms may decide to leave the initial goodwill figure as a permanent feature in the balance sheet. Since the value placed on goodwill is so arbitrarily calculated at any point in time, inclusion of this intangible asset in capital employed may considerably affect the rate of return calculation, which will then depend on the whim of the company's management as to the value and the amortization policies. Additionally, the figure placed on goodwill does not necessarily represent a value from which future benefits may be

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<sup>21</sup> Standish, P.E.M., *op.cit.*, p.75.

<sup>22</sup> The topic of asset valuation in relation to obtaining a rate of return measure is dealt with in Chapter 4 of this dissertation.

expected. Preliminary expenses and debenture discount would be other intangible assets in this class.

On the other hand, exploration, research and development expenditures can sometimes be related to revenue forthcoming in future periods; and it may be appropriate to "capitalize" these expenditures and charge them against the revenue earned in those future periods. However, this capitalization is not consistently carried out by companies. Some companies charge, against revenue, exploration, development and research costs as they are incurred, despite the fact that they may relate to future benefits. Furthermore many companies may undertake exploration, development and research but do not disclose the cost in the accounts or directors' reports. In relation to intangibles, the disclosure requirements of the Companies Act in Australia are as follows:-

"There shall be shown separately in the accounts ... the amount charged for, or set aside to a provision for, depreciation, diminution in value or amortization of ... intangible assets.";<sup>23</sup>

and that:

"There shall be shown separately in the accounts or group accounts as at the end of the financial year (whether by way of note or otherwise) the amounts and descriptions of all fixed assets, intangible assets, current assets, investments and assets of any other kind, under headings appropriate to the business of the company or of the company and its subsidiaries, and arranged in classes under those headings according to their nature or function in the business, the following being shown separately:-

- (j) the aggregate of the amounts of any items of goodwill and of any patents and trademarks, to the extent that they have not been written off;

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<sup>23</sup> Victorian Companies Act and Regulations Consolidated for 1971 Amendments, C.C.H. Australia Limited, N.S.W. Ninth Schedule, s.2 (1) (h) (iii).

(k) the amounts of each of the following, to the extent that they have not been written off -

- (i) preliminary expenses;
- (ii) expenses incurred in connection with any issue of shares or debentures;
- (iii) sums paid by way of commission in respect of any shares or debentures;
- (iv) sums allowed by way of discount in respect of debentures; and
- (v) sums allowed by way of discount on any issue of shares; and

(l) the amounts and descriptions of other assets, with particulars of their nature."<sup>24</sup>

There is no specific mention of exploration, research and development costs or their capitalization in the Ninth Schedule.

A survey covering the annual reports of two hundred and seventy-one Australian companies during 1964-1969 revealed that only twenty-five disclosed that they had undertaken research and development activity; and nineteen of the twenty-five disclosed the fact by way of comment in the Director's or Chairman's report.<sup>25</sup> Thus many companies either do not undertake research and development activity, or had not chosen to capitalize the costs, or had written them off against profits and not disclosed this fact. In this last instance, the rate of return on capital employed would obviously differ from the rate of return calculated if capital was greater by the amount of the intangible capitalized costs.

Rowley argues that research and development expenditure should not be capitalized but should be completely deducted from profit.<sup>26</sup>

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<sup>24</sup> *op.cit.*, s.5 (4) (j), (k), (l).

<sup>25</sup> Pratt, D.J., "Accounting for and Disclosure of Research and Development Activity", *Singapore Accountant*, Vol. 8, 1973, p.29.

<sup>26</sup> Rowley, C.K., *The British Monopolies Commission*, *op.cit.*, p.300.

He states that the rate of interest chosen to capitalize research and development expenditure would be arbitrary; and part (or all) of the expenditure may be "misdirected" and this should be treated in a similar fashion to known abortive development expenditure. This may be so, but for Australian companies, it is sometimes difficult to determine the amount of expenditure that has been deducted from profit, - and we are still left with those companies who have chosen, in the past, to capitalize these costs.

It is difficult to ignore costs which have been capitalized and from which a future benefit is expected. In such a case, it is probably more useful to include these "intangibles" in capital employed when calculating a rate of return for the purpose of prices justification. If future revenue is expected as a result of the expenditure that has been capitalized, it should be included in the denominator of a rate of return that is indicating profitability in determining a justified price. At least this would reflect a lower rate of return as would be in case if one could adopt Rowley's solution of deducting the costs from profits, as they are incurred. However, rate of return comparisons between companies and with an industry average, remains a problem.

Similar arguments can be made for patents which are amortized over time before they expire.

The major problems with "intangible assets" is the value placed upon them and how this value is determined. If specific valuation and capitalization methods were consistently followed, and disclosure rules were more specific, a less arbitrary rate of return calculation would, no doubt, be possible; but clearly rates of return derived from existing accounting reports will be so arbitrary as to be misleading in some cases.

(7) *Interests of minority shareholders*

When a company acquires a majority interest in another company, the position is complicated by the need to account for the owners of the remaining shares in the subsidiary. The minority shareholders are entitled to a share of the assets or shareholders' funds and to a similar proportion of the profits. In the consolidation process to produce accounts for the group, only the majority interest of the shareholders' funds may be eliminated. Thus, in consolidated accounts, shareholders' funds are divided into two parts - the group and the minority interests.

When using consolidated accounts to determine the rate of return, a decision must be made as to whether the interests of the minority shareholders should or should not be included. In deciding what is a justified price for a product that a company produces, a prices authority is concerned with looking at a specified bundle of assets (that produce the product in question) and the return on that bundle. It is contended here that the distinction between share capital and reserves attributable to group shareholders and the minority shareholders' interest in subsidiary companies is therefore not important in calculating a rate of return for prices justification purposes. The interests of the minority shareholders, if part of that bundle of assets (and usually this will be the case) should be included in the rate of return calculation.

(8) *Rented and owned assets*

Rent paid on hired or leased assets would normally appear as an expense and would be deducted before arriving at net profit. The hired assets involved would not appear in the balance sheet as part of the capital employed. If two firms are "identical" except for one owning and the other renting assets, this normal procedure would be

consistent in calculating profits and capital in a rate of return ratio if rent paid as a percentage of the value of rented assets were the same as the rate of return on capital employed. However, where this differs, this treatment of rent and rented assets would give different rates of return on capital employed.<sup>27</sup>

If an accurate measure of the rate of return is to be achieved, a prices authority should capitalize assets that are hired or leased and include this capitalized amount in the denominator. Interest charges on rented assets should not be deducted from revenue in determining net profit. This would eliminate any distinction between hired and owned assets. It is contended that such a distinction is immaterial in calculating the rate of return for prices justification purposes.<sup>28</sup>

On the other hand, Silberston and Solomons advocated that "... to preserve consistency between the methods of calculating profits and capital, it would probably be best to charge rent as an expense when it is actually paid, and to do nothing about it when it is not".<sup>29</sup> They consider that, in practice, the difference to the rate of return due to differences in rent paid/value of rented assets and the rate of return on capital where the comparison between two otherwise identical firms is made, would be unimportant.

(9) *Redundant assets*

It is not a simple matter to define a redundant asset. For example, it may be argued that an asset is redundant when the average

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<sup>27</sup> Silberston, A. and Solomons, D., *op.cit.*, pp.793-794.

<sup>28</sup> Rowley, C.K., *The British Monopolies Commission*, *op.cit.*, p.296.

<sup>29</sup> Silberston, A. and Solomons, D., *op.cit.*, p.793.



total cost of production by new equipment is less than the average variable cost by using the existing equipment.<sup>30</sup> Silberston and Solomons state that the definition of a redundant asset depends on the efficiency with which assets are used, and attempt to draw a distinction between partial and total redundancy. They propose that totally redundant assets should be eliminated from capital employed because in making comparisons between firms, it is the effectiveness with which the employed assets are being used which is the desired measure.<sup>31</sup> Rowley also argues that redundant assets should be excluded from capital employed for Monopolies Commission rate of return analysis, and charges against revenues, in respect of those assets, added back.<sup>32</sup>

On the other hand, the accounting rate of return measures a mixture of current and past profitability, including the consequences of decisions such as the purchase of assets that are redundant. For the purpose of assessing a company's profitability, it would seem necessary that the rate of return reflect such decisions. Silberston and Solomons admit that in the sense that redundancy depends on the efficiency with which assets are used, most companies have redundant assets and the degree of redundancy will be reflected in the rate of return.<sup>33</sup> Thus, it may be argued that all redundant assets should be included in capital employed when calculating a company's rate of return.

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<sup>30</sup> Rowley, C.K., *The British Monopolies Commission*, *op.cit.*, p.297.

<sup>31</sup> Silberston, A. and Solomons, D., *op.cit.*, p.797-798.

<sup>32</sup> Rowley, C.K., *The British Monopolies Commission*, *op.cit.*, p.297.

<sup>33</sup> Silberston, A. and Solomons, D., *op.cit.*, p.798.

(10) *Initial losses*

It may be argued that losses incurred by a newly established business in its early years of operation should be capitalized and included in the capital employed for the rate of return calculation.<sup>34</sup> However, this would understate the rate of return as an indicator of current profitability; and would distort comparisons over time, with other companies, or with an overall industry average.

A far preferable procedure would be not to capitalize initial losses, and allow them to display negative returns in the years in which they are incurred. A prices investigatory authority is not precluded from examining these past negative rates of return which reflect the initial losses, and they can be taken into account, if necessary. This would reduce any distortions to the rate of return as a measure of current profitability.

THE CHOICE OF RATES OF RETURN FOR PRICES JUSTIFICATION

The ten questions discussed above encompass the major, but certainly not all of the problems connected with defining the accounting rate of return. However, these main items are ones which have caused difficulties in the past and a full discussion of them seemed warranted. These considerations must now be integrated and the rate of return defined for the practical purpose of prices justification.

To ensure that the rate of return is comparable, especially between companies and with an industry average, it would seem desirable to use a before-tax ratio. However, the after-tax measure should not be discarded completely. Taxation is an important recurring deduction from profit, and an after-tax ratio, as well as a before-tax ratio, should be calculated - provided that either adjustments are made to eliminate changes in the tax rules or the

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<sup>34</sup> Rowley, C.K., *The British Monopolies Commission, op.cit.*, p.296.

limitations previously discussed are recognized when using the after-tax measure.

Since a prices regulatory authority is concerned with measuring the profitability of a bundle of assets used in production of goods under reference, it is important to calculate a ratio based on total funds employed, including loan capital. The relationship between this ratio and one based on shareholders' equity has been shown above. It was concluded that both ratios - one calculated on total funds employed and the other calculated on shareholders' equity - were complementary, provided the debt/equity structure of the company was also examined. When the rate of return is calculated on total funds employed, both long-term and short-term debt should be included in the denominator.

An average funds employed figure would be more accurate than use of beginning or end of period amounts. If data is available, changes in the funds employed over the period should be weighted and added to opening capital. Otherwise a simple average of beginning and end of period capital will have to suffice.

Working capital, which includes short-term marketable securities, is included in the definition. Outside investment assets and their related income are excluded. Extraordinary non-recurring items should also be excluded.

The question of inclusion of different intangible assets poses somewhat of a problem. On a general basis it would seem appropriate to exclude goodwill, preliminary expenses and debenture discount and other assets that do not represent a value from which future benefits may be expected. Exploration, research and development expenditure is probably best written off in the period in which it is incurred. In firms that have capitalized such expenditure it would seem more

appropriate to include it in capital employed than to exclude it.

When using consolidated group figures, the interests of minority shareholders should be included in the rate of return calculation.

The distinction between hired and owned assets is probably best eliminated by capitalizing hired assets and not deducting rent, in determining profit. For practical purposes, rent paid may be charged as an expense and hired assets not included in capital employed.

Redundant assets should be included in the denominator. Initial losses should not be capitalized. Negative rates of return in the years when losses are incurred will best reflect the position.

This summary unfortunately reflects a "trade-off position" in defining the accounting rate of return. There has been, in many cases, adoption of a particular definition because of practical difficulties of calculation rather than the use of the theoretical ideal. In a number of instances (e.g. goodwill), there could be argument for inclusion rather than exclusion in the numerator and denominator of the ratio, and vice versa. However, the arguments "for and against" have been presented, and the decisions made reflect careful consideration of the arguments. As mentioned at the beginning of the chapter, distortions to the rate of return caused by irregular patterns of asset valuation, have been purposely excluded until Chapter 4.

The above conclusions indicate that it is desirable not to look at one definition of the rate of return. For the reasons given above, it is advocated that a number of different definitions be examined for any one company. If comparison with an industry average is desirable, it would be necessary to calculate such averages for all of the ratios. This set of ratios may be summarized as follows:-

- (1)  $\frac{\text{Profit before tax plus interest}}{\text{Average total funds}}$
- (2)  $\frac{\text{Profit before tax}}{\text{Average shareholders' funds}}$
- (3)  $\frac{\text{Profit after tax plus interest}}{\text{Average total funds}}$
- (4)  $\frac{\text{Profit after tax}}{\text{Average shareholders' funds}}$

where:

- (a) profit is net profit, less income from outside investments, less income from extraordinary activities, and including interests of minority shareholders ;
- (b) average shareholders' funds include paid up capital, reserves, retained earnings, and the interests of minority shareholders ;
- (c) average total funds include shareholders' funds and long-term and short-term loans;

This is represented by:-

Net fixed assets

plus: capitalized exploration, research and development expenditures, working capital (current assets less current liabilities except bank overdrafts and short-term loans)

less: outside investments, other intangible assets (e.g. goodwill, preliminary expenses).

This set of four ratios, calculated consistently to the specified definitions of individual items, could provide a reasonable basis on which to assess the historical accounting rate of return of a company for the purposes of prices justification. The limitations previously discussed must be understood when examining them, and the capital structure of the company must be disclosed. (Perhaps a fifth ratio -  $\text{debt/debt} + \text{equity}$  - should be added).

This chapter set out to investigate appropriate definitions of the rate of return on capital for the purpose of prices justification. The performance of the Prices Justification Tribunal in using the rate of return may now be judged in the light of this investigation. This will be the aim of Chapter 3.

### CHAPTER 3

#### THE PRICES JUSTIFICATION TRIBUNAL AND

#### THE RATE OF RETURN ON CAPITAL EMPLOYED

The aim of this chapter is to examine the use of the rate of return on capital employed by the Prices Justification Tribunal (hereafter "P.J.T."), with special emphasis on the definitions of the ratio. This analysis will be divided into three main sections, which will investigate:-

- (1) the definitions of the rate of return used by the Tribunal in its public reports;
- (2) the use by the Tribunal of the rate of return definitions and series compiled by the Industries Assistance Commission (hereafter "I.A.C.") and Reserve Bank of Australia (hereafter "R.B.A."); and
- (3) the use and interpretation of the rate of return in each of the public inquiries held by the Tribunal in its first seventeen months of operation (i.e. until the end of 1974).

#### (1) THE DEFINITIONS OF THE RATE OF RETURN USED BY THE P.J.T.

The P.J.T. has relied on a rate of return on capital employed ratio as the main indicator of profitability in its public inquiries. To enhance the assessment of a company's rate of return on funds, Tribunal Memorandum Number 2 asked companies to include the following information in their submissions:-

##### "Net profits and net funds employed in the business"

- (a) latest detailed profit and loss accounts and balance sheets, preferably for two or three years;
- (b) profit and loss statement for last year and for last 3 months, if possible;

- (c) the company's calculations of the amount of net funds employed in the business as a whole during the last year, and in the part of the business under consideration (excluding exports), and the method of calculation;
- (d) net profit earned before taxation during the last year on the funds employed in the business as a whole and the part of it under consideration (excluding exports);
- (e) net profit expressed as a ratio of net funds employed before and after tax for the business as a whole and the part of it under consideration;
- (f) what effect the price increase is expected to have on future profits of this part of the company and on the company as a whole;
- (g) relevant budget figures for the current financial year for this part of the company and the company as a whole;
- (h) margin on sales for this part of the company and for the company as a whole:
  - (i) after meeting selling costs (i.e. operating costs)
  - (ii) before selling costs."<sup>1</sup>

This Memorandum was issued by the Tribunal in July 1974, after eleven months of operation and fifteen public inquiries. The specifications indicated to the companies that a rate of return ratio was needed. However, the Tribunal has made no attempt to specify in detail how the denominator (funds employed) and the numerator (net profit) were to be measured. At no stage in the Tribunal's operation has it issued definitions of these items; and there has been no statement as to which measure of the rate of return is the most useful for the purposes of prices justification. This reliance on "the company's calculations" has resulted in a diverse number of ratios, which have a diverse set of definitions of the numerator and denominator being submitted to the Tribunal for consideration for one purpose - prices justification.

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<sup>1</sup> "Information in Support of Notice of Proposal to Increase Prices", *Circular Memorandum No. 2*, Prices Justification Tribunal, Melbourne, 16 July, 1974, Section B, Item 10.



An indication of this mixture of rates of return, considered by the Tribunal in different public inquiries, is illustrated in Table 3.1 (below), which shows the company concerned, the date of the P.J.T. report, and the ratios submitted to the Tribunal by the company and used in that inquiry.

Thus, there have been many different rate of return ratios considered by the Tribunal. The only guidance that Memorandum Number 2 gave to companies (as far as the rate of return was concerned), was to indicate the need to submit a return, before and after tax, for both the business as a whole and the part of it that produced the goods under consideration (excluding exports). Table 3.1 illustrates that the Memorandum had little or no effect on reducing the diversity of ratios submitted. A more significant change in the ratios can be traced to the time when it became known that the Tribunal was interested in using the definitions of the Tariff Board (now I.A.C.) and on a smaller scale, those of the R.B.A. Some companies actually submitted rate of return ratios recalculated to meet the definitions of those governmental authorities. However, since no precise guideline requirement has been issued, by the Tribunal, that the I.A.C. or R.B.A. definitions are needed, the ratios examined have continued to be varied. This is also shown in Table 3.1.

## (2) I.A.C. AND R.B.A. DEFINITIONS

The I.A.C. list the following as profitability ratios:-

Operating profit/Funds employed

Operating profit/Sales

Net Profit/Sales

TABLE 3.1

Profitability Ratios Used in P.J.T. Inquiries

Company	Ratio
B.H.P. (10/10/73) (28/3/74) (12/12/74)	$\frac{\text{Net profit after tax before interest (net of tax)}}{\text{Total funds employed}}$
A.P.M.* (24/10/73)	$\frac{\text{Net profit before tax plus interest}}{\text{Average fixed assets}}$
	$\frac{\text{Profit before tax}}{\text{Average shareholders' funds}}$
	$\frac{\text{Profit after tax}}{\text{Average shareholders' funds}}$
G.M.H.* (21/12/73) (23/8/74)	$\frac{\text{Net profit after tax}}{\text{Sales}}$
	$\frac{\text{Net profit after tax}}{\text{Paid-up capital}}$
	$\frac{\text{Net profit after tax}}{\text{Shareholders' funds}}$
	$\frac{\text{Operating profit before tax}}{\text{Net funds employed}}$
	$\frac{\text{Operating profit after tax}}{\text{Net funds employed}}$
S.A. Brewing Co.* (16/1/74)	Return on shareholders' funds
C.U.B.* (9/4/74)	$\frac{\text{Net profit after tax}}{\text{Shareholders' funds}}$
Cascade (19/4/74)	$\frac{\text{Net profit after tax}}{\text{Total funds employed}}$
	$\frac{\text{Net profit (after tax)}}{\text{Shareholders' funds}}$
Shell* (3/5/74)	$\frac{\text{Net profit}}{\text{Shareholders' funds}}$
	$\frac{\text{Operating profit}}{\text{Funds employed}}$
	$\frac{\text{Net profit}}{\text{Paid-up capital}}$

TABLE 3.1 (CONTINUED)

Company	Ratio	
Shell* (cont.)	$\frac{\text{Net profit after tax plus interest after notional tax on interest}}{\text{Total share capital, reserves, and net amounts owing to related corporations}}$	
Preservene (10/5/74)	Nil	
Bradmill and Tara Towels (13/5/74)	$\frac{\text{Net operating profit}}{\text{Sales}}$	
	$\frac{\text{Net profit after tax}}{\text{Shareholders' funds}}$	before minority interests
	$\frac{\text{Net profit after tax}}{\text{Shareholders' funds}}$	after minority interests
Lever and Kitchen* (15/5/74)	Nil	
Bunge (24/5/74)	$\frac{\text{Profit before tax}}{\text{Shareholders' funds}}$	
Swan (7/6/74)	$\frac{\text{Net profit after tax}}{\text{Shareholders' funds}}$	
Kellogg* (19/7/74)	$\frac{\text{Net profit after tax before extraordinary items}}{\text{Shareholders' funds}}$	
	$\frac{\text{Net pre-tax operating profit}}{\text{Shareholders' funds and borrowings}}$	
Southern Queens- land Dairy (23/7/74)	$\frac{\text{Net trading income}}{\text{Total investment}}$	
F. and T. Industries (31/7/74)	$\frac{\text{Net profit before tax}}{\text{Funds}}$	(Plant and Machinery at book value)
	$\frac{\text{Net profit before tax}}{\text{Funds}}$	(Plant and Machinery at insured value)
	$\frac{\text{Net profit after tax}}{\text{Funds}}$	(if treated as Public Co.)
Mayne Nickless* (2/8/74)	$\frac{\text{Net profit after tax}}{\text{Shareholders' funds}}$	
	$\frac{\text{Net profit before tax}}{\text{Shareholders' funds}}$	
	$\frac{\text{Net profit after tax}}{\text{Funds employed}}$	

TABLE 3.1 (CONTINUED)

Company	Ratio
Mayne Nickless* (cont.)	$\frac{\text{Net profit before tax}}{\text{Funds employed}}$ $\frac{\text{Surplus before interest and tax}}{\text{Specified funds}}$
Brick and Pipe (5/8/74)	Nil
Alcoa (16/8/74)	$\frac{\text{Trading profit after tax}}{\text{Total assets}} \quad (\text{Consolidated})$ $\frac{\text{Trading profit after tax}}{\text{Total assets}} \quad (\text{Alcoa only})$
Philips (20/8/74)	Nil
A.C.I. (23/8/74)	Nil
Wills* (29/8/74)	$\frac{\text{Operating profit}}{\text{Funds employed}}$ $\frac{\text{Operating profit}}{\text{Sales}}$ $\frac{\text{Net profit}}{\text{Sales}}$ $\frac{\text{Net profit}}{\text{Paid-up capital}}$ $\frac{\text{Net profit}}{\text{Shareholders' funds}}$
Gadsden (2/9/74)	$\frac{\text{Operating profit}}{\text{Funds employed}}$ $\frac{\text{Net profit}}{\text{Funds employed}}$ $\frac{\text{Net profit}}{\text{Shareholders' funds}}$ $\frac{\text{Long-term debt}}{\text{Shareholders' funds}}$ $\frac{\text{Shareholders' funds}}{\text{Funds employed}}$

TABLE 3.1 (CONTINUED)

Company	Ratio
Arnotts* (13/9/74)	<u>Operating profit before tax</u> <u>Funds employed</u>
	<u>Operating profit after tax</u> <u>Funds employed</u>
	<u>Net profit</u> <u>Shareholders' funds</u>
	<u>Operating profit</u> <u>Sales</u>
Fairfax (13/9/74)	<u>Net profit before tax</u> <u>Funds employed</u>
	<u>Net profit after tax</u> <u>Funds employed</u>
Heinz (3/10/74)	<u>Profit (after tax)</u> <u>Shareholders' funds</u>
	<u>Profit (before tax)</u> <u>Total assets</u>
	<u>Net profit (after tax)</u> <u>Sales</u>
Ready Mix (7/10/74)	<u>Net profit after tax</u> (excluding asset <u>Shareholders' funds</u> revaluation)
Ready Mix Concrete Limited	<u>Net profit after tax</u> <u>Shareholders' funds</u>
	<u>Net profit after tax</u> <u>Funds employed</u>
Ready Mix Group (N.S.W.)	<u>Pre-tax profits</u> <u>Funds employed</u>
	<u>After-tax profits</u> <u>Funds employed</u>
Tooth* (18/10/74)	<u>Net profit after tax</u> <u>Shareholders' funds</u>
Bond's Wear (18/10/74)	<u>Adjusted operating profit</u> <u>Funds</u>
Colgate-Palmolive* (30/10/74)	<u>Operating profit</u> <u>Funds employed</u>
	<u>Net profit after tax</u> <u>Shareholders' funds</u>

adjusted for

 Parent Co.  
 Loans and  
 Pre-acquisition  
 Profits

TABLE 3.1 (CONTINUED)

Company	Ratio
Samuel Taylor (30/10/74)	<u>Profit before tax</u> Sales
	<u>Profit after tax</u> Sales
	<u>Earnings</u> Funds employed
Nestlé (7/11/74)	<u>Operating profit before tax</u> Funds employed
Berger (11/11/74)	<u>Profit before tax</u> Shareholders' equity
	<u>Profit after tax</u> Shareholders' equity
	<u>Profit before tax</u> Total assets
	<u>Profit after tax</u> Total assets
	<u>Profit before tax</u> Sales
	<u>Profit after tax</u> Sales
A. and K. Cement (14/11/74)	<u>Net profit after tax</u> Shareholders' funds
Containers* (18/11/74)	<u>Profit after tax and after interest</u> Shareholders' funds
	<u>Profit before tax and before interest</u> Total assets
	<u>Operating profit</u> Funds employed
	<u>Operating profit</u> Sales
	<u>Net profit</u> Sales
	<u>Net profit</u> Paid-up capital
	<u>Dividend paid</u> Net profit

TABLE 3.1 (CONTINUED)

Company	Ratio
Containers* (cont.)	$\frac{\text{Dividend paid}}{\text{Paid-up capital}}$
	$\frac{\text{Net profit}}{\text{Funds employed}}$
A.P.P.M.* (19/11/74)	$\frac{\text{Net profit after tax}}{\text{Shareholders' funds}}$
	$\frac{\text{Net profit before tax}}{\text{Total assets}}$
Blue Circle (29/11/74)	$\frac{\text{Profit from operations before taxes and interest}}{\text{Net funds employed}}$
	$\frac{\text{Profit from operations after } 47\frac{1}{2}\% \text{ tax, before interest}}{\text{Net funds employed}}$
Australian Estates (10/12/74)	$\frac{\text{Group profit}}{\text{Shareholders' funds}}$
Austral Motors (17/12/74)	Nil

\* Companies that have been subject to I.A.C. and/or R.B.A. comparisons (using their definitions) by the Prices Justification Tribunal.

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Net profit/Paid-up capital

Net profit/Shareholders' funds

Dividends paid/Net profit

Dividends paid/Paid-up capital.

These are contained in Tables 4.2.2 and 4.2.3 of the I.A.C. Annual Report 1973-74, while Table 4.2.1 lists *operating profit as a percentage of funds employed* as an indicator of profitability, and Table 4.2.4 lists only *operating profit/funds employed* and *operating*

*profit/sales* under the heading of "Profitability".<sup>2</sup>

It is apparent from these listings that *operating profit/funds employed* is the most widely used ratio employed by the I.A.C. The Commission also makes use of a return on shareholders' funds. These have been the major ratios examined by the P.J.T. when making comparisons using the I.A.C. definitions.<sup>3</sup> It is proposed to examine these two ratios as defined by the I.A.C.:

- (1) operating profit/funds employed, and
- (2) net profit/shareholders' funds.

Operating profit is defined as "net profit before tax plus interest paid on borrowed money less income from outside investments and less profit derived from other than manufacturing activities (for example, from the sale of fixed assets)"; and net profit is "net profit after tax, interest paid and including income from investments". Funds employed include "net fixed assets plus working capital, being current trade assets less short-term trade liabilities (not including bank overdraft or other borrowed money used in the business)".<sup>4</sup> Shareholders' funds represent paid-up capital, reserves, unappropriated profits and include interests of minority shareholders.<sup>5</sup>

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<sup>2</sup> These tables are listed in Appendix 4.2, "Profitability and Capital Structure of the Australian Manufacturing Sector", *Industries Assistance Commission Annual Report 1973-1974*, Australian Government Publishing Service, Canberra, 1974.

<sup>3</sup> This is shown in section 3 of this chapter, pp.71-147.

<sup>4</sup> *Industries Assistance Commission Annual Report 1973-1974*, *op.cit.*, p.87.

<sup>5</sup> The definition of "Shareholders' Funds" has been taken from the annual questionnaire sent to companies by the I.A.C. (see Appendix 2).



The definition of *operating profit/funds employed* is different to the first ratio presented in Chapter 2 (page 57) as being "suitable" for the measuring of profitability in prices justification. Funds employed includes shareholders' equity (including minority interests), long-term debt, short-term debt such as bank overdrafts, liabilities other than creditors, and accruals. However, it excludes *all* intangible assets, outside investments and non-operating assets. Cash at bank, short-term deposits, marketable securities and government bonds, even if held as part of working capital, are considered to be of a non-operating nature and are not included in capital employed.<sup>6</sup> Funds employed are calculated as at the end of the period rather than taking an average of the period. Operating profit is measured before tax with interest added back (which is consistent with loan capital being included in the base), and the exclusion of income from outside investments and profits derived from other than manufacturing activities is compatible with excluding outside investments and other non-operational assets from funds employed. Thus, the definition is purely an "operational one". It comprises that bundle of assets (excluding working capital in the form of cash, deposits, marketable securities and government bonds) that is used in the normal manufacturing operations of the company.

The second ratio, *net profit/shareholders' funds* is measured after tax, and is more of an "all-inclusive" profit measure on shareholders' funds than is *operating profit/funds employed*. In this

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<sup>6</sup> Personal communication with Mr. T.A. Walsh, Officer-in-Charge of the Cost and Financial Survey, I.A.C. The I.A.C. calculates "funds employed" from the following items in the Questionnaire (see Appendix 2).

- 1. Total net fixed tangible assets.
- plus 3. Stock on hand.
- plus 4. Trade debtors, accrued accounts and other debtors, etc.  
(including bills receivable).
- less 11. Trade creditors, accrued accounts and other creditors  
(including bills payable).

case, the numerator includes income from outside investments, non-operating profits (and losses), as well as profits payable to minority shareholders. It would be a measure of the total profits (irrespective of source) in any one period that is available either to shareholders or for retention in the company, as a percentage of shareholders' equity. The ratio differs from ratio 4 in Chapter 2 (page 57) because of its "all inclusive" nature. The numerator contains "non-operating" accounts. It is also measured on shareholders' equity at the end of the period.

The I.A.C. publishes an average series over time, of both of these profitability ratios, for the Australian manufacturing sector as a whole and for certain industry groups. The first ratio - *operating profit/funds employed* - is also subject, over time, to median and quarterly analysis of large firms in industry groups. It is little wonder that the P.J.T. adopted these ratios for profitability assessment, with such series available to use as a guidepost in comparing companies under inquiry. To the end of 1974, 12 companies out of 39 appearing at public hearings had been subject to comparisons with the I.A.C. series. The third section of this chapter examines, in detail, the performance of the Tribunal in using these ratios in its public inquiries.

In five public inquiries, the Tribunal has compared the company's rate of return with series provided by the R.B.A. The ratio considered is *net profit/average shareholders' funds*. But the definitions provided by the R.B.A. differ from those given by the I.A.C. In this case, net profit covers trading profit and income from investments, net of losses. Profits of a capital nature are excluded. The measure is after deducting taxation and adjustments are made for expenses that are usually an appropriation. Average shareholders' funds include

ordinary and preference capital, reserves and unappropriated profits, but exclude interests of minority shareholders. An average is calculated by adding the shareholders' funds at the end of the previous year to those at the end of the year under consideration and dividing by two.<sup>7</sup>

These comparisons carried out by the Tribunal, with the I.A.C. series and the R.B.A. series, should have at least meant that ratios with standard definitions were used. This would be an improvement on the diverse set of ratios considered by the Tribunal in its public inquiries for the purpose of prices justification. However, the Tribunal has not consistently carried out the recalculations to these definitions, and even when it has, the calculations have, on a number of occasions, been incorrect. Thus even if the comparison of a company's rate of return with those averages calculated by the I.A.C. and the R.B.A. was useful information for the Tribunal in its prices justification tasks, a number of public inquiries have been conducted using inaccurate information for such comparisons. This can be seen in the following analysis of rate of return measures in public inquiries.

### (3) THE RATE OF RETURN IN PUBLIC INQUIRIES HELD BY THE P.J.T.

*Inquiry 1: B.H.P. (10/8/73):*

In the submission to the Tribunal, B.H.P. presented the following for the steel industry section:--<sup>8</sup>

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<sup>7</sup> Reserve Bank of Australia, Statistical Bulletin Company Supplement, Sydney, January 1975, pp.1-2 and pp.32-33.

<sup>8</sup> The Broken Hill Proprietary Company Limited and Australian Iron and Steel Proprietary Limited, Submission to Prices Justification Tribunal, August 1973 (hereafter "B.H.P. Submission August 1973"), p.32.

"Total funds employed in the steel industry section (including long-term debt and other non current liabilities) net profits (after tax but before financing charges) and returns on funds for the years ended 31st May, 1972 and 31st May, 1973 are set out below:

	<u>1972</u> <u>\$ Million</u>	<u>1973</u> <u>\$ Million</u>
Funds employed <sup>9</sup>	1,088.713	1,105.940
Net profit	15.466	22.776
Return on funds	1.4%	2.1%

However, the numerator in this return on funds calculation should be analysed as follows. The *B.H.P. Annual Report for 1973* on page 20, discloses that -

	<u>\$000</u>
Net profit after tax	79,757
add interest	<u>26,236</u>
Net profit after tax plus interest	<u>105,993</u>

while page 34 shows, under "Sectional Profit Results", that total sectional profit contribution is \$92,763,000 of which \$22,776,000 (profit contribution for the steel industry) is one part. However, in the reconciliation of industry sections, the following is shown (page 34).

	<u>\$000</u>
Total sectional results	92,763
Financing charges on long-term finance (NET OF TAX)	<u>13,006</u>
Consolidated net profit	<u>79,757</u>

<sup>9</sup> To prove the definition of funds employed consistent with the figures given by B.H.P. to the Tribunal, the 1973 B.H.P. Annual Report figures for -

Shareholders' equity	\$1,183,764,000
add Non-current liabilities	<u>503,562,000</u>
Funds employed	<u>\$1,687,326,000</u>

were compared with the figures given on page 7 of the Tribunal's B.H.P. Report. On page 7, \$1,687,326,000 was shown as "total sectional results" of which the Steel Industry section was one part, i.e. \$1,105,940,000. This figure was then used in calculating the return on funds for the Steel Industry section to give 2.1% return.

The reconciliation discloses that the \$92,763,000 includes \$13,006,000 financing charges which are *net of tax* (and which have been allocated over the various sections); note that the total interest expense is \$26,236,000. Therefore, the \$22,776,000 steel industry contribution must also be calculated by deducting financing charges which are net of tax. This means that the definition of the rate of return which B.H.P. are using and which was quoted by the Tribunal is *net profit, after tax but before financing charges (which are net of tax)/total funds employed* (hereafter called "Definition A"), and not *net profit, after tax but before financing charges/total funds employed* (hereafter called "Definition B"), as has been stated by B.H.P. in their submission (page 32) and the Tribunal's Report (pages 7 and 8). Neither the B.H.P. submission, nor the P.J.T. Report mentioned that the above return on funds calculation was made with profits being defined as after tax, but before financing charges that are *net of tax*. In fact, the only place in the B.H.P. Annual Report (1973) that explicitly defines the financing charges as *net of tax* is the one place on page 34 which reconciles the total sectional results with the group results. The B.H.P. Annual Report for 1973 does not directly disclose the financing charges for the steel industry section. However, the Report does disclose that net profit after tax for the steel section is \$13,856,000. Since net profit after tax and before financing charges which are net of tax was shown as \$22,776,000, the financing charges (net of tax) must have been the difference - i.e. \$8,920,000. Given that the Company's rate of tax for 1973 is 47.5%, the financing charges for the steel section must have been approximately

$$\frac{1}{1-0.475} \times \$8,920,000 = \$16,990,000.$$

Thus the profit after tax and before financing charges (Definition B)

must equal:

Profit after tax	\$13,856,000
add financing charges	<u>16,990,000</u>
Profit after tax and before financing charges	<u>\$30,846,000</u>

From these figures it is possible to calculate the return on funds as quoted in the Inquiry (Definition B), for the steel industry section:

Using Definition A:

Net profit, after tax, before financing charges which are net of tax/total funds employed

$$= \frac{\$22,776,000}{\$1,105,940,000} = 2.1\%$$

Using Definition B:

Net profit, after tax, before financing charges/total funds employed

$$= \frac{\$30,846,000}{\$1,105,940,000} = 2.8\%$$

Thus the steel industry result of 2.1% is understated by 0.7 percentage points, the absolute difference to profit being some 8 million dollars.<sup>10</sup>

The difference in these definitions of the rate of return have been discussed in Chapter 2. In that chapter, ratio 5,  $r(1 - t)$ , is equivalent to Definition A (above), and ratio 3,  $r(1 - t) + itB/B+E$ , is equivalent to Definition B (above). Therefore, B.H.P. are using a definition which ignores the fact that interest is an allowable deduction for taxation purposes. (This difference in the two rates of return is equal to  $itB/B+E$ ). However, the question is : was the Tribunal aware that the 2.1% return was calculated according to Definition A (or ratio 5) and not Definition B (or ratio 3) as was implied by the report? It would seem highly unlikely.

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<sup>10</sup> This analysis was presented in Leech, Stewart, A., "Profitability, Rates of Return and Prices Justification", *op.cit.*, pp.153-155.

Seemingly the Tribunal accepted the B.H.P. definition as it was stated by the Company. In their report on B.H.P., the Tribunal states "These figures<sup>11</sup> have been set out previously in this report and indicate that so far as its steel-making activities are concerned, the Companies were less profitable in the past financial year than large Australian companies on average in earlier years."<sup>12</sup> However, the report does not say how the measurements for the "large Australian companies on average" were calculated. Were the same definitions of "funds employed" and "net profits" used in that calculation? If so, the definition, at least, would have been comparable. This does not appear to have been the case with the second public inquiry conducted by the P.J.T. - that is the inquiry into prices proposed by A.P.M. (Since other data may have been submitted to the Tribunal, this analysis may only be criticism of lack of disclosure by the Tribunal in their public reports. However, if this is the case, it would seem essential that the Tribunal make quite clear what measures and definitions were used.)

*Inquiry 2: A.P.M. (24/10/73):*

If the P.J.T. found the definitions used by B.H.P. acceptable for their specific purpose, and one may be led into thinking this was the case since there was no obvious attempt to change them, the A.P.M.

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<sup>11</sup> "these figures" refer to the ones reported by B.H.P. and used to calculate the 2.1% return, but adjusted to reflect taxation depreciation including notional depreciation on mining assets instead of the peculiar depreciation charge B.H.P. make use of. While this alters the final rate of return figure, in no way does it alter the definitions of "funds employed" and "net profits" as described above. See pp. 8, 16, 27 of the Prices Justification Tribunal Report on B.H.P., 10/8/73, *op.cit.*

<sup>12</sup> Prices Justification Tribunal Report on B.H.P., 10/8/73, *op.cit.*, p.27.

decision did not confirm this supposition. The A.P.M. submission included the following under "Section 5.0 Return on Funds Invested".<sup>13</sup>

"5.1 Returns from Pulp and Paper-Making

	<u>Years ended 30th June</u>			
	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>
Net Sales Value \$m.	121.2	125.3	133.9	152.1
Average Fixed Assets at cost or valuation - \$m.	215.7	226.8	243.3	294.2
Profit Return (before interest charges and Tax) on average Fixed Assets at cost or valuation - %	8.2%	7.4%	6.9%	5.9%

5.2 Total A.P.M. Profitability and Returns

	<u>Years ended 30th June</u>			
	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>
Before Tax \$m.	16.3	15.1	15.0	15.9
Less: Tax \$m.	4.3	2.5	1.8	1.6
After Tax \$m.	12.0	12.6	13.2	14.3
Profit before tax return on average shareholders' funds - %	15.1%	13.0%	11.7%	9.4%
Profit after tax return on average shareholders' funds - %	11.1%	10.9%	10.3%	8.4%"

Average shareholders' funds were not defined in the submission but it is evident from the 1969 to the 1973 A.P.M. Annual Reports that the average figures must have included Paid-up Capital plus Capital and Revenue Reserves, (which include retained profits); and adjusted for changes over the period to give an average.

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<sup>13</sup> Australian Paper Manufacturers Limited and Cellulose Australia Limited, "Case for Selling Price Increase", Submitted to Prices Justification Tribunal on 6th September, 1973 (hereafter "A.P.M. Submission, September 1973"), pp.15-16.



Here we have at least three measures of the rate of return:

- (1) Net profit before tax plus interest/average fixed assets  
(at cost or valuation)

= 5.9% (for 1973)

- (2) Profit before tax/average shareholders' funds

= 9.4% (for 1973)

- (3) Profit after tax/average shareholders' funds

= 8.4% (for 1973)

where "average shareholders' funds" equals:

Paid-up Capital

plus Capital and Revenue Reserves

and "profit" is *net* profit (ascertained from page 28 of the A.P.M. Annual Report for 1973).

The P.J.T. report on A.P.M. displayed the 1973 figures (as shown in 5.1 and 5.2 above), and described these as "return on funds invested" (pages 5-6). Under the heading of "Profitability" (page 23), the 5.9%, 9.4%, 8.4% and the first two of these returns recalculated to eliminate the effects of the 1972 asset valuation are once again quoted. These three measures all differ from that accepted by the Tribunal in the B.H.P. case. No obvious attempt has been made to calculate the rate of return as used in the B.H.P. decision - at least none was published or any indication given that other rate of return calculations were made. The A.P.M. definitions have now been accepted for the same investigatory purpose as the B.H.P. case, where different definitions were used. It would appear that the Tribunal either considers the difference unimportant, that there is no theoretical justification for one being preferable to the other, or that, in the name of expediency, it is best to accept whatever figures the company concerned can supply! These considerations are

important, and it is very necessary to justify them one way or the other.

The Tribunal went one step further in the A.P.M. Report. After quoting the profit returns, they state that "Comparisons have been made with the series of profitability published by the Tariff Board and we are of the opinion that the figures for A.P.M. are not unduly high compared with the profitability of other Australian industries."<sup>14</sup> This immediately brings to the surface the question of whether or not the A.P.M. definitions were comparable with those given by the (then) Tariff Board. From the latter's definitions, it appears that only one of the seven ratios it calculated would be comparable with any of the three measures used by A.P.M. and adopted by the P.J.T. in their Report. This would be: *net profit/shareholders' funds*. All of the other six ratios would require recalculation from published reports or other information supplied by the Companies concerned. This arises from the fact that the I.A.C. definitions of "operating profit" and "funds employed" are different from any of those supplied by A.P.M. in the three ratios quoted. The shareholders' funds definition by the Commission would be similar to that used by A.P.M. (i.e. paid-up capital plus reserves). Since no indication is given in the Tribunal's Report on A.P.M. as to what calculations, if any, were made, we are at a loss to know which I.A.C. ratios were used, and whether or not these were properly comparable with the A.P.M. ratio definitions.<sup>15</sup>

*Inquiry 3: G.M.H. (21/12/73):*

One of the main reasons given by G.M.H. in support of the

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<sup>14</sup> Prices Justification Tribunal Report on A.P.M., 24/10/73, *op.cit.*, p.23.

<sup>15</sup> This analysis was presented in Leech, Stewart A., "Profitability, Rates of Return and Prices Justification", *op.cit.*, pp.155-157.

proposed price rises was the "inadequate and further diminishing return upon funds employed".<sup>16</sup> This was shown by a comparison, from 1965-1972, of the following ratio percentages:-

- (1) net profit after tax/sales
- (2) net profit after tax/paid-up capital
- (3) net profit after tax/shareholders' funds.

G.M.H. had claimed that the return on shareholders' funds for 1972 (6.5%) was too low when compared with the average return on shareholders' funds of about 8.8% earned by manufacturing industries generally for the year 1970-1971. This average was obtained from the R.B.A. Statistical Bulletin Company Supplement, December 1972.<sup>17</sup>

However, Professor Bennett (Monash University) stated at the hearing that the methods of depreciation used by the Company, the Company's practice of transferring profits on sale of fixed assets to reserves and not crediting them to profits, and the fact that the Company did not operate with long-term debt, made the return on shareholders' funds "... a little difficult to compare with other manufacturing companies and for those reasons the Company's figures were slightly conservative".<sup>18</sup> In addition, to these comments by Professor Bennett, an examination of the denominator of the return on shareholders' funds, shows that G.M.H. do not use an "average" figure, which would be necessary if a direct comparison with the Reserve Bank's definition is to be made. This alone would raise the 6.5% quoted by the Company to 6.7%, (i.e.  $\$15,328,197 / \$227,924,806 = 6.7\%$ , instead of

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<sup>16</sup> General Motors-Holden's Pty. Limited and General Motors-Holden's Sales Pty. Limited, Matter No. N73/770, Report by Prices Justification Tribunal, 21/12/73, p.2.

<sup>17</sup> *ibid.*, pp.37-38.

<sup>18</sup> *loc.cit.*

\$15,328,197/\$235,588,904 = 6.5%). A return of profits as a percentage of "funds employed" was also quoted for 1972, but no specific definitions of the terms were attempted.

*Inquiry 4: S.A. Brewing Company (16/1/74):*

The Tribunal stated its interest in funds invested in hotel operations as compared with brewing operations. In 1973, the S.A. Brewing Company had a profit of 64.1% on funds employed in its brewing operations, but only 4.98% in its hotel operations. Neither profit nor funds employed were defined.<sup>19</sup>

The rate of return on shareholders' funds were compared from 1969-1973, and were stated, by the Tribunal, as being "... indicative of the Company's continuing successful operations".<sup>20</sup> Some consideration had been given to modifications of the 1972 and 1973 rates due to changes in accounting methods in treating amounts expended on hotel rehabilitation and dividends which the Holding Company received on investments.

Comparisons were made between Company rates of return and rates of return applicable to the group of manufacturing companies published by the Reserve Bank. The Company had also drawn comparisons from a series collected by Ian Potter and Co., which indicated a return on shareholders' funds for 55 companies. The details of these series were not disclosed in the P.J.T. Report except for pointing out that the rate of return calculated by the Reserve Bank was 8.8%, and the

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<sup>19</sup> The South Australian Brewing Company Limited and The Adelaide Bottle Company Pty. Limited, Matter No. N73/883, Report by Prices Justification Tribunal, 16/1/74, p.10.

<sup>20</sup> *ibid.*, p.11.

Ian Potter and Co. return was 13.4%. The only comments made by the Tribunal on these averages were:-

"These figures are set out simply to indicate what it is the Tribunal is invited to consider in relation to rates of return on funds employed. The broad proposition that merely because a company may be more efficient than the average company the Tribunal should require it to absorb increases in production costs, is not acceptable. However, if in our consideration of a particular matter there is a case made out for a company to absorb otherwise allowable costs that case will be based upon the merits. This is quite distinct from a "formula" approach."<sup>21</sup>

There was no attempt, in the public report, to discuss the items included in the numerator and the denominator of these rates of return, nor was there any reasons offered for the difference between the 8.8% and the 13.4%.

*Inquiry 5: B.H.P. (28/3/74):*

The second B.H.P. inquiry was based on a submission by the Company that relied solely on recouping increases in certain costs which had occurred since those taken into account in the previous inquiry. No margin for profit had been added to the cost increases, although B.H.P. stated that "... the addition of such a margin would have been justified, and in fact, if a company were to continue pricing merely on the basis of cost increases without margins for profit, its profitability would deteriorate and eventually return on investment would virtually disappear".<sup>22</sup>

The Tribunal considered it unnecessary to examine material relating to the Company's profit position again, because this had been examined at the last inquiry (within 3 months) and the Company

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<sup>21</sup> *ibid.*, p.12.

<sup>22</sup> The Broken Hill Proprietary Company Limited and the Australian Iron and Steel Proprietary Limited, Submission to Prices Justification Tribunal, February 1974, pp.2-5.

was still within the same financial year.<sup>23</sup> Thus there was no examination of the return on capital, although the profitability of the steel section was discussed in broad terms for the half year ended November 1973.<sup>24</sup> A statement of projected profits and returns for the steel industry section was submitted to the Tribunal in confidence, and does not appear in the public report or submission. However, the B.H.P. submission made it quite clear that these profits and rates of return were so calculated to be substantially the same as those submitted at the first inquiry.<sup>25</sup>

It was also at this inquiry that the Tribunal listed, in general terms, some of the main factors to be used as guidelines in considering proposed increases in prices. This was the first inquiry that the Tribunal had explicitly stated that rate of return comparisons with the I.A.C. and R.B.A. series (using their definitions) were useful in assessing a company's profitability. These guidelines have been fully discussed in Chapter 1 (pp.26-29).

*Inquiry 6: C.U.B. (9/4/74):*

The C.U.B. submission to the P.J.T. included the following table:-<sup>26</sup>

	<u>"Shareholders' Funds and Net Profit</u>			
	<u>1973</u>	<u>1972</u>	<u>1971</u>	<u>1970</u>
Shareholders' Funds \$m.	131.5	107.5	102.6	86.9
Net Profit After Tax \$m.	11.5	9.8	8.9	8.0

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<sup>23</sup> Prices Justification Tribunal Report on B.H.P., 28/3/74, *op.cit.*, pp.20-21.

<sup>24</sup> *ibid.*, pp.58-63.

<sup>25</sup> *ibid.*, p.6.

<sup>26</sup> Submission of Carlton and United Breweries Limited (C.U.B.), 30/1/74, p.24.

	<u>1973</u>	<u>1972</u>	<u>1971</u>	<u>1970</u>
Percentage Return on Shareholders' Funds	8.7%	9.1%	8.7%	9.2%
Reserve Bank Manufacturing Industry Constant Group	N.A.	8.7%	8.8%	8.8%
Tariff Board Australian Manufacturing Industry Average Return	N.A.	9.0%	9.6%	9.6%
Tariff Board Australian Beverage and Malt Industry Average Return	N.A.	10.9%	10.9%	N.A."

This table, with the exception of the last line, was repeated in the Tribunal's Report.<sup>27</sup> In relation to the table, the Tribunal stated that the "... figures for the Company are established but this is not to say their relationship to Reserve Bank and Tariff Board percentages must be accepted as of course".<sup>28</sup> No reason was given. This appears to be somewhat inconsistent with the Tribunal's pronouncement in the previous inquiry that such comparisons were "relevant" and "useful", despite the limitations that were mentioned. Furthermore, a closer examination of the figures in the table using the C.U.B. Annual Report of 1973, reveals that the comparisons are incorrect. For example, the *net profit/shareholders' funds* ratio, as per I.A.C. definitions should be:

$$\$11,685,624 / \$131,483,143 = 8.9\%^{29}$$

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<sup>27</sup> Carlton and United Breweries Limited, Matter No. N74/1825, Report by the Prices Justification Tribunal, 9/4/74, p.18.

<sup>28</sup> *loc.cit.*

<sup>29</sup> Carlton and United Breweries Limited, Annual Report for 1973, pp.10-11 and p.14. The figures shown in the table submitted to the Tribunal are extracted from the Profit and Loss Account and Balance Sheet - *not consolidated*.

It would appear that the 8.7%, calculated by the Company and accepted by the Tribunal, arises because "surplus on the sale of fixed assets" is omitted from the numerator, i.e.  $\$(11,685,624-130,195)/\$131,483,143$  = 8.7% (rounded down).

Additionally, the 8.7% cannot be comparable with the definitions used by the Reserve Bank because that institution uses "average" shareholders' funds. To conform with the Reserve Bank definition, the rate of return should be calculated as follows:-

<u>Numerator:</u>	<u>\$</u>
Trading Profit	18,629,373
plus: Income from Investments	<u>2,076,056</u>
	20,705,429
less: Provision for Taxation	<u>9,150,000</u>
	<u>11,555,429</u>
<u>Denominator:</u>	
Shareholders' Funds 1972	107,530,625
Shareholders' Funds 1973	131,483,143
Average Shareholders' Funds 1972-73 =	\$119,506,883.
<u>Net Profit</u>	
Average Shareholders' Funds	$\frac{11,555,429}{119,506,883} = 9.7\%$

There was no attempt to calculate a ratio based on total funds employed. The *net profit/shareholders' funds* ratio was the only rate of return considered; and this ratio received very little scrutiny by the P.J.T.

*Inquiry 7: Cascade Brewery (19/4/74):*

The Company submission relied on the activities of the Group (brewing, bottle-hiring and hotel activities). It was stated that the capital structure of the Group, which is divided into several



companies, had been created because of the historical development of the Company, and comparisons of profitability to funds employed by each Company tends to be unrealistic.<sup>30</sup> The Tribunal accepted this. Profitability ratios for the Cascade Group, based on the figures set out in the consolidated accounts, were shown as follows:

	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>
Net profit to shareholders' funds	8.0	8.6	8.7	8.3	9.0
Net profit to total funds employed	5.6	5.8	5.8	5.7	6.1

A table of ratios of total liabilities to shareholders' funds of several Australian brewing companies was also submitted by the Company to indicate that the gearing between shareholders' funds employed and external liabilities was within generally accepted limits.<sup>31</sup>

The Tribunal accepted the two rate of return ratios presented by the Company as indicating profitability. It stated that the ratios indicated that "... profit from the combined businesses is not unduly high. The net profit to shareholders' funds ratio excepting for a slight decline in 1972 has been steadily progressive over the last five years and does not indicate any marked improvement from a fairly average situation".<sup>32</sup> This was the only analysis of the ratios in the Tribunal's public report. There was no attempt to make comparisons with either the I.A.C. or the R.B.A. series; nor was there any discussion of how the numerator and denominator in the ratios was

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<sup>30</sup> Cascade Brewery Company Limited, Submission to Prices Justification Tribunal, 25/2/74, p.2 and p.4; and The Cascade Brewery Company Limited, Matter No. N74/1674, Report by Prices Justification Tribunal, 19/4/74, p.5.

<sup>31</sup> Cascade Submission, *ibid.*, section M and N, p.2.

<sup>32</sup> Prices Justification Tribunal Report on Cascade, 19/4/74, *op.cit.*, p.11.

defined. An examination of the Cascade Annual Report for 1973<sup>33</sup> revealed that return on shareholders' funds as per I.A.C. definition would equal 8.96% (\$1,288,026/\$14,367,469). The Cascade calculation of profit did not exclude a loss on the sale of plant. The return on total funds employed differed in many respects from the I.A.C. definitions. This can be illustrated as follows:-

Company definition

<u>Denominator:</u>	\$
Current Assets	5,356,016
Fixed Assets	15,658,336
Investments	<u>310,722</u>
Total Funds Employed	<u>21,325,074</u>

Numerator:

Profit From Trading	2,465,668
add: Income From Investments	<u>38,541</u>
	2,504,200
Provision For Income Tax	<u>1,212,844</u>
Net Profit After Tax	<u>1,219,365</u>

$$\frac{\text{Net profit after tax}}{\text{Total funds employed}} = \frac{1,219,365}{21,325,074} = 6.1\%$$

I.A.C. definition

<u>Denominator:</u>	\$
Net Fixed Assets	15,658,336
add: Current Trade Assets (Stock, Debtors)	<u>5,345,712</u>
	21,004,048

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<sup>33</sup> The Cascade Brewery Company Limited Annual Report and Balance Sheet, 31 March, 1973. The calculations which follow were extracted from the Consolidated Profit and Loss Statement (p.7) and the Consolidated Balance Sheet (pp.10-11).

	\$	
b/f.	21,004,048	
less: Creditors and Accrued		
Accounts	<u>1,257,689</u>	
Funds Employed	<u>19,746,359</u>	
<u>Numerator:</u>		
Net Profit Before Tax	2,504,209	
add: Interest	<u>133,881</u>	
	2,638,090	
less: Income From Outside		
Investments	<u>38,541</u>	
Operating Profit (Before Tax)	<u>2,599,549</u>	
Operating profit (before tax)	<u>2,599,549</u>	
Funds employed	<u>19,746,359</u>	= 13.16%.

*Inquiry 8: Shell (3/5/74):*

The P.J.T. report relating to the Shell Group of Companies examined the profits of the Royal Dutch Shell Group as well as the Shell Group in Australia.<sup>34</sup> For the Royal Dutch Petroleum Company, statistics showing net income, net assets and sale volume were compared over the period 1969-1973. In the Annual Report of the Royal Dutch Petroleum Company, it was stated that:

"The return on average net assets improved to 17.3% from the unsatisfactory level of 7.2% in 1972. However, these rates of return are overstated in real terms; inflation and exchange rate variations distort comparisons over time. Assets are shown in the balance sheet, and depreciation is calculated, on historical book values, while the net profit is shown in current depreciated sterling."<sup>35</sup>

The Tribunal did not accept this statement in its entirety and commented that part of the increase would have been gained due to increasing

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<sup>34</sup> Shell Australian Securities Limited and Related Companies, Matter No. N74/42, Report by Prices Justification Tribunal, 3/5/74, pp.49-57.

<sup>35</sup> *ibid.*, p.51.

prices above those that would prevail in a truly competitive market, or removing discounts.

In examining the profitability of the Shell Group of Companies, the P.J.T. report presented the following data:-<sup>36</sup>

"The relevant figures prepared by the Companies and by Counsel assisting the Tribunal together with the Tariff Board statistics are as follows:

Comparative Statistics -

Net Profit to Shareholders Funds

	<u>1970-71</u>	<u>1971-72</u>	<u>1972</u>
All industry	9.6	9.0	
Petroleum refining, petroleum and coal	5.7	5.5	

(Source: Tariff Board Annual Report for year 1972-1973)

Shell Group

(As prepared by Counsel Assisting the Tribunal) 9.3

(As prepared by the Companies) 9.3

Operating Profit to Funds employed

All industry	12.1	11.5	
Petroleum refining, petroleum and coal	9.0	9.2	

(Source: Tariff Board Annual Report for year 1972-1973)

Shell Group

(As prepared by Counsel Assisting the Tribunal) 12.57

(As prepared by the Companies) 10.9

Net Profit to Paid up Capital

All Industry	22.7	21.9	
Petroleum refining, petroleum and coal	16.3	16.3	

(Source: Tariff Board Annual Report for year 1972-1973)

1972

Shell Group

(As prepared by Counsel assisting the Tribunal) 34.35

(As prepared by the Companies) 33.95

Note All figures relating to the Shell Group are for the calendar year 1972"

<sup>36</sup> *ibid.*, pp.54-55.

Both the Counsel assisting the Tribunal and the Shell Company claimed that the statistics shown in this report were calculated on the same basis as the I.A.C. definitions. Yet they differ! The *operating profit/funds employed* ratio equals 12.57% according to the Tribunal and only 10.9% according to the Company. Similarly, *net profit/paid-up capital* is shown as 34.35% (Tribunal) and 33.95% (Shell). Thus, from the one set of published annual report figures for 1972, the same definition results in conflicting figures. It would appear that either the Tribunal, or the Shell Company, or both, have not followed the definitions as set out by the I.A.C. To reconcile the two calculations the Shell Company submitted a document, to the inquiry, containing the "points of difference". An examination of this discloses that both the Tribunal and the Company have erred in their calculations. A correct statement of the 1972 Shell results in terms of the I.A.C. definitions of *operating profit/funds employed* would appear as follows:-<sup>37</sup>

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<sup>37</sup> This analysis is a revised version of that presented in Leech, Stewart A., "The Prices Justification Tribunal and Profitability Assessment", *Chartered Accountant in Australia*, Vol. 46, No. 4, October 1975, pp.10-15. The revision was made after clarification of the I.A.C.'s definitions with respect to Shell's accounts had been obtained from the I.A.C. The figures included in this analysis were obtained from the 1972 Shell Accounts presented in Shell Australian Securities Ltd. and Related Companies, Submission to Prices Justification Tribunal, February 1974, Section 3, pp.5.1-5.2, 6.1, and 7.1-7.9. They are equivalent to those contained in the Shell Group of Companies Annual Report 1972, (Consolidated Accounts), except for rounding errors.

<u>Operating Profit:</u>	<u>\$000</u>
Net profit before tax	37,566
add: expenses not classed by I.A.C. as relating to manufacturing:- <sup>38</sup>	
exploration expenditure written off	8,571
production dry hole costs written off	894
amortization of capitalized exploration costs	118
preoperational expense recovered	<u>(7)</u>
	47,142
add: interest	<u>5,395</u>
	52,537
less: income from outside investments:-	
dividends	44
interest on loans and	
short-term deposits	<u>233</u>
	<u>277</u>
	52,260
less: profit (net) on the sale of fixed assets	<u>52</u>
Operating profit as per I.A.C. definition	<u>52,208</u>
<u>Funds Employed:</u>	
Net fixed assets	261,038
Current trade assets (stock, debtors)	<u>117,530</u>
	378,568
less: creditors and accrued accounts	<u>34,911</u>
Funds employed as per I.A.C. definition	<u>343,657</u>

These calculations result in a return (*operating profit/funds employed*) of 15.19%, which differs from both the Tribunal's and the Company's returns.

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<sup>38</sup> Personal communication with Mr. T. Walsh, I.A.C.

The reconciliation of the Tribunal's and Company's calculations with the statement of operating profit and funds employed shown above illustrate these differences:

<u>The P.J.T. Calculations</u>	<u>Adjustment</u>
<u>Operating Profit:</u>	<u>\$000</u>
Deducted profit attributable to minority interests (+)	269
Omitted to add back interest on:	
debentures and fixed term loans	(+) 1,103
interest on other current accounts	(+) 28
Omitted to add back net expenses not classed by the I.A.C. as relating to manufacturing	(+) 9,576
Omitted the deduction of "income from outside investments"	(-) 277
Omitted the deduction of "profit on the sale of fixed assets"	(-) 52
Adjustment to conform with I.A.C. definitions	(+) <u>10,647</u>
<u>Funds Employed:</u>	
Omitted other debtors	(+) <u>13,254</u>
Adjustment to conform with I.A.C. definitions	(+) <u>13,254</u>
<u>The Shell Company Calculations</u>	<u>Adjustment</u>
<u>Operating Profit:</u>	<u>\$000</u>
Deducted extraordinary expense	(+) 140
Omitted to add back net expenses not classed by the I.A.C. as relating to manufacturing	(+) 9,576
Omitted the deduction of "income from outside investments"	(-) 277
Omitted the deduction of "profit on the sale of fixed assets"	(-) 52
Adjustment to conform with I.A.C. definitions	(+) <u>9,387</u>
<u>Funds Employed:</u>	
Included outside investments	(-) 1,719
Included intangible assets	(-) 56,374
Included related corporation debtors	(-) 778
Included long-term receivables	(-) 7,861
Included cash on hand and at bank	(-) 3,722
Included short-term securities	(-) 6,000
Included a deduction for current provisions	(+) <u>28,760</u>
	(-) <u>47,694</u>

Thus the Tribunal have understated operating profit by \$10,647,000 and funds employed by \$13,254,000. This resulted in a rate of return of  $\$41,561/330,403 = 12.57\%$ , an understatement of 2.62 percentage points. On the other hand, the Shell Company have understated operating profit by \$9,387,000 and overstated funds employed by \$47,694,000. This has resulted in a rate of return calculation of  $42,821/391,350 = 10.9\%$ , an understatement of 4.29 percentage points.

The Shell Company also submitted ratios showing *net profit after tax plus interest after notional tax on the interest/total share capital, reserves and net amounts owing to related companies overseas, and net profit after tax plus interest after notional tax on the interest/total assets employed (excluding minority interests)*.<sup>39</sup> The former was 7.0% and the latter equalled 5.4% for 1972. The companies said that they regarded the former (7.0%) as the main indicator of overall return.<sup>40</sup> This ratio is similar in concept to that submitted by B.H.P. and discussed in Chapter 2 (page 41) as ratio 5.

In addition to these rate of return ratios, the Tribunal stated that "... to avoid some of the problems associated with calculating profitability we have taken the course in this instance of examining the trading statements of the Companies".<sup>41</sup> These accounts were submitted in confidence. However, from these figures, the Tribunal approximated the level of sales revenue which the Company would have recouped if the proposed price increases had been in effect for 1974. Projected deductions were made for costs, duties, taxes and expenses,

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<sup>39</sup> Shell Submission, February 1974, *op.cit.*, Section 3, p.2.

<sup>40</sup> Prices Justification Tribunal Report on Shell, *op.cit.*, p.55.

<sup>41</sup> *loc.cit.*



and the resulting projected trading profit was used as a guide to the likely effect on profit of the proposed increases in prices after allowing for domestic cost increases.<sup>42</sup> While such calculations would appear to be useful, the question of the suitability of a rate of return on capital employed as an indicator of profitability again remained unanswered.

*Inquiry 9: Preservene (10/5/74):*

The application by Preservene Pty. Ltd., to increase prices was based on increases in costs (excluding profit margins). There was no "accounting rate of return" submitted to the public hearing, and the Tribunal's report does not contain a section on profitability.<sup>43</sup>

However, under the heading of "profitability" in the public submission, the Company did state that the target for profitability was based on the ratio

$$\text{return on investment} = \frac{\text{Net profit after tax}}{\text{Total shareholders' funds}} = 14\%.$$

Preservene further stated that "... this Target for Profitability is considered in excess of the average for all Australian industries of 8.3% but we believe rightfully so".<sup>44</sup> The only mention of profitability in the Tribunal's report was contained in the "General" section:

<sup>42</sup> *ibid.*, p.50.

<sup>43</sup> See Preservene Pty. Ltd., Matter No. N74/55, Report by Prices Justification Tribunal, 10/5/74, and Preservene Pty. Ltd., Application for Price Increase, Submission to Prices Justification Tribunal.

<sup>44</sup> Preservene Submission to Prices Justification Tribunal, *op.cit.*, p.13.

"In considering the impact of the claimed annualised cost increases upon the Company's operations we have paid regard to confidential financial and other information made available to us as well as to all the material presented at the public inquiry. Without discussing the details, we have examined, amongst other things, the Company's general financial position, its budgeted revenue and profit situation, its productivity and the effects likely to be achieved by the price increases sought. Alternatively we have considered the implications flowing from price rises lower than those proposed by the Company."<sup>45</sup>

From this "analysis", the Tribunal concluded that a weighted average increase in prices of 8.5% would be justified, instead of a 9.98% increase.

*Inquiry 10: Bradmill (13/5/74):*

This submission was based on price proposals to cover increased raw material costs. However, the profitability of the Companies was considered, and the Tribunal's report outlined the following ratios that were submitted by the Companies:<sup>46</sup>

- (1) Net operating profit/sales,  
where net operating profit equalled operating profit before tax plus interest on borrowed monies.
- (2) Net profit after tax/shareholders' funds  
(before deducting minority interests).
- (3) Net profit after tax/shareholders' funds  
(after deducting minority interests).

The calculations were as follows:-

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<sup>45</sup> Prices Justification Tribunal Report on Preservene, *op.cit.*, p.12.

<sup>46</sup> Bradmill Industries Limited and Subsidiary Company Davis Coop and Co. Limited, Matter No. N74/1788 and Tara Towels Pty. Limited, Matter No. N74/1789, Report by Prices Justification Tribunal, 13/5/74, p.12.

<u>Year</u>	<u>Ratio - %</u>		
	<u>(1)</u>	<u>(2)</u>	<u>(3)</u>
1970-1971	7.8	7.2	6.8
1971-1972	6.8	6.0	5.9
1972-1973	8.2	6.6	6.5

Comparisons were not made with the I.A.C. or the R.B.A. series. It would seem that the Company was either uncertain as to which rate of return on shareholders' funds (before or after minority interests) was needed, or believed that both provided useful information. The Tribunal's report did not discuss the definitions.

*Inquiry 11: Lever and Kitchen (15/5/74):*

Lever and Kitchen Pty. Limited ("the Company") is a division of the Unilever Australia Pty. Ltd. group. The examination of "The Unilever Australia Groups and Profitability" by the P.J.T. in their public report<sup>47</sup> revealed that for 1973, profit before tax was \$7,838,835, net profit after tax was \$3,810,215 and total net assets were \$46,243,635 for the Unilever Australia Group. Comparable rounded figures for Lever and Kitchen Pty. Ltd. were \$4.6 million, \$2.2 million and \$12.1 million respectively. It was also stated that the Lever and Kitchen division contributed 59% of the operating profit using only 26% of the assets of Unilever Australia. The Tribunal commented that these figures illustrate the special position the Company occupies in the Group.

The public submission by Lever and Kitchen did not include any rate of return ratios.<sup>48</sup> However, apparently the Tribunal did

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<sup>47</sup> Lever and Kitchen Proprietary Limited, Matter No. N74/1766, Report by Prices Justification Tribunal, 15/5/74, pp.16-18.

<sup>48</sup> Lever and Kitchen Proprietary Limited, Submission to the Prices Justification Tribunal, February 1974.

compare some ratios with the I.A.C. averages. In their report, they state that:

"In this matter, as in others, comparisons have been made between the Company's profitability and average profitability figures published by the Tariff Board. It has been stated by the Tribunal that such comparisons may be of limited value in particular cases and this is so of figures produced by the Reserve Bank. There are so many variables as between individual companies that acceptance of the comparisons as of course can be misleading and accordingly they must be treated with caution. Nevertheless, without being binding, the comparisons may provide some useful indicator of a Company's place overall."<sup>49</sup>

With the exception of the above comments and the net profit and net asset figures quoted by the Tribunal, there was no other analysis of profitability or mention of the rate of return on capital employed.

*Inquiry 12: Bunge (24/5/74):*

The Bunge (Australia) Pty. Ltd. Inquiry disclosed that the Company had a nil return before tax on shareholders' funds employed. The following extract from the Company's accounts for 1971-1973 was quoted in the Tribunal's report.<sup>50</sup>

	<u>1971</u>	<u>1972</u>	<u>1973</u>
Sales turnover	\$6.95m.	\$7.8m.	\$8.9m.
Pre tax profit (loss)	(\$1.23m.)	\$.088m.	\$.068m.
Pre tax profit (loss) after interest	(\$1.48m.)	(\$.130m.)	(\$.158m.)
Total shareholders' funds employed (incl. loans)	\$7.414m.	\$7.614m.	\$7.845m.
% return before tax on shareholders' funds employed	nil	nil	nil

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<sup>49</sup> Prices Justification Tribunal Report on Lever and Kitchen, 15/5/74, *op.cit.*, p.17.

<sup>50</sup> Bunge (Australia) Pty. Ltd., on behalf of Sumicrust Bakeries Pty. Ltd., Matter No. N74/298, Report by Prices Justification Tribunal, 24/5/74, p.4.

This was the only rate of return quoted, and little other analysis of the profitability of the Company was undertaken.

*Inquiry 13: The Swan Brewery (7/6/74):*

The Tribunal's report in the case stated that the "... following information - in rounded figures from the published accounts is indicative of the Company's position".<sup>51</sup>

	<u>1970/71</u>	<u>1971/72</u>	<u>1972/73</u>
Shareholders' funds	\$46.756m.	\$47.971m.	\$50.217m.
Net profit before tax	\$6.788m.	\$7.994m.	\$8.637m.
Net profit after tax	\$3.688m.	\$4.269m.	\$4.693m.
Ratio of net profit after tax to shareholders' funds	7.9%	8.9%	9.4%

Apparently the Tribunal was content to rely on this ratio as being indicative of profitability.

On the other hand, the Company in its submission was quite adamant that the rate of return comparisons with series, such as those published by the Reserve Bank, were far from useful. The Company commented that such comparisons could only be of use if it were known that the accounting methods adopted by the companies within that series were all similar, and similar to Swan's methods.<sup>52</sup> In pursuing an attempt to determine valid bases of comparison of rates of return between different companies, the Company consulted Professor Philip Brown. An appendix written by Professor Brown setting out the difficulties in making valid comparisons was included in the

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<sup>51</sup> The Swan Brewery Company Limited, Matter No. N74/252, Report by Prices Justification Tribunal, 7/6/74, pp.16-17.

<sup>52</sup> The Swan Brewery Company Limited, Submission to Prices Justification Tribunal, February 1974, pp.6-8.

submission.<sup>53</sup> This is included as Appendix 3 of this dissertation. It reveals the Swan Brewery's attitude to rate of return measures, and summarizes some of the problems referred to in this dissertation. However, the Appendix only discusses one measure of the rate of return - that calculated on shareholders' funds. This is a narrow view, and does not consider the purpose for which the rate of return is to be used - prices justification.

*Inquiry 14: Kellogg (19/6/74):*

The Company provided the following ratios, which were accepted by the Tribunal. (The second table was reported as taking "... account of the abnormal timing of dividend payments which occurred during 1972 and 1973").<sup>54</sup>

Percentages of net profit after tax and before extraordinary items to shareholders' funds:

Table 1 (Statutory Accounts)

<u>1971</u>	<u>1972</u>	<u>1973</u>
22.86%	19.83%	25.04%

Table 2 (Statutory Accounts adjusted for dividend payments)

<u>1971</u>	<u>1972</u>	<u>1973</u>
22.86%	21.07%	23.02%

Percentages of net pre-tax operating profit to shareholders' funds plus borrowings:

Table 1 (Statutory Accounts)

<u>1971</u>	<u>1972</u>	<u>1973</u>
40.14%	34.69%	41.41% (excluding New Zealand: 44.23%)

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<sup>53</sup> *ibid.*, Appendix X.

<sup>54</sup> Kellogg (Aust.) Pty. Ltd., Matter No. N74/390 and Matter No. N74/2078, Report by Prices Justification Tribunal, 19/7/74, pp.11-12.

Table 2 (Statutory Accounts adjusted for dividend payments)

<u>1971</u>	<u>1972</u>	<u>1973</u>
40.14%	36.75%	38.38%

The Tribunal stated that these results must be regarded as particularly good, bearing in mind the Company's capital structure. The public report also indicated that the "... company's profit figures are well beyond the Tariff Board's averages ...".<sup>55</sup> However, no indication was given as to whether these comparisons had been made with the Company's ratios recalculated to I.A.C. definitions, or whether the above ratios were used in those comparisons.

*Inquiry 15: The Southern Queensland Dairy (23/6/74):*

This application for a price rise was somewhat of a special case as far as profitability measurement was concerned. The Australian Dairy Industry Council lodged the notice of proposed prices to the Tribunal on behalf of several groups of companies who manufacture butter and cheese. For several products, returns flow back to farmers through an equalization scheme. Equalization is affected through pooling arrangements with farmers and the Commonwealth Dairy Produce Equalization Committee Ltd. operates the scheme.<sup>56</sup>

Estimates of the return on investment per farm were available. W.D. Scott and Co. used Bureau of Agricultural Economics (B.A.E.) estimates in an attempt to demonstrate that the rate of return on capital (per farm) was below a reasonable level. The following calculations are quoted from the Tribunal's public report:<sup>57</sup>

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<sup>55</sup> *ibid.*, p.13.

<sup>56</sup> The Southern Queensland Dairy Company Limited and Others, Matter No. N74/1150 and Matter No. N74/1322, Report by Prices Justification Tribunal, 23/7/74, pp.4-8.

<sup>57</sup> *ibid.*, p.22.

	B.A.E.'s Figures <u>1968/69</u>		W.D. Scott & Co. Projection - <u>1973/74</u>
<u>Average per farm</u>	<u>\$</u>	<u>%</u>	<u>\$</u>
Total Investment	60,103		90,000
Income all dairy products	6,618	(+13.5)	7,311
" other sideline products	5,074	(+16.4)	10,548
Total Income	11,692	(+14.7)	17,879
<u>Less</u> Total Costs	9,460	(9.8)	13,326
Net Trading Income	2,232	(+35.7)	4,553
Return on Investment	3.71%		5.06%

The Companies maintained that the 5.06% *net trading income/total investment* was below a reasonable return. The B.A.E. indicated that such a rate of return would be higher than had been experienced in most other fields of agriculture. The Tribunal was rightly concerned about these calculations. Although no definitions of what "total investments" constituted were disclosed, the Tribunal made the following observations:-

"A calculation of this type is of course purely hypothetical. There could be much debate about the value of input, particularly the price of land. Further, the estimate is an average for the whole of Australia and would vary significantly from State to State."<sup>58</sup>

Apart from these comments, there was no other analysis of the rate of return or profitability measurement disclosed in the public report.

*Inquiry 16: F. and T. Industries (31/7/74):*

The submission by F. and T. Industries Ltd. was on the behalf of F. and T. Industries (N.S.W.) Pty. Ltd., trading as David Galt Industries.

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<sup>58</sup> *loc.cit.*



Only F. and T. Industries (N.S.W.) came under consideration at this inquiry and the figures supplied in the profitability analysis are not obtainable from the annual reports of the F. and T. Group. Furthermore, the Company supplied most of its financial history in confidence to the Tribunal. In the public session, the following figures were disclosed:<sup>59</sup>

(a) with plant and machinery at book value:-

	<u>Year ended 30.6.71</u>	<u>Year ended 30.6.72</u>	<u>Year ended 30.6.73</u>	<u>Year ended 30.6.74</u>
Funds	\$2,705,522	\$3,422,534	\$2,988,976	\$4,384,443
Net profit prior to tax	1,065,239	984,911	1,051,652	1,183,574
Return on funds prior to tax	39.37%	28.78%	35.18%	26.99%

(b) with plant and machinery at insured value :-

Funds	\$4,596,267	\$5,109,128	\$4,889,010	\$6,276,414
Return prior to tax	23.17%	19.28%	21.51%	18.86%

These different rates of return arose because the Company considered that the plant and machinery was old and "... at an unrealistic value in its books...".<sup>60</sup> The Tribunal also mentioned that calculations were made to demonstrate the position if the Company were treated as a public company. This showed an after tax return on funds of 11.63% for the year ended 30th June, 1974.

Thus, here we have three different percentages submitted by the Company and presumably accepted by the Tribunal to measure the rate of return on capital:

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<sup>59</sup> F. and T. Industries Ltd. on behalf of F. and T. Industries (N.S.W.) Pty. Ltd. trading as David Galt Industries, Matter No. N74/2418, Report by Prices Justification Tribunal, 31/6/74, pp.8-9.

<sup>60</sup> *ibid.*, p.9.

net profit before tax (with plant and machinery = 26.99% (1974)  
funds at book value)

net profit before tax (with plant and machinery = 18.86% (1974)  
funds at insured value)

net profit after tax (if treated as a public = 11.63% (1974)  
funds company)

The Tribunal's report did not discuss which rate of return was appropriate for its purpose. "Funds" were not defined and the accounts that comprised "net profit" were not discussed.

*Inquiry 17: Mayne Nickless (2/8/74):*

In this public hearing, Mayne Nickless Limited (the Company), said that it wished to improve the profitability of the Group; and therefore applied for a 18% increase in prices, which was 1.47% greater than the increase necessary to recoup cost increases.<sup>61</sup> The Company further submitted that its medium term objective was to achieve a return on investment (*net profit after tax/shareholders' funds*) of 15%.<sup>62</sup>

The Tribunal's report contained the following information:<sup>63</sup>

Year Ending June 30	"A"	B	C	RATIO	
	Pre- Tax Profit	Net Profit	Share- holders' Funds	A:C	B:C
	\$M	\$M	\$M	%	%
1971	5.806	2.720	24.174	24.02	11.25
1972	5.721	3.233	28.122	20.34	11.50
1973	6.496	3.426	32.175	20.19	10.87

<sup>61</sup> Mayne Nickless Limited, Matter No. N74/2532, Report by Prices Justification Tribunal, 2/8/74, p.9.

<sup>62</sup> *ibid.*, p.29.

<sup>63</sup> *ibid.*, pp.30-32.

Profit to Funds Employed :

Year Ending June 30	<u>A</u>	<u>B</u>	<u>C</u>	<u>RATIO</u>	
	Pre- Tax Profit	Net Profit	Funds Employed	A:C	B:C
	\$M	\$M	\$M	%	%
1971	5.806	2.720	55.852	10.40	4.87
1972	5.721	3.233	58.030	9.86	5.57
1973	6.496	3.496	67.476	9.63	5.18

Surplus before Interest and Taxation to Specified Funds :

Year Ending June	1971 \$M	1972 \$M	1973 \$M
Trading Profit	2.720	3.233	3.496
<u>add back :</u>			
Taxation provision	3.086	2.488	3.000
Interest paid/payable	<u>.793</u>	<u>1.093</u>	<u>1.319</u>
	6.599	6.814	7.815
<u>deduct</u>			
Income from outside investments			
Interest/equity Freightways Express Ltd. N.Z.	(.417)	(.486)	(.516)
Armaguard Ltd. U.K.	-	-	.026
Dividends - Other	-	-	(.021)
	(a)		
	<u>6.124</u>	<u>6.317</u>	<u>7.304</u>
Shareholders' Funds	\$M		
	24.174	28.122	32.175
<u>add :</u>			
Bank Overdraft	2.635	2.041	2.048
<u>add :</u>			
Current loan deposits	3.114	2.880	7.137
Non current loans/deposits	4.256	6.277	3.548
Debentures	6.000	6.000	9.000
	(b)		
	<u>\$M</u>		
	40.179	45.320	53.908
Ratio (a) : (b) %	15.24	13.94	13.55"

The Tribunal recalculated an adjusted figure for shareholders' funds in respect of the period after 30 June, 1972. The adjustment reduced shareholders' funds by \$3.337 million to eliminate asset revaluation undertaken in 1972-1973. These results were:-

Net Profit to Adjusted Shareholders' Funds

Year Ended 30 June	Net Profit	Shareholders' Funds	% Ratio
	\$m	\$m	
1971	2.720	24.174	11.25
1972	3.233	28.122	11.50
1973	3.496	28.838	12.12

With regard to this adjustment, the Tribunal reported that:

"The Company took issue with this adjustment. The matter has not transpired to be of central importance to our conclusions and beyond noting the somewhat different trend in net profit to shareholders' funds produced by the two approaches we have not taken the matter further."<sup>64</sup>

It was further stated that comparisons had been made between the Company's ratio of *net profit/shareholders' funds* with those of a series resulting from a survey by P.A. Management Consultants<sup>65</sup> and the I.A.C. Manufacturing Sector averages.<sup>66</sup> However, the P.A. figures for 1973 were adjusted to eliminate abnormal trading results of Bell Bros. (Holdings) Limited, Fleetway (Holdings) Limited and Brambles Holdings Limited. This adjustment increased the weighted averages from 6.5% to 16.7%. These comparisons were then shown as follows:

Ratio of Net Profits : Shareholders' Funds

	<u>1971</u> %	<u>1972</u> %	<u>1973</u> %
Mayne Nickless (per published accounts)	11.25	11.50	10.87
Transport Industry (P.A. Survey)	12.10	11.20	16.70
Manufacturing Sector	9.06	9.00	-

<sup>64</sup> *ibid.*, p.32.

<sup>65</sup> This series is set out in Appendix 4.

<sup>66</sup> Prices Justification Tribunal Report on Mayne Nickless, 2/8/74, *op.cit.*, pp.32-33.

The Tribunal's usual disclaimer in using such comparisons again appeared in the report:

"However such comparisons are of limited value for a number of reasons apart from the difficulties of relating transport and manufacturing activities. Moreover this exercise has been conducted using published figures only and not internal Mayne Nickless Limited company figures."<sup>67</sup>

A number of points may be made in regard to this ratio analysis carried out by the Tribunal:

- (1) The comparison of Mayne Nickless' net profit/shareholders' funds with the I.A.C. ratio is invalid. For example, in 1973 the Company ratio is shown as 10.87%. The Mayne Nickless Annual Report for 1973 (Consolidated Accounts, pages 19-21) disclose that this 10.87% (\$m3.496/\$m32.175) is net *trading* profit as a percentage of paid-up capital plus reserves and unappropriated profits. However, the numerator does not include "interests of minority" or "profit on the sale of fixed assets". Also the denominator excludes minority interests. These items are included in the I.A.C. definition. To be consistent in this comparison the Company calculation should be:-

Numerator:	<u>\$million</u>
Net trading profit	3.496
plus interests of outside shareholders'	.021
plus profit on sale of fixed assets	<u>.122</u>
	<u>3.639</u>
Denominator:	<u>\$million</u>
Share capital and reserves	32.175
plus outside shareholders' interests	<u>.301</u>
	<u>32.476</u>

resulting in a ratio (as per I.A.C. definition) of:-

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<sup>67</sup> *ibid.*, p.33.

$$\frac{\text{Net profit}}{\text{Shareholders' funds}} = \frac{3.639}{32.476} = 11.2\%$$

instead of the 10.87% used by the P.J.T.

- (2) The ratio of *profit/funds employed* (3.496/67.476), shown on page 103, includes minority interests in the denominator but excludes minority interests in the numerator. From the Company's 1973 Annual Report, funds employed (\$m67.476 for 1973) are arrived at as follows:-

	<u>\$m</u>
total share capital ( <i>including</i> minority interests)	32.476
non-current liabilities	12.916
current liabilities	<u>22.083</u>
	<u>67.475</u>

(difference between \$m67.476 and \$m67.475 due to rounding).

The net profit (\$m3.496) excludes minority interests, as shown on page 105. Thus, the numerator and denominator are calculated on an inconsistent basis.

- (3) There was no attempt by the Tribunal to compare the Company's *operating profit/funds employed* ratio with the I.A.C. average. The ratio submitted by the Company (and used by the Tribunal) did not follow the I.A.C. definitions. The "surplus before interest and taxation to specified funds" (page 103) is not as per I.A.C. definitions. Minority interests and provisions for income tax, dividends and retirement benefits are excluded, and outside investments, intangible assets, cash and deposits have not been deducted in arriving at funds employed.
- (4) The comparison with the P.A. series is difficult to analyse. The return given by P.A. Management Consultants is defined as "average return on shareholders' funds (after tax after interest)", but specific items in the numerator and denominator (such as

minority interests) are not disclosed.<sup>68</sup> The 6.5% (later adjusted to 16.7%) is shown in their report for "Road Transport".

In this inquiry, as in others, the profitability analysis by the P.J.T. is disappointing, to say the least. After one year of operation, it still appears that the Tribunal has no basic set of rate of return definitions on which to judge firms. Furthermore, comparisons with average series are described at length, but then left to be only described as "of little importance" or "of limited value".

*Inquiry 18: Brick and Pipe Industries (5/8/74):*

The Company's proposal for increased prices was based entirely upon increased wages and salaries. There was no profitability analysis undertaken in the public report of the Tribunal, and the rate of return on capital was not considered.<sup>69</sup>

*Inquiry 19: Alcoa (16/8/74):*

The Company's price increase proposals for ingot and semi-fabricated products was based on increased costs and the Company's desire to improve its rate of return on ingot products.<sup>70</sup>

The Tribunal set out the following table to illustrate the "recent profit history" of the Company:<sup>71</sup>

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<sup>68</sup> Walker, M.J., "Australian Business Profitability 1972-1973", P.A. Management Consultants Pty. Limited Report, Vol. 5, No. 1.

<sup>69</sup> Brick and Pipe Industries Limited, Matter No. N74/2009, Report by Prices Justification Tribunal, 5/8/74.

<sup>70</sup> Alcoa of Australia Limited, Matter No. N74/1180, N74/1484 and N74/2596, Report by Prices Justification Tribunal, 16/8/74, p.7.

<sup>71</sup> *ibid.*, pp.21-22.

"Alcoa of Australia Limited and Subsidiaries (\$000)

	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974 Jan./May</u>
Trading profit after tax	17,084	16,272	11,844	964	717
Net profit after tax	17,084	16,876	13,155	12,122	4,359
% return trading profit/ total assets	5.4	4.1	3.9	.2	.3

Alcoa of Australia Limited (\$000)

Trading profit	5,262	1,794	1,590	2,861	(801)
Net profit	5,262	2,398	2,372	9,512	(797)
% return trading profit/ total assets	2.6	.8	.7	1.3	(.9)

Notes

1. Trading profit excludes exchange gains and extraordinary items.
2. No tax payable by Alcoa of Australia Limited 1970-1974."

From this table the Tribunal concluded that the Company's return is well below a reasonable level. The Company pointed out that "As far as the Australian market is concerned, the importance of a manufacturer's return on capital is related not to investment already made, but to the impact it has on the provision of capacity for the future".<sup>72</sup> The Tribunal replied that such observations cannot be ignored, "... but the question does arise as to whether or not expansion plans must be financed in whole or in part by revenue obtained through higher prices. Perhaps it is sufficient to say that the Company has demonstrated that the present trading position is unsatisfactory and that that is recognised in our conclusions".<sup>73</sup>

The definition of the rate of return presented in this inquiry, *trading profit/total assets*, can be derived from the 1973 Alcoa Annual Report (Consolidated Accounts, pages 8-10):-

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<sup>72</sup> Alcoa of Australia Limited, Submission to Prices Justification Tribunal, July 1974, p.24.

<sup>73</sup> Prices Justification Tribunal Report on Alcoa, *op.cit.*, p.23.



<u>Trading Profit:</u>	<u>\$000</u>
Net Income (after adding extraordinary items)	12,122
less net gain on currency fluctuations	<u>11,158</u>
	<u>964</u>
<u>Total Assets:</u>	
Current Assets	62,660
Investments and other assets	12,339
Properties, plant and equipment	316,773
Secret processes	<u>12,329</u>
	<u>404,101</u>
<u>Trading profit</u>	<u>\$964</u>
<u>Total assets</u>	<u>404,101</u>
= .002386 (= 0.2%)	

Thus the definition is a specific one and different from any of the series used for comparison in previous inquiries. Furthermore, the notes attached to the table as presented in the Tribunal's Report (see page 108) are incorrect. Trading profit excludes exchange gains but certainly does not exclude extraordinary items.

*Inquiry 20: Philips (20/8/74):*

The Philips inquiry related solely to proposed prices for colour television receivers. The Company submitted that using their normal methods of calculations, the proposed prices represent a "... very modest return on the funds invested".<sup>74</sup> In its submission, the Company made it quite clear that it used a "replacement value" accounting system.<sup>75</sup> The Tribunal was aware of this, and stated that it proposed to make

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<sup>74</sup> Philips Industries Holdings Limited on behalf of R.G.T. Industries Pty. Ltd. and Dealer Brokers Pty. Ltd., Matter No. N74/2708, Report by Prices Justification Tribunal, 20/8/74.

<sup>75</sup> R.G.T. Industries Pty. Limited and Dealer Brokers Pty. Ltd. trading as Philips Consumer Products, Submission to Prices Justification Tribunal, 24/7/74.

allowances for this.<sup>76</sup> However, no profitability or rate of return analysis was undertaken in the Tribunal's report, and no rates of return were submitted to the Tribunal in the Company's public submission.

*Inquiry 21: A.C.I. (23/8/74):*

This inquiry related to proposed increased prices for the supply of glass containers. Unfortunately, all operating profits and funds employed were submitted to the Tribunal in confidence. Thus the Tribunal's report contained no profitability analysis. It stated that:

"Because much of the profit information supplied was contained in material which we are satisfied should remain confidential we are not in a position to discuss the Division's profitability fully here. We are, however, satisfied that the Division's profitability is basically sound and that the Group of Companies of which it is part and whose 1974 Annual Report was submitted to us, continues to enjoy a position of strength."<sup>77</sup>

The Company's public submission was also of little use. Apart from some general comments on "economic versus book profit" which raised the "high cost of replacement of assets" and depreciation policies, there was no statement about the profitability of the Companies concerned.

*Inquiry 22: G.M.H. (23/8/74):*

In the second G.M.H. inquiry, the Tribunal's report disclosed similar information on profitability as given in the first inquiry.

<sup>76</sup> Prices Justification Tribunal Report on Philips, *op.cit.*, p.13.

<sup>77</sup> A.C.I. Operations Pty. Ltd., trading as Australian Glass Manufacturers Company and Queensland Glass Manufacturers Company, Matter N74/2574, Report by Prices Justification Tribunal, 23/8/74, pp.10-11.

Sales, net profit after tax, total assets and net profit as a percentage of sales were shown for the years 1965 to 1973. Additional ratios presented at this inquiry were:-

(a) operating profit before tax/net funds employed

(b) net profit after tax/net funds employed

as well as net profit after tax/shareholders' funds (which was also examined at the first G.M.H. inquiry). These ratios were shown as follows:<sup>78</sup>

	"Net funds Employed	Operating Profit before tax	Operating Profit per cent on funds employed	Net profit after tax	Net profit per cent on funds employed
	\$ '000	\$ '000	%	\$ '000	%
1970	219,019	51,715	23.6	27,766	12.7
1971	212,843	36,088	17.0	18,942	8.9
1972	229,121	28,760	12.6	15,328	6.7
1973	208,223	27,511	13.2	14,253	6.9

	Aggregate Shareholders' Funds	Net Profit After Tax	Net Profit per cent on Shareholders' Funds
	\$ '000	\$ '000	%
1971	220,261	18,942	8.6
1972	235,589	15,328	6.5
1973	218,842	14,253	6.5"

These two additional ratios would seem to be the result of the Tribunal's pronouncements that I.A.C. definitions were useful for comparative purposes. However, the comparison was not undertaken in this case.

<sup>78</sup> General Motors-Holden's Pty. Limited and General Motors-Holden's Sales Pty. Limited, Matter No. N74/2277, Report by Prices Justification Tribunal, 22/8/74, p.26.

*Inquiry 23: W.D. and H.O. Wills (29/8/74):*

The Companies' submission included a table of profitability ratios that were claimed to be calculated on the basis of the I.A.C. definitions, and compared with the I.A.C. averages for "tobacco products".<sup>79</sup>

The P.J.T. accepted the ratios and the following schedule was included in the Tribunal's report.<sup>80</sup>

	"Company Figures				Tobacco Products		Manu- facturing Sector	
	1970-71	71-72	72-73	73-74 (Est)	70-71	71-72	70-71	71-72
Operating profit/ funds employed	30.2	29.2	22.5*	22.0	30.3	30.6	12.1	11.5
Operating profit/ sales	10.8	11.4	11.4	10.0	12.3	10.9	7.8	7.5
Net profit/sales	6.2	6.3	5.8	5.5	6.4	5.7	4.3	4.2
Net profit/ paid-up capital	55.1	58.9	57.8	56.3	61.6	66.2	22.7	21.9
Net profit/share- holders' funds	16.8	16.1	16.6	15.7	18.2	17.4	9.6	9.0

\* revaluation of assets occurred

+ Source : Tariff Board Annual Report for Year 1972-1973"

Schedule 4 of the Submission also disclosed the basis of calculations of the *operating profit/funds employed* ratio, and the figures for the current year ended 30/10/73 are as follows:-

<sup>79</sup> W.D. and H.O. Wills (Australia) Limited, Public Submission to Prices Justification Tribunal, 28/6/74, Schedule 4.

<sup>80</sup> W.D. and H.O. Wills (Australia) Limited and Related Companies, Matter No. N74/1891, Report by Prices Justification Tribunal, 29/8/74, p.22.

Operating Profit/Funds EmployedOperating Profit:

Net profit before tax	\$29,456,359
<i>plus</i> interest paid	1,853,289
<i>less</i> income from subsidiaries	(263,493)
<i>less</i> income from unlisted investments	(1,115,523)
<i>less</i> net profit on sales or disposals of non-current assets	<u>(36,187)</u>
	<u>\$29,894,445</u>

Funds Employed:

Net fixed assets	\$31,708,080
Current assets	113,646,922
Short-term trade liabilities	
Trade creditors	(4,257,708)
Provision for income tax	<u>(8,472,844)</u>
	<u>\$132,624,450</u>

Ratio:

$$\frac{\text{Operating profit}}{\text{Funds employed}} = \frac{\$29,894,445}{\$132,624,450} = 22.5\%.$$

These calculations are from the W.D. and H.O. Wills (Australia)

Limited accounts - not consolidated.<sup>81</sup> The fact that the non-consolidated figures are being used also accounts for the deduction

- "income from subsidiaries" - from net profit. "Income and subsidiaries" is being treated as an "outside investment" for the purpose of arriving at the I.A.C. definition of "operating profit".

Likewise, the total interest paid, \$1,853,289, which is added back to net profit, is comprised of the following accounts:

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<sup>81</sup> This was ascertained from the accounts in the Submission to the Tribunal, where full accounts were presented for 1971, 1972 and 1973.

Interest paid to:	\$
holding company	695,741
subsidiaries	617,407
other related corporations	223,048
others	<u>317,093</u>
	<u>\$1,853,289</u>

However, to provide a consistent measure between the numerator and denominator, amounts receivable from subsidiaries or from the ultimate holding company should be excluded from the current assets in calculating funds employed (because related interest received is treated as an "outside investment" and deducted from the numerator). By the same argument, amounts owing to subsidiaries should be included in funds employed and related interest paid included as part of the numerator.<sup>82</sup> The definition of funds employed submitted by Wills also included cash, term deposits and investments in short-term money markets - all of which are excluded from the I.A.C. definition. The provision for income tax was incorrectly deducted, and accrued charges were not deducted. A consistent and correct calculation of funds employed (as per the I.A.C. definition) would be as follows:-

	\$	\$
Net fixed assets		31,708,080
<i>add</i> current assets	113,646,922	
<i>less</i> amounts receivable from subsidiaries	(2,488,558)	
amounts receivable from Holding Co.	(6,359,620)	

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<sup>82</sup> This treatment is the same as that followed by the I.A.C., personal communication with Mr. T. Walsh, I.A.C.

\$                    \$  
c/f. 31,708,080

<i>less</i> current assets not included in I.A.C. definition of funds employed:		
cash at bank and in hand	(637,549)	
other debtors (being term deposits with banks and investments in short-term money markets)	(17,939,000)	<u>86,222,195</u>
		117,930,275
 <i>less</i> trade creditors and bills payable	(4,257,708)	
accrued charges	(2,003,701)	<u>6,261,409</u>
 Funds Employed as per I.A.C. definition		<u>\$111,668,866</u>

The ratio now becomes:-

$$\frac{\text{Operating profit}}{\text{Funds employed}} = \frac{\$ 29,894,445}{111,668,866} = 26.77\%.$$

These calculations show that the Company has overstated funds employed by \$20,955,584 and the *operating profit/funds employed* ratio has been understated by 4.27 percentage points. Yet the Tribunal accepted the Company figures as correct and used them in their comparisons. The only comment on the ratios in the Tribunal's report was:

"During cross-examination the Companies attempted to establish that the relevant ratio for comparison of profitability was that of operating profit to sales. They argued that the figures of operating profit to funds employed were not the most useful comparison because a revaluation of assets could alter the ratio significantly and that this had in fact occurred in 1973. Counsel assisting the Tribunal, however, reminded the Tribunal that profit was a reward to a company for investing assets and so the relevant measure of profitability must be related somehow to the capital of the company concerned and not to sales. While we agree that such ratios only have a limited role in the assessment of a company's profitability they do give some guidance and we accept the argument that in this case profit should be related to capital rather than to any sales figures."<sup>83</sup>

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<sup>83</sup> Prices Justification Tribunal Report on Wills, *op.cit.*, p.23.

*Inquiry 24: Gadsden (2/9/74):*

In the profitability section of its report in this inquiry, the Tribunal stated that the following J. Gadsden Australia Limited group ratios were "indicative":-<sup>84</sup>

	<u>1971</u>	<u>1972</u>	<u>1973</u>
Operating profit/funds employed	16.6	13.2	15.0
Net profit/funds employed	8.0	6.5	8.4
Net profit/shareholders' funds	15.6	12.4	14.6
Gearing ratios:			
(Long term debt/shareholders' funds)	41.0	33.7	29.4
(Shareholders' funds/funds employed)	51.0	52.5	57.4

The Company submission disclosed the accounts that were included in these ratios:-<sup>85</sup>

J. GADSDEN AUSTRALIA LIMITED

GROUP STATISTICS

(in thousands of dollars)

	<u>1971</u>	<u>1972</u>	<u>1973</u>
Share capital, Reserves and unappropriated profits	25,090	27,156	31,140
Long term debt	10,275	9,164	9,155
Other liabilities	<u>13,874</u>	<u>15,426</u>	<u>13,917</u>
NET FUNDS EMPLOYED	<u>\$49,239</u>	<u>\$51,746</u>	<u>\$54,212</u>
Net profit before extraordinary items	7,464	6,292	7,623

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<sup>84</sup> J. Gadsden Australia Limited on behalf of J. Gadsden Pty. Ltd., Matter No. N74/3001, Report by Prices Justification Tribunal, 2/9/74, pp.9-10.

<sup>85</sup> J. Gadsden Pty. Ltd., Matter No. 171/N74/3001, Submission to Prices Justification Tribunal, p.24.



	<u>1971</u>	<u>1972</u>	<u>1973</u>
c/f.	7,464	6,292	7,623
<i>less</i> dividend received	<u>140</u>	<u>160</u>	<u>166</u>
	7,324	6,132	7,457
<i>plus</i> interest paid	<u>830</u>	<u>772</u>	<u>742</u>
	8,154	6,904	8,199
<i>less</i> gain on asset disposal	<u>(31)</u>	<u>48</u>	<u>58</u>
OPERATING PROFIT (before interest is charged)	<u>\$8,185</u>	<u>\$6,856</u>	<u>\$8,141</u>
NET PROFIT before extraordinary items and after tax	<u>\$3,920</u>	<u>\$3,370</u>	<u>\$4,531</u>

These statistics show that the *operating profit/funds employed* and *net profit/shareholders' funds* ratios differed considerably from the definitions provided by the I.A.C. Although no comparison was made with those definitions in this inquiry, it is of interest to note the different results that arise from using different definitions of rates of return that are described by the same title. If the I.A.C. definition is followed, these ratios would appear as follows:<sup>86</sup>

Denominator:	<u>\$</u>
Shareholders' equity	31,139,858
<i>add</i> long-term and other liabilities	7,487,789
current liabilities and provisions (not including trade creditors and accruals)	<u>9,352,733</u>
	47,980,380
<i>less</i> assets not included in I.A.C. definition of funds employed:	

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<sup>86</sup> The figures for these calculations have been extracted from the J. Gadsden Australia Limited, 1973 Annual Report and Accounts (Consolidated, pp.10-16).

	\$
c/f.	47,980,380
investments	(500,000)
other receivables	(3,262,726)
cash at bank and in hand	(10,190)
short term deposits	<u>(800,000)</u>
Funds Employed as per I.A.C. Definition	<u>\$43,407,464</u>

These funds are represented by:

Net fixed assets	23,547,465
<i>add</i> current trade assets (stock, debtors)	<u>26,091,313</u>
	49,638,778
<i>less</i> creditors and accrued accounts	<u>6,231,314</u>
	<u>\$43,407,464</u>

Numerator:

	\$
Net profit before tax	7,623,077
<i>add</i> interest	<u>742,337</u>
	8,365,414
<i>less</i> income from outside investments	<u>166,000</u>
	8,199,414
<i>less</i> gain from sale of fixed assets	<u>57,947</u>
Operating Profit Before Tax	<u>\$8,141,467</u>

$$\frac{\text{Operating profit before tax}}{\text{Funds employed}} = \frac{8,141,467}{43,407,464} = 18.76\%$$

The *net profit/shareholders' funds* ratio, calculated to I.A.C. definitions, is:

$$\frac{\text{Net profit}}{\text{Shareholders' funds}} = \frac{5,233,804}{31,139,858} = 16.8\%.$$

Thus, there is a considerable difference between the *operating profit/funds employed* ratio submitted by Gadsden (15.0%) and that calculated to I.A.C. definitions (18.76%). Likewise, the Gadsden *net profit/shareholders' funds* (14.6%) differs from the I.A.C. definition (16.8%).

This further illustrates the need for specific definitions of the numerator and denominator of a rate of return before a detailed examination can be undertaken.

*Inquiry 25: Arnotts (13/9/74):*

The Company provided the following data on profitability, and it was accepted by the P.J.T.:<sup>-87</sup>

	<u>1972</u> <u>'000</u>	<u>1973</u> <u>'000</u>
Funds employed	\$27,701	\$29,198
Operating profit	6,726	7,380
Ratio of operating profit to funds employed in biscuit operations expressed as a percentage	24.3%	25.3%
Operating profit after tax	\$ 3,867	\$ 4,059
Ratio of operating profit after tax to estimated funds employed in biscuit operations expressed as a percentage	14.0%	13.9%
Operating profit as a percentage of sales	9.23%	9.5%
<hr/>		
Total company net profit as a percentage of shareholders' funds	15.6%	15.3%
Dividends paid	\$ 2,340	\$ 2,340
Retained earnings	2,137	2,132

The Tribunal made the following comments on this data:-

"On the figures given above it is relevant to record that the Tariff Board Annual Report for 1972 showed that the ratio of operating profit to funds employed in all manufacturing groups was 11.5 and for food products the ratio was 13.9. Similarly the Tariff Board ratio in 1972 of operating profit to sales for all manufacturing is 7.5 and other foods 5.6. The Company argued that such a comparison was wholly invalid. While we recognise the limitation of the Tariff Board Report figures, it seems reasonable to conclude that return to the Company is well above average and

<sup>87</sup> Arnotts Limited, Matter No. N74/2534, Report by Prices Justification Tribunal, 13/9/74, p.11.

to take also into account that it is operating in an industry not subject to high risk."<sup>88</sup>

The *operating profit/funds employed* ratio is difficult to verify because it relates to "biscuit operations", and this section of the Company is not shown in published Annual Reports.<sup>89</sup> However, the *net profit/shareholders' funds* rate of return is given for the total company in the above table. From the 1973 Annual Report data, it would appear that this ratio is calculated as follows:-

$$\frac{\text{Net profit}}{\text{Shareholders' funds}} = \frac{\$ 4,234,000}{\$27,739,000} = 15.3\%.$$

Net profit (\$4,234,000) is after tax, including extraordinary items and outside investment income but *excluding* net profit attributable to outside shareholders. Shareholders' funds (\$27,739,000) is equal to share capital and reserves but *excludes* outside shareholders' interests. Thus it is different from the I.A.C. definition which includes outside shareholders' interests. The ratio recalculated to that definition would be:-

$$\frac{\text{Net profit}}{\text{Shareholders' funds}} = \frac{\$ 4,799,000}{\$28,942,000} = 16.6\%.$$

This would be the result that is comparable with the I.A.C. averages, not the 15.3%. Once again the Tribunal have used different definitions of a rate of return ratio in comparisons.

*Inquiry 26: Fairfax (13/9/74):*

The Tribunal's report on John Fairfax and Sons Limited included

<sup>88</sup> *ibid.*, pp.11-12.

<sup>89</sup> Arnotts Limited, Annual Report and Notice of Meeting, 1973.

the following table of financial results:-<sup>90</sup>

	<u>"1970-71</u>	<u>1971-72</u>	<u>1972-73</u>
	\$'000	\$'000	\$'000
John Fairfax Limited			
Share of Net Profits	4,275	4,364	4,956 <sup>(a)</sup>
Funds Employed --			
Capital	14,520	14,520	14,520
Reserves	11,000	11,500	12,600 <sup>(b)</sup>
Balance of Profit	7,833	8,793	9,956
Minority Shareholders	3,861	3,931	9,644
	<u>37,214</u>	<u>38,744</u>	<u>46,720</u>
Group Return on Funds Employed			
Before Tax	22.91%	22.3%	25.7%
After Tax	12.53%	12.11%	12.5%

(a) including \$597,000 contributed by the David Syme and Company Limited companies following the acquisition of a majority interest by the Fairfax Group.

(b) including an increase of \$583,000 in capital reserves related to the acquisition of a controlling interest in David Syme and Company Limited."

**The Tribunal reported that:**

"The table indicates that the net profit representing the share of John Fairfax Limited remained fairly constant over the three year period, taking into account the additional contribution of David Syme and Company Limited in 1972/73."<sup>91</sup>

An examination of the John Fairfax Annual Report for 1973 discloses that the figures set out in the above table are those relating to John Fairfax Limited and Subsidiaries (Consolidated). From the annual report it can be determined that the net profit shown as \$4,956,000 for 1973 is defined as profit from trading plus investment

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<sup>90</sup> John Fairfax and Sons Limited and Associated Newspapers Limited, Matter No. N74/3176, N74/3177, N74/3305, Report by Prices Justification Tribunal, 13/9/74, pp.36-37.

<sup>91</sup> *ibid.*, p.37.

income after deducting taxation, extraordinary items and the interests of minority shareholders'. However, the "group return on funds employed" ratio does not use that profit definition in the numerator. Rather, profit is defined as profit from trading plus investment income but before deducting extraordinary items and minority interests. It is this numerator which results in the 25.7% (\$12,007,000/\$46,720,000) before tax, and 12.5% (\$5,841,000/\$46,720,000) after tax, for 1972-73.

*Inquiry 27: Heinz (3/10/74):*

The Tribunal's report on this hearing disclosed the following figures in the "profitability" section:-<sup>92</sup>

<u>Fiscal Year</u>	<u>Heinz Sales</u> \$'000	<u>Heinz Profit Before Tax</u> \$'000	<u>Heinz Profit After Tax</u> \$'000	<u>Consolidated Profit After Tax</u> \$'000
1969		2860	1500	
1970		1918	1002	
1971		2067	1012	
1972		1457	946	
1973	34517	( 2445	( 1315	( 1552
		( 963*	( 963*	( 963*
1974	37551	2905	1522	1800

\* Exchange gain

Rate of Return on

	<u>Shareholders' Funds</u> %	<u>Total Assets</u> %	<u>Net Profit % Sales</u> %
1969	17.8	16.1	8.6
1970	11.4	10.6	3.7
1971	11.2	10.8	3.4
1972	10.2	8.2	3.0
1973	14.3	11.5	4.2
1974	14.1	11.8	4.1

<sup>92</sup> H.J. Heinz Co. Australia Ltd., Matter No. N74/2888, Report by Prices Justification Tribunal, 3/10/74, pp.15-16.

The Company stated that "... its rates of return were above, but not excessively above, the average for the food industry and manufacturing industry generally".<sup>93</sup>

The 1974 Annual Report reveals the following accounts.<sup>94</sup>

<u>(1) Profit:</u>	<u>\$000</u>
Trading profit before income tax and extraordinary items	2,909
less income tax:	
current	1,449
deferred	(67)
(Over)/Under provided previous year	<u>5</u>
	<u>1,387</u>
Profit before extraordinary items	<u>1,522</u>
<u>(2) Share Capital and Reserves:</u>	
Share capital in shares of \$1 each:	
Ordinary shares	3,000
Unappropriated profits	<u>8,003</u>
	<u>11,003</u>
<u>(3) Assets:</u>	
Fixed assets	7,006
Current assets	17,563
Investments	3,259
Other non-current assets (debt)	73
Deferred charges	<u>453</u>
	<u>28,354</u>

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<sup>93</sup> *ibid.*, p.16.

<sup>94</sup> H.J. Heinz Company Australia Limited and Subsidiary Companies, Balance Sheet and Accounts as at 26 April, 1974. Peat Marwick, Mitchell and Co., Chartered Accountants, Melbourne, Australia. The accounts quoted are those of the Holding Companies only (not consolidated) because these were the accounts quoted by the Prices Justification Tribunal in the above rate of return analysis.

From these accounts several points can be made on the rate of return analysis presented by the Tribunal (above):

- (1) The rate of return on total assets (11.8% for 1974) has been defined as:

$$\frac{\text{Profit before tax}^{95}}{\text{Fixed assets and current assets}} = \frac{2,905,000}{24,569,000} = 11.8\%.$$

- (2) The rate of return on shareholders' funds has been calculated using an *after tax* profit figure, and average shareholders' funds for 1973 and 1974:

$$\begin{aligned} \frac{\text{Profit after tax}}{\text{Average shareholders' funds}} &= \frac{\$1,522,000}{(\$10,633,000 + \$11,003,000)/2} \\ &= \frac{\$1,522,000}{\$10,818,000} = 14.1\%. \end{aligned}$$

These definitions are quite explicit but differ from those used by the I.A.C. For example, the I.A.C. does not use "average shareholders' funds" in their *net profit/shareholders' funds* ratio, and there are obviously several adjustments necessary if comparisons between the I.A.C. *operating profit/funds employed* and the Heinz *profit before tax/fixed assets plus current assets* are to be made. On the other hand, the rate of return on shareholders' funds is similar to the R.B.A. definition. The series with which Heinz was compared was not revealed. However, this inquiry made use of a specifically defined rate of return on total assets which differs in many ways from those used in previous hearings, and from those stated by the Tribunal to be useful in making comparisons with an industry average.

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<sup>95</sup> The numerator appears as \$2,905,000 in the Tribunal's report but as \$2,909,000 in the Heinz Accounts. No obvious reason for this difference can be obtained from the accounts. In any case, it makes no difference to the rate of return (11.8%).



*Inquiry 28: Ready Mix (7/10/74):*

The Ready Mixed Concrete submission generated two public inquiries. One was concerned with a proposed increase in the price of delivered concrete and cartage rates<sup>96</sup> and the other with proposed price rises for several of the concrete and quarry products<sup>97</sup> produced by the companies. The first report contained no analysis of the profitability of the companies concerned. It is the second hearing which will be discussed here as Inquiry 28.

The following data was summarized in the Tribunal's report as representing the "financial position" of Ready Mixed Concrete Limited:<sup>98</sup>

	<u>"1973-74"</u> <u>\$'000</u>
Australian Trading Profits	10,845.9
Less: Finance Costs (Net).	<u>1,321.6</u> 9,524.3
Less: Tax	<u>7,546.3</u> 4,978.0
Dividend Income	<u>114.8</u>
Net Profit after tax - Australia	5,092.8
Overseas,	<u>29.1</u>
<u>Total After Tax</u>	<u><u>\$5,121.9</u></u>

According to the material before us its consolidated net profit after tax, shareholders' funds and earning rates were :

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<sup>96</sup> Ready Mixed Concrete Industries Limited, Matter No. N74/2673 and N74/2911, Report by Prices Justification Tribunal, 7/10/74.

<sup>97</sup> Ready Mixed Concrete (New South Wales) Pty. Limited and Related Companies (trading as The Readymix Group (N.S.W.)), Matters Nos. N74/2619, N74/2620, N74/2621 and N74/2622, Report by Prices Justification Tribunal, 7/10/74.

<sup>98</sup> *ibid.*, pp.11-13.

	Net Profit After Tax \$'000	Shareholders' Funds \$'000	Earning Rate %
1969-70	4,495	27,277	16.5
1970-71	3,845	27,047	14.2
1971-72	4,469	30,790	14.5
1972-73	5,170	30,756	16.8
1973-74	5,122	35,894*	14.3*

Note: \*Assets Revaluation \$12,319,000 is excluded in this and all subsequent calculations. 1973-74 earning rate after revaluation is 10.6%

It was stated by the Company that to obtain a true comparison of earnings, shareholders' funds require adjustment for parent company loans, and profit figures require adjustment for the after-tax effect of interest on such loans, and for the pre-acquisition profits of The Clay Cross Company Limited.

The adjusted figures are as follows:-

	Net Profit After Tax \$'000	Shareholders' Funds \$'000	Earning Rate %
1969-70	4,413	25,277	17.5
1970-71	3,751	25,047	15.0
1971-72	4,387	28,790	15.2
1972-73	5,080	28,756	17.7
1973-74	5,500	40,894	13.4

The following figures were submitted to us as showing net profits after tax as earning rates on funds employed using Tariff Board definitions :

	Net Profit After Tax \$'000	Funds Employed \$'000	Earning Rate %
1969-70	4,495	32,676	13.8
1970-71	3,845	38,520	10.0
1971-72	4,469	38,941	11.5
1972-73	5,170	37,236	13.9
1973-74 Actual	5,122	63,151(excl	8.1
Adjusted	5,506*	63,151(re- valuation	

\*Adjusted for pre-acquisition profit of The Clay Cross Company Limited

The return on funds employed for companies of the Readymix Group (N.S.W.) were as follows :

1.0 = 1,000

	<u>1969-70</u>	<u>1970-71</u>	<u>1971-72</u>	<u>1972-73</u>	<u>1973-74</u>
Funds Employed \$	5858.1	6395.6	6595.1	6237.9	6112.9
{Pre-Tax Profits \$	1399.3	1171.1	836.6	1068.4	1916.5
{R.O.F. %	23.9	18.3	12.7	17.1	31.3
After Tax Profits \$	840.6	739.3	470.7	645.9	1132.3
R.O.F. %	14.4	11.6	7.1	10.4	18.5"

**There was no analysis of these ratios in the Tribunal's report.**

The ratio which was claimed to be calculated using I.A.C. definitions is not one of the ratios used by the I.A.C. Thus no valid comparisons with that series could be made. (The ratio on funds employed uses a *before* tax numerator.)

*Inquiry 29: Tooth and Co. (18/10/74):*

In the fifth inquiry relating to the brewing industry, the Tribunal outlined the following particulars relating to rates of return in the "profitability" section of its report:<sup>99</sup>

	<u>1972</u>	<u>1973</u>	<u>1974</u>
Shareholders' funds	\$121.4m.	\$126.3m.	\$130.7m.
Net profit after tax	\$ 10.3m.	\$ 11.3m.	\$ 10.5m.
Percentage return on shareholders' funds	8.48	8.97	8.06

Immediately following these figures the Tribunal stated that:

"For comparative purposes the percentage return on shareholders' funds indicated by the Reserve Bank manufacturing industry constant group for 1972 was 8.7 and the Tariff Board Australian manufacturing industry average return was 9.0. The Company said that assuming the current level of costs as notified, with the price increase from 1 October, 1974, the 1975 return would be 8.35% and without the price increase, 6.27%."<sup>100</sup>

<sup>99</sup> Tooth and Co. Limited, Matter No. N74/3246, Report by Prices Justification Tribunal, 18/10/74, p.9.

<sup>100</sup> *loc.cit.*

From the Tooth Annual Report for 1974,<sup>101</sup> it can be shown that the *net profit after tax/shareholders' funds* ratio (\$10,526,543/\$130,663,052 = 8.06%) is defined as follows:

*Net profit* is profit on trading, rents and interest after tax but before adding the extraordinary item "surplus on disposal of fixed assets";

*shareholders' funds* is issued capital plus reserves and surplus (unappropriated profits).

Therefore this ratio, which has been compared with the Reserve Bank series and the I.A.C. series by the Tribunal, does not comply with the definitions used by either of those bodies. The I.A.C. definition of net profit includes "surplus on the sale of fixed assets" and the Reserve Bank uses "average shareholders' funds". The Tooth and Co. ratios, to comply with these definitions, would be:

(a) I.A.C. comparison:

net profit after tax (as per Tribunal report)	\$10,526,543
add surplus on sale of fixed assets	<u>768,315</u>
Net profit as per I.A.C.	<u>\$11,294,858</u>

Ratio:

$$\frac{\text{Net profit after tax}}{\text{Shareholders' funds}} = \frac{\$11,294,858}{\$130,663,052} = 8.64\%.$$

(b) Reserve Bank comparison:

Shareholders' funds (1974)	\$130,663,052
Shareholders' funds (1973)	<u>\$126,297,279</u>
	<u>\$256,960,331</u>
Average shareholders' funds	\$128,480,165

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<sup>101</sup> Tooth and Co. Limited, Eighty-sixth Annual Report and Notice of Annual Meeting 1973/74.

Ratio:

$$\frac{\text{Net profit after tax}}{\text{Average shareholders' funds}} = \frac{\$10,526,543}{\$128,480,165} = 8.2\%.$$

In relation to the rates of return submitted, the Tribunal also commented on the huge increase in shareholders' funds over the last six years, which was mainly due to very large revaluations of licensed properties. This depressed the rate of return. The 1975 return (calculated as per the "Tooth definition" above) was expected to be 8.35% with the proposed price increase and 6.27% without the increase.

This analysis was presumably sufficient to enable the Tribunal to complete its assessment of Tooth's profitability. It stated "We can only conclude that the Company is well more than averagely profitable".<sup>102</sup>

Inquiry 30: Bonds-Wear (18/10/74):

The rates of return and accounts of the Company were submitted in confidence to the Tribunal. The only return on capital ratio presented in the Tribunal's report<sup>103</sup> was "adjusted operating profit/funds" (= 18.8% for 1973). The definitions of "adjusted operating profit" and "funds" were not disclosed. The only other comment on the profitability of the Company by the Tribunal was that:

"Some evidence was given comparing the return on funds of the Company, the Textile Industry and other sections of Manufacturing Industry. However, we did not find that the comparisons were particularly helpful to us on this occasion.

A large part of the evidence relating to funds and profitability was necessarily of a confidential nature and we do not propose to discuss it in detail. We have however taken all of these factors into account in arriving at our conclusions."<sup>104</sup>

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<sup>102</sup> Prices Justification Tribunal Report on Tooth, *op.cit.*, p.10.

<sup>103</sup> Bonds-Wear Pty. Limited, Matter No. N74/3730, Report by Prices Justification Tribunal, 18/10/74, p.14.

<sup>104</sup> *ibid.*, p.15.

*Inquiry 31: Colgate-Palmolive (30/10/74):*

In this inquiry, the Tribunal's Report contained the following information:<sup>105</sup>

	<u>"1971</u> <u>\$000</u>	<u>1972</u> <u>\$000</u>	<u>1973</u> <u>\$000</u>
Net profit before tax	5,507	5,793	7,202
Net profit after tax	3,040	3,321	4,017
Dividends paid	2,551	2,560	3,010
<u>Operating Profit/Funds Employed</u>	<u>%</u>	<u>%</u>	<u>%</u>
Australian Manufacturing Industries*	12.1	11.5	N.A.
Soap and Detergent Industry*	25.1	30.1	N.A.
The Company	42.7	41.7	42.2
<u>Net Profit (After Tax)/</u>			
<u>Shareholders' Funds</u>			
Australian Manufacturing Industries*	9.6	9.0	N.A.
Soap and Detergent Industry*	16.7	19.9	N.A.
The Company	26.2	26.8	30.0

\* Tariff Board Annual Report 1972/73".

The Tribunal concluded, from this comparison, that "... the Company makes profits well above the average in its own industry, the average of which is significantly above the average for Australian manufacturing industry as a whole".<sup>106</sup>

*Inquiry 32: Samuel Taylor (30/10/74):*

The following "performance analysis table" submitted by the

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<sup>105</sup> Colgate-Palmolive Pty. Limited, Matter No. N74/3502, Report by Prices Justification Tribunal, 30/10/74, p.13.

<sup>106</sup> *loc.cit.* Further analysis of the rate of return ratios presented in this inquiry was not possible because the annual reports of Colgate-Palmolive Pty. Ltd. were not available.

Company was considered to be of use to the Tribunal in its profitability assessment.<sup>107</sup>

	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>
Sales \$000's	10,505	13,177	15,015	19,916
Sales growth %		25.4	13.9	32.6
Sales/Employee \$000's	41.7	49.7	57.3	75.4
Profit before tax \$000's	2,164	2,744	3,364	4,803
Profit growth %		26.8	22.6	42.8
Profit/Employee \$	8,587	10,355	12,839	18,193
Profit/Employee growth %		20.6	24.0	41.7
Number of Employees	252	265	262	264

Profit before and after tax as a percentage of sales for each of these years has been:-

	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>
Profit before tax	20.6	20.8	22.4	24.1
Profit after tax	10.7	11.0	11.6	12.7".

The Tribunal's report did not, however, examine a rate of return on capital measure, despite the fact that such an analysis was undertaken in the Company's submission.<sup>108</sup> The public submission disclosed a 15.0% *profit after tax/net funds employed* ratio. In this case, net funds employed consisted of all assets, including patents, goodwill and investments, net of current liabilities.

*Inquiry 33: Nestlé (7/11/74):*

The Company submitted the following "profitability ratios,

<sup>107</sup> Samuel Taylor Pty. Limited, Matter No. N74/3671, Report by Prices Justification Tribunal, 30/10/74, p.10.

<sup>108</sup> Samuel Taylor Pty. Limited, Submission to Prices Justification Tribunal, 31/7/74, pp.150-151.

(using the same definitions as indicated in the Tariff Board Reports up to 1972/73 and issued 28/8/73)".<sup>109</sup>

<u>"Our Position</u>			<u>Industry Average</u>	
<u>Operating profit before tax/ Funds employed</u>			<u>Jan/Dec.</u>	<u>July/June Average</u>
	\$	\$	%	%
1970	3,825,927	31,438,455	12.17 )	
			)	10.05
1971	3,306,985	41,764,501	7.92 ))	12.2
			)	
1972	5,013,616	52,350,709	9.58 )	8.75
				13.9
1973	6,471,656	55,922,495	11.57"	

The ratios were examined by the Tribunal, who stated that "...

These figures are not very meaningful but show a reasonably healthy position".<sup>110</sup> The Tribunal seem to place considerably more emphasis on the "substantial dividends" paid to the parent company each year. This was illustrated by the following extract from the 1973 annual report of the Company".<sup>111</sup>

	<u>"1972 \$000</u>	<u>1973 \$000</u>
Profit before tax	4,267	5,058
Provision for income tax	<u>1,533</u>	<u>2,810</u>
	2,734	2,248
Currency realignments	<u>63</u>	<u>484</u>
Net profit	2,797	2,732
Dividends to Parent Company	3,116	2,952"

While such dividends payments may be of interest under a "public interest criterion", this disclosure seems to be of little assistance

<sup>109</sup> The Nestlé Company (Australia) Limited, Public Submission to Prices Justification Tribunal, 1974, Section 13, p.108.

<sup>110</sup> The Nestlé Company (Australia) Limited, Matter No. N74/3650, Report by Prices Justification Tribunal, 7/11/74, p.14.

<sup>111</sup> *loc.cit.*



in assessing the profitability of the Australian Company for prices justification purposes; and although other detailed figures of profitability were placed before the Tribunal in confidence, the report by the Tribunal made no other comment on the Nestlé profitability.

*Inquiry 34: Berger Paints (11/11/74):*

The profitability ratios submitted by the Company in this inquiry were:-<sup>112</sup>

" BERGER PAINTS AUSTRALIA - CONSOLIDATED					
<u>Year</u>	<u>Sales</u> \$000	<u>Profit</u> <u>Before</u> <u>Tax</u>	<u>%</u>	<u>Profit</u> <u>After</u> <u>Tax</u>	<u>%</u>
30/6/72	21,450	2,075	9.6	1,091	5.1
30/6/73	23,394	2,314	9.9	1,129	4.8
30/6/74	24,940	2,293	9.2	1,146	4.6
<u>Year</u>	<u>Shareholders'</u> <u>Equity</u> \$000	<u>Profit</u> <u>Before</u> <u>Tax</u>	<u>%</u>	<u>Profit</u> <u>After</u> <u>Tax</u>	<u>%</u>
30/6/72	10,670	2,075	19.4	1,091	10.2
30/6/73	10,579	2,314	21.8	1,129	10.6
30/6/74	11,950	2,293	19.2	1,146	9.6
<u>Year</u>	<u>Total</u> <u>Assets</u>	<u>Profit</u> <u>Before</u> <u>Tax</u>	<u>%</u>	<u>Profit</u> <u>After</u> <u>Tax</u>	<u>%</u>
30/6/72	10,670	2,075	19.4	1,091	10.2
30/6/73	10,579	2,314	21.8	1,129	10.6
30/6/74	14,363	2,293	15.7	1,146	7.9

N.B. At 30/6/74 the written-down book value of Fixed Assets is \$4,134,000. It is believed that a true valuation would show an appreciation of some \$10,000,000. An independent professional valuation of the land and buildings is now being undertaken. The last valuation was made in 1946. "

In the above ratios, profit is defined as trading profit before deducting extraordinary items but including profit (net) on the sale of fixed assets. Total assets are fixed assets, investments and

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<sup>112</sup> Berger Paints (Australia) Pty. Limited, Matter No. N74/4082, Report by Prices Justification Tribunal, 11/11/74, p.22.

current assets less current liabilities.<sup>113</sup> Further examination of these ratios was not undertaken by the P.J.T.

*Inquiry 35: Australian and Kandos Cement (14/11/74):*

This hearing related to proposed higher prices for cement. The Tribunal's report set out the following Group results:-<sup>114</sup>

	<u>"Year ending 31/5/71 \$000's</u>	<u>Year ending 31/5/72 \$000's</u>	<u>Year ending 31/5/73 \$000's</u>	<u>10 months 31/3/74 \$000's</u>
Profit before taxation	4.486	6.586	5.285	4.159
Net profit after taxation	2.458	2.380	2.788	2.079
Shareholders' funds as per balance sheet	28.915	29.237	30.164	29.465
<u>Net profit/ shareholders' funds</u>	8.5%	8.14%	9.24%	8.35%"

From the 1973 Annual Report of the Company,<sup>115</sup> the definitions included in the *net profit/shareholders' funds* ratio can be established.

Net profit is shown as "trading profit", including all income from outside investments, profit (loss) on the sale of non-current assets and after deducting losses arising from the revaluation of fixed and other non-current assets, and provisions for plant maintenance, stock obsolescence and long service leave. Minority interests are excluded. Shareholders' funds are share capital and reserves less goodwill on consolidation, and excluding minority interest.

Comparisons with I.A.C. and R.B.A. averages were not undertaken.

<sup>113</sup> These definitions were ascertained from Lewis Berger and Sons (Australia) Pty. Limited Accounts and Group Accounts - 30th June, 1973.

<sup>114</sup> Australian and Kandos Cement Holdings Limited, Matters Nos. N74/3491 and N74/3465, Report by Prices Justification Tribunal, 14/11/74, p.9.

<sup>115</sup> Australian and Kandos Cement Holdings Limited Annual Report 1973 and Notice of Meeting.

However, the definitions of net profit and shareholders' funds are different to both the I.A.C. and R.B.A. definitions. The Tribunal has accepted the rate of return ratios as indicative of "... the main features of the Group results since 1971"<sup>116</sup> without analysis of the definitions used in the ratios.

*Inquiry 36: Containers (18/11/74):*

In this inquiry relating to proposed higher prices for cans and packaging products, the Tribunal stated that "... the following tables provided by the Company give useful indicators".<sup>117</sup>:-

"Return on Shareholders' Funds (measuring profit after tax and after interest)

"The annual report on Australian Business Profitability published by P. A. Management Consultants in March 1974 listed average return on shareholders funds for the Packaging Industry as follows:-

	<u>Per cent.</u>
1970	8.1
1971	7.2
1972	8.2
1973	9.3

For the last five years Containers Limited rate of return has been -

	<u>Per cent.</u>
1970	10.0
1971	11.5
1972	9.8
1973	9.6
1974	8.3*

(\*Amended by the Company to 9.3 following revaluation)

The Tariff Board report indicates a return on shareholders' funds of 10.7% for the Fabricated Metals Industry in 1972."

Return on Total Assets (measuring profit before tax and before interest)

"The rates of return disclosed in the P.A. reports in respect of total Manufacturing Industry is as follows:-

<sup>116</sup> Prices Justification Tribunal Report on Australian and Kandos Cement, *op.cit.*, p.9.

<sup>117</sup> Containers Limited, Matters No. N74/4410, N74/4411, N74/4412, N74/4640, N74/4641, Report by Prices Justification Tribunal, 18/11/74, pp.9-11.

	<u>Per cent.</u>
1971	9.0
1972	8.7
1973	9.6

The Company's rates of return on total assets have been:-

1971	11.2
1972	10.8
1973	11.2
1974	10.0* "

(\*Amended by the Company to 10.5 following revaluation)"

The Company also provided its profitability and capital structure ratios compared with those set out by the Tariff Board for 1972 in respect of the Fabricated Metals Industry -

"	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>Tariff Board</u> <u>1972</u> <u>Fab. Metals</u> <u>Industry</u>
	%	%	%	%	
<u>Profitability Ratios</u>					
Operating Profit/Funds Employed	13.3	12.4	12.9	12.4	12.6
Operating Profit/Sales	10.1	10.3	10.1	9.5	7.6
Net Profit/Sales	5.2	4.7	4.9	4.1	3.9
Net Profit/Paid Up Capital	22.6	18.9	19.2	19.4	23.7
Dividend Paid/Net Profit	44.8	49.8	56.7	57.8	46.2
Dividend Paid/Paid Up Capital	10.1	9.4	10.9	11.2	11.0
Net Profit/Funds Employed	6.8	5.6	6.2	5.3	-
<u>Capital Structure Ratios</u>					
Paid Up Capital/Funds	30.2	29.9	32.4	27.5	27.0
Borrowed Money/Funds Employed	31.2	35.3	27.0	27.6	38.8
Other Sources/Funds Employed	38.6	34.8	40.6	44.9	34.2
Working Capital/Funds Employed	37.9	37.9	36.1	35.2	45.3
Fixed Assets/Funds Employed	62.1	62.1	63.9	64.8	54.7
Long Term Debts/Shareholders Funds	33.4	44.7	33.3	48.7	-
Shareholders Funds/Funds Employed	58.8	57.4	65.0	64.1	- "

With the exception of the above statement of percentages which follow the ratios used by the I.A.C. there was no analysis of company profitability undertaken in the Tribunal's report.

In this case, the above comparisons with the I.A.C. *operating profit/funds employed* average appear to be valid. The 1974 Annual Report for Containers Limited discloses the following

figures:-118

		\$
Net profit before tax		7,983,842
<i>add</i> interest		<u>1,567,706</u>
		9,551,548
<i>less</i> income from outside investments		-
<i>less</i> profit from other than manufacturing activities		<u>-</u>
Operating profit		<u>\$9,551,548</u>
Net fixed assets		49,097,964
<i>add</i> current trade assets (stocks, debtors)		<u>45,717,080</u>
		94,815,044
<i>less</i> trade creditors	9,938,346	
accrued charges and general provisions	3,399,269	
bills payable	<u>5,336,565</u>	<u>18,674,180</u>
Funds employed		<u>\$76,140,864</u>

Ratio:

$$\frac{\text{Operating profit}}{\text{Funds employed}} = \frac{\$ 9,551,548}{\$ 76,140,864} = 12.54\%.$$

The annual report did not disclose the component accounts that comprise "accrued charges and general provisions". Since only "accrued charges" are deducted from funds employed in the I.A.C. definition, the *operating profit/funds employed* ratio would be lower than the 12.54%, and the Company's calculation of 12.4% would seem to be correct.

Thus, in this inquiry, the Company's calculations, accepted by the Tribunal, would appear to reflect the definitions of the series with which they are compared.

*Inquiry 37: A.P.P.M. (19/11/74):*

In the profitability section of the Tribunal's report on this inquiry, the following data was presented:<sup>119</sup>

	<u>"1971</u>	<u>1972</u>	<u>1973</u>
<u>1. Return on Shareholder's Funds per cent (a)</u>			
a) Reserve Bank of Australia Statistical Bulletin -			
. All Manufacturing	8.3	8.3	-
b) Tariff Board Report			
. Paper and Paper Products	10.8	9.8	-
. All Manufacturing	9.6	9.0	-
c) P.A. Report			
. Total Manufacturing	8.6	8.1	9.3
. Non Durables	8.8	8.5	9.6
d) A.P.P.M. Group	8.8	3.8	6.8
<u>2. Return on Total Assets per cent (b)</u>			
a) P.A. Report			
. Total Manufacturing	9.0	8.1	9.6
. Non Durables	9.1	9.1	10.1
b) A.P.P.M. Group	9.4	6.6	9.4

NOTE

- (a) Net Profit After Tax per cent Average Shareholders' Funds  
 (b) Net Profit Before Tax and Interest per cent Average Total Assets "

The report also stated that the Company's rate of return on shareholders' funds was 11.6% in 1973/74 and that the limitations of the comparisons, presented in the above table, have been pointed out in many previous reports. However, these comparisons comprise the majority of the "profitability" assessment presented in the Tribunal's report and led to the conclusions that "... we do not regard the Company's profitability as being such as would constitute a special obstacle at this time to its raising its prices on grounds that are otherwise justified".<sup>120</sup>

Once again some of the ratio comparisons have been carried out

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<sup>119</sup> Associated Pulp and Paper Mills Limited, Matter No. N74/4025, Report by Prices Justification Tribunal, 19/11/74, p.19.

<sup>120</sup> *ibid.*, p.20.

using inconsistent definitions between the Company's ratio and the series with which it has been compared. For example, profits of a capital nature (profit on the sale of fixed assets) has not been deducted from profit in making the "return on shareholders' funds" comparison with the Reserve Bank series. The 1973 net profit for the group<sup>121</sup> (\$4,072,914) includes an amount of \$51,776 representing profit on the sale of fixed assets. The Reserve Bank definition explicitly excludes "profits of a capital nature". Also, footnote (a) to the table states that the denominator is *average* shareholders' funds. This is not the case. The calculations shown in the Company's submission to the Tribunal show that shareholders' funds of \$60,166,186 - the amount as at 30th June, 1973 - was used as the denominator.<sup>122</sup> Thus the Company's ratio calculation for 1973 is:-

$$\frac{\text{Net profit}}{\text{Shareholders' funds}} = \frac{\$4,072,914}{\$60,166,186} = 6.8\%.$$

The Company's ratio using the Reserve Bank definition would be:

$$\frac{\text{Net profit}}{\text{Average shareholders' funds}} = \frac{(\$4,072,914 - 51,776)}{(\$60,166,186 + 59,401,171)/2} = 6.7\%.$$

Furthermore, the same ratio has been compared (in 1971 and 1972) with the Reserve Bank, I.A.C. and P.A. Report series. However, the I.A.C. definition does not use *average* shareholders' funds; and their definition include minority interests as a component of shareholders' funds, while the Reserve Bank's definition does not. Therefore one rate of return ratio calculated by a company cannot be compared with both the R.B.A. and I.A.C. definitions because they differ. Thus the comparisons accepted by the Tribunal and used in their conclusions in this inquiry are erroneous.

<sup>121</sup> Associated Pulp and Paper Mills Limited, Annual Report 1973, Consolidated Profit and Loss Statement and Balance Sheet.

<sup>122</sup> Associated Pulp and Paper Mills Limited, Prices Justification Act Public Submission, October 1974, p.31; and verified from the 1973 Annual Report, *op.cit.*, p.11.

In these ratios, shareholders' funds were defined as paid-up capital plus reserves and surplus less minority interests but before deducting "goodwill on consolidation". Net profit included all income from outside investments, profit on the sale of fixed assets and net profit applicable to minority shareholders. Therefore the numerator and denominator are inconsistently defined with regard to minority interests. (The denominator excludes minority interests and the numerator includes minority interests). In the return on total assets ratio, total assets are defined as all current assets including "non-operating assets" such as loans to directors and employees, fixed assets and investments, but excludes intangible assets. These definitions are different to those used by the Tribunal in previous inquiries.

*Inquiry 38: Blue Circle Southern Cement (29/11/74):*

The Company involved in this application, Blue Circle Southern Cement Limited, was incorporated in April, 1974 following a merger of Southern Portland Cement (S.P.C.) and Associated Portland Cement Manufacturers (Australia) Limited ("A.P.C.M.(A)"). S.P.C. was also a subsidiary of Australian Portland Cement Limited for the year ended 31 May, 1972, but then commenced operations on its own behalf.<sup>123</sup> For these reasons, the profitability assessment by the Tribunal in this inquiry was divided into the consideration of the results of both A.P.C.M.(A) and S.P.C. These results were shown as follows:<sup>124</sup>

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<sup>123</sup> Blue Circle Southern Cement Limited, Matter No. N74/3855, Report by Prices Justification Tribunal, 29/11/74, pp.5-6.

<sup>124</sup> *ibid.*, p.28.



	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>
	<u>Profit from operations before taxes and interest on net funds employed</u>				
APCM(A)	13.0%	17.5%	16.1%	19.7%	13.8%
SPC	10.1%	13.7%	15.5%	-	18.4%
	<u>Above return with standard 47½% tax</u>				
APCM(A)	6.8%	9.2%	8.5%	10.3%	7.2%
SPC	5.3%	7.2%	8.1%	-	9.7%

Source : Company annual reports

The Tribunal stated that these A.P.C.M. (A) results are for the year ending December, while those for S.P.C. are for the year ending May. Assets and profits from non-cement activities (dulling and lime activities) have been excluded. Net funds employed are defined as net fixed assets plus working capital (after elimination of investment and returns therefrom in non-cement making activities). It was also noted that some of the plant used by the Company was old and had not been recently revalued. Further information about the Company's current financial position was supplied to the Tribunal in confidence.<sup>125</sup>

The public submission of the Company included the following Stock Exchange Announcement with respect to the six-months operation ended June, 1974:

"Group net profit after taxation (unaudited) for the six months was 33.3% lower than the combined pre-merger profits of A.P.C.M. (A) and S.P.C. for the corresponding six months of 1973."<sup>126</sup>

The Tribunal concluded its profitability analysis by stating that:

"Although the Company's results for the year have had an identifiable bearing on our conclusions we are precluded by the confidentiality of nearly all the information relating to this from specifying the relevant details here."<sup>127</sup>

<sup>125</sup> *ibid.*, pp.28-29.

<sup>126</sup> *ibid.*, p.29.

<sup>127</sup> *ibid.*, p.30.

However, from the 1974 Annual Report, the results for the Blue Circle Group can be compared with that of the 1973 A.P.C.M. (A) results shown above (page 141). The only difference between the calculations of the rate of return which follow and those shown in that table is the non-cement activities. These are not shown in the 1974 annual report<sup>128</sup> and therefore the "total" group rate of return is shown for both years. As can be observed from the 1973 results, this difference is very small. The definitions of "profit from operations before taxes and interest/net funds employed" were explicitly set out in the Blue Circle submission,<sup>129</sup> and to ensure comparability, those definitions will be followed in this comparison.

	Consolidated APCM(A) Year ended 30/12/73 (Source: Blue Circle Submission) <u>\$000</u>	Consolidated Blue Circle, Year ended 30/12/74, (Source: 1974 Annual Report) <u>\$000</u>
Net profit after tax	2,115	2,231
Add taxation provision	1,319	1,312
interest paid	<u>836</u>	<u>1,084</u>
	4,270	4,627
Less dividend/interest income	<u>(212)</u>	<u>(681)</u>
Profit before interest and tax	<u>4,127</u>	<u>3,946</u>
Net fixed assets	23,794	42,983
Current assets	14,571	25,189
Less current liabilities	<u>(8,587)</u>	<u>(17,288)</u>
Net funds employed	<u>\$29,778</u>	<u>\$50,884</u>
Ratio:	13.86%	7.75%

<sup>128</sup> Blue Circle Southern Cement Limited, Annual Report and notice of Annual Meeting 1974.

<sup>129</sup> Public submission by Blue Circle Southern Cement Limited, Prices Justification Tribunal Inquiry, 14th October, 1974, Appendix II.

Thus the Tribunal's conclusions can be ratified by this comparison. The rate of return on funds employed, as defined, has dropped considerably between 1973 and 1974. It must be noted that the operating profit as defined above is the same as that of the I.A.C. but the definition of funds employed is different. The liabilities that are deducted from funds employed by the Company includes bank-overdrafts, short term borrowings and provisions, and the current assets include cash and short term deposits. No comparisons with the I.A.C. ratios were attempted by the P.J.T.

*Inquiry 39: Australian Estates (10/12/74):*

This inquiry, which involved proposed increases in wool handling charges, was based on a submission by the Australian Estates Company Limited that sought to recover 95% of unavoidable cost increases.<sup>130</sup> The following statement was reported by the Tribunal as indicating "... the overall return to the Company and its subsidiaries taken as a whole in relation to shareholders' funds and turnover for the years 1969-1973. The figures include the effects of various overseas activities". The Tribunal had previously noted that there were "considerable difficulties" in calculating and comparing turnover over a 5 year period due to changing conversion rates and definitions, and changes in compilation bases used by the Inland Revenue Department.<sup>131</sup>

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<sup>130</sup> The Australian Estates Company Limited, Matter No. N74/3936 Report by Prices Justification Tribunal, 10/12/74, p.5.

<sup>131</sup> *ibid.*, pp.9-10.

THE AUSTRALIAN ESTATES CO. LTD. AND SUBSIDIARIES

		Group Profit (per Audited Accounts)	Shareholders Funds	% Return
		££	££	
1969		802,913	13,959,561	5.75
1970		567,471	14,285,091	3.97
1971		714,759	15,445,174	4.63
1972		1,502,198	20,531,815	7.80
1973		3,752,170	28,128,995	13.34
Conversion Rate		\$A	\$A	
1969	(\$A2.1429 = ££1)	1,720,562	29,913,943	5.75
1970	(\$A2.1429 = ££1)	1,216,034	30,611,521	3.97
1971	(\$A2.1429 = ££1)	1,531,657	33,097,463	4.63
1972	(\$A1.8404 = ££1)	2,948,685	37,786,752	7.80
1973	(\$A1.5595 = ££1)	5,851,509	43,867,168	13.34
Turnover		££	\$A	
1969		69,705,000	149,371,000	
1970		59,749,000	128,036,000	
1971		58,899,000	126,215,000	
1972		88,020,000	161,992,000	
1973		56,050,000 *	87,410,000 *	

Shareholders' funds were defined as paid up capital plus reserves and unappropriated profits but excluding minority interests. Group profit was profit after taxation and extraordinary items, and excluded minority interests.

*Inquiry 40: B.H.P. (12/12/74):*

In this third public inquiry relating to B.H.P. the profitability of the Companies was considered at some length.<sup>132</sup> The Tribunal's report on the Company's position can be summarized as follows:-

(1) The decline in reported steel section profit (after deducting the fixed asset utilization charge (F.A.U.) and tax) from \$13.856 million (1973) to \$5.206 million (1974) was significantly influenced by lower investment allowance deductions and extended deferred tax accounting. If adjustments had been made for these two items, 1974 profit would have increased to \$18.345 million, and could be compared to the \$13.856 million (1973), (pages 17-18).

<sup>132</sup> The Broken Hill Proprietary Limited and Australian Iron and Steel Proprietary Limited, Matter No. N74/4808, Report by Prices Justification Tribunal, 12/12/74, pp.17-21.

- (2) "In their accounting reports and public statements the Companies have reported profitability ratios in terms of net profit after tax (but before financing charges) to total funds employed in terms which differ from the methods which most companies use in reporting such statistics. Because of the methods used by them most other companies would report higher profitability under the same set of circumstances. If the profit were adjusted to allow for the substitution of tax allowable depreciation in lieu of fixed asset utilization as used by the Companies, the net profit after tax for 1973-1974 would, on the information supplied by the Companies, be in the order of \$38 million. In saying this we recognise that there may also be defects in utilizing tax depreciation if it does not correspond with a properly assessed charge for depreciation." (page 19).
- (3) *Operating profit/funds employed* (undefined) on reported figures was 5.24% for 1974; or 8.9% if the 1974 asset revaluation of \$176.85 million was eliminated and depreciation calculated using taxation rates rather than F.A.U. charges. (page 19).
- (4) *Net profit after tax/shareholders' funds* (after substituting tax depreciation for F.A.U.) equals 3.64% for 1974 compared to 0.5%, as reported by B.H.P. Further adjustment for the 1974 asset revaluation increases the ratio to 4.37%. (pages 19-20).

The rate of return and profitability assessment of the Companies was concluded as follows:

"Even after adjustments such as the above have been effected, the profitability ratios are still below the average for industry. We have stressed on numerous occasions the shortcomings of comparisons of accounting ratios between different industries. Nevertheless, the adjusted ratios reflect a rather better picture of profitability than that indicated by the figures used in the Companies' reports on the financial results for the steel section over the past two or three years."; and that

"In our opinion, however, there should not be too much preoccupation with the calculation of the most appropriate accounting ratios. We consider that it is more important that the prices should be set on a basis which will give the Companies some incentive to proceed on the understanding that their investment in necessary new capital would not go unrewarded."<sup>133</sup>

Thus the Tribunal has undertaken a more rigorous analysis of the component definitions of the rate of return ratios, in this third

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<sup>133</sup> *ibid.*, pp.20-21.

inquiry relating to B.H.P. However, it must be pointed out that the ratio of net profit after tax (but before financing charges) to total funds employed, quoted by the Tribunal's report (page 19) and the 1974 B.H.P. Annual Report (page 36), continues to use a definition of financing charges that are net of tax as was illustrated in the discussion of the first inquiry into B.H.P.<sup>134</sup> If similar calculations<sup>135</sup> are carried out here, given a 47.5% tax rate for the year ended 31 May, 1974, the 1.0% quoted by the 1974 B.H.P. annual report for the return on total funds is adjusted to 1.62% which represents *net profit after tax plus financing charges (gross)/total funds employed*. This distinction between the definitions of this ratio was, once again, not recognised.

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<sup>134</sup> See pages 71-75.

<sup>135</sup> From the 1974 B.H.P. Annual Report, the calculation is:

	<u>\$000</u>	
(1) net profit after tax before financing charges (net of tax)	13,844	
net profit after tax	<u>5,206</u>	
Financing charges (net of tax)	<u>8,638</u>	
(2) gross financing charges = $\frac{1}{1-0.475} \times \$8,638$		= \$16,453.
(3) profit after tax	5,206	
financing charges (gross)	<u>16,453</u>	
<b>Profit after tax</b>		
before financing charges	<u>21,659</u>	
(4) Ratio:		
<u>profit after tax before financing charges</u>		= $\frac{\$21,659}{\$1,337,026}$
<u>total funds employed</u>		
		= 1.62%.

*Inquiry 41: Austral Motors (17/12/74):*

This application for a proposed price increase was based on the restoration of dealer percentage margins on Chrysler vehicles.<sup>136</sup> The profits of the Company were considered, but rates of return on capital were not examined. The Company's and Tribunal's arguments centered around whether there would be a reduction in profits for 1974-1975 below that of the previous year. There was little other assessment of profitability undertaken in the Tribunal's report.

SUMMARY AND CONCLUSIONS

This chapter aimed at examining the use of the historical accounting rate of return on capital employed by the P.J.T. in its forty-one public inquiries held since its inception in August, 1973 to the end of 1974. The Tribunal's conclusions as to the profitability of the companies at these inquiries were based on the rate of return; and the assessment of a company's profitability on this basis left a lot to be desired.

The Tribunal has not specified what definitions of the numerator and denominator of the rate of return are needed for the purpose of prices justification. This has led to several rate of return definitions being submitted by any one company at public hearings. For example, Bradmill (13/10/74) submitted *net profit after tax/shareholders' funds*, both before and after deducting minority interests. Furthermore, companies were permitted to present their own definitions of the rate of return which resulted in a diverse number of ratios, each with a different set of definitions of the numerator and denominator, being submitted to the Tribunal for consideration for one

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<sup>136</sup> Austral Motors Pty. Limited, Matter No. N74/4605, Report by Prices Justification Tribunal, 17/12/74.

purpose - prices justification. In several inquiries, there was very little analysis of the component definitions of the rate of return submitted by the companies. The Tribunal did not appear aware of the differences between definitions - for example, the use of net profit after tax before interest net of tax instead of net profit after tax before gross interest, by B.H.P.

To the end of 1974, the rates of return of fourteen companies have been subject to comparisons with the I.A.C. or Reserve Bank series average guidepost. In eight of these cases it is possible to show that the calculations did not conform with the definitions of the series under comparison. The following table (Table 3.2) shows the companies concerned and the reasons for the invalid comparisons made by the P.J.T. In the six other cases - A.P.M., S.A. Brewing, Lever and Kitchen, Kellogg, Colgate-Palmolive, and Containers - it was impossible to determine the validity of the comparisons from the data disclosed in the public reports of the Tribunal or from the submissions of the companies, although Containers' *operating profit/funds employed* calculation appeared to comply with the I.A.C. definition. Table 3.2 summarizes results presented in the detailed analysis of each public inquiry in Section 3 of this chapter.

It would appear that the Tribunal has had little respect for the comparison of a company's rate of return with that of average profitability ratios published by the I.A.C. and Reserve Bank. Despite this, the Tribunal has stated in various public reports and in its Annual Report that such comparisons are one of the major methods of assessing company profitability. The P.J.T. appears to give very little weight to the criteria of profitability when considering a company's submission for an increase in prices. It is little wonder that one of the principal inferences drawn from the survey carried



out for the Australian Industries Development Association related to "... an unsympathetic attitude of the Tribunal to the need for profits and to the implications of reduced profits ...". One respondent in the survey stated that "not only must profitability be restored, but the definitions of profitability must be reviewed".<sup>137</sup>

The investigation in Chapters 2 and 3 has been restricted to the definitional problems of using the accounting rate of return in prices justification. Comparisons using a rate of return measure can also be severely distorted by irregular patterns of asset valuation. By definition, the use of historical costs fail to show the current value of non-monetary assets. Intermittent revaluations of assets by some companies (but not others) which affects the denominator (funds employed) and the numerator (for example, through the depreciation figure), tends to make the rate of return useless for comparative purposes. Chapter 1 described the attempt, with some success, of the Monopolies Commission to overcome this major measurement problem in using the rate of return on capital, seen by Silberston and Solomons in 1952. At that time, they stated that "... the formidable problems attendant on any attempt to arrive at an accounting measure of the rate of return on capital stem mainly from the difficulties concerned with the valuation of fixed assets".<sup>138</sup> It will be the aim of Chapter 4 to examine "the problem of valuation".

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<sup>137</sup> Norman, N.R., *The Nature and Economic Implications of the Prices Justification Tribunal*, Australian Industries Development Association, Canberra, 1975, pp.18-25.

<sup>138</sup> Silberston, A. and Solomons, D., *op.cit.*, p.798.

Table 3.2

Definitional Discrepancies in I.A.C. andReserve Bank Series Comparisons

<u>Company</u>	<u>Reason for Discrepancy</u>
G.M.H. (21/12/73)	"Average" shareholders' funds as per the Reserve Bank definition was not used.
C.U.B. (9/4/74)	"Average" shareholders' funds as per Reserve Bank definition was not used. Profit on sale of fixed assets was omitted in calculating the I.A.C. "net profit".
Shell (3/5/74)	In an I.A.C. comparison: <p>Minority interests, and interest on debentures, fixed term loans and current accounts were not included in operating profit.</p> <p>Expenses not classed by the I.A.C. as relating to manufacturing were incorrectly deducted in arriving at operating profit.</p> <p>Income from outside investments and profit on the sale of fixed assets were not deducted from operating profit.</p> <p>Other debtors were omitted from funds employed.</p>
Mayne-Nickless (2/8/74)	"Minority interests" were not included in the net profit or shareholders' funds in an I.A.C. comparison. Profit on sale of fixed assets was omitted in calculating the I.A.C. "net profit".
Wills (29/8/74)	Inconsistent treatment of "interest from subsidiaries" and "amounts receivable from subsidiaries" in an <i>operating profit/funds employed</i> (I.A.C.) comparison. Funds employed incorrectly included cash, term deposits, investments and accrued charges, and did not include provision for income tax in an I.A.C. comparison.
Arnotts (13/9/74)	"Minority interests" were not included in net profit or shareholders' funds in an I.A.C. comparison.
Tooth (18/10/74)	"Average" shareholders' funds as per Reserve Bank definition was not used. Surplus on disposal of fixed assets not included in the net profit in comparing the I.A.C. <i>net profit/shareholders' funds</i> ratio.
A.P.P.M. (19/11/74)	Profit of a capital nature (sale of fixed assets) not deducted from profit as per Reserve Bank definition.

## CHAPTER 4

### THE PROBLEM OF ASSET VALUATION.

The accounting rate of return, reported net profit on the reported value of assets employed, is heavily dependant on the way in which the various components of the numerator and denominator are measured and valued. The basis of asset valuation affects the numerator (for example, in the case of non-current assets, through the depreciation figure) and the denominator (funds employed). The traditional basis of valuing non-current assets adopted by Australian companies is "historical cost". In the traditional historical cost accounting systems, capital gains and losses are not recognised as they occur but are recognised when an asset is sold (thus including gains (losses) which have accrued over several periods in the reports for the current period), and as the asset is used up in production. This means that output is priced on a current cost basis but the cost of the asset services are calculated on an historical cost basis. Furthermore, the balance sheet does not show the current value of fixed (non-current) assets, but rather is an aggregation of asset prices that existed in several different periods of time. Thus in terms of changes in the general level of prices, and in specific asset prices, the profit figure calculated under an historical cost accounting system cannot be compared, in any meaningful way, with the value of assets reflected in the balance sheet. When calculated on this basis, comparisons using the rate of return over time, between firms or with an industry average are meaningless unless the growth pattern of the firm conforms with the industry average. For example, the rate of return of a company will fall as its assets are replaced at higher prices; or two firms which made identical profits and employ identical physical capital

may show a different rate of return simply because they had purchased their assets at a different time.

Although the basis of valuation for fixed assets adopted by most Australian companies is cost, a large number of these companies revalue all or some of their fixed assets from time to time.

Professor Chambers showed that two-thirds of the companies listed on one or more Australian stock exchanges over the period 1950-1970 made revaluations; and that many who did not revalue were utilities or financial and investment companies whose business was such that revaluations of fixed assets would not be expected.<sup>1</sup> The following table<sup>2</sup> illustrates the extent to which revaluations have increased the net assets of some of the larger companies:-

TABLE 4.1

Asset Revaluations by Some Large Australian Companies

Company	Number of revaluations	Total amount of revaluations	Date last revaluation	Net assets after last revaluation*
		\$m		\$m
Broken Hill Pty.	5	352	1968	813
Burns Philp	11	15	1970	92
Coal & Allied Industries	3	12	1967	33
Imperial Chemical Industries A & NZ	7	27	1969	190
Mount Isa Mines	2	35	1963	66
Myer Emporium	7	53	1969	143
North Broken Hill	2	84	1970	125

\*Figures from consolidated balance sheets.

The Chambers' study made several important points about the pattern of asset revaluation by Australian companies:

- (1) there was no regularity in asset revaluations;

<sup>1</sup> Chambers, R.J., *Securities and Obscurities*, op. cit., p. 53.

<sup>2</sup> loc. cit.

- (2) the main assets revalued were fixed assets - mainly land and buildings;
- (3) there are long periods between revaluations by any one company, and for a large number of presently listed companies, no revaluations have been made.

Chambers concludes that "...Investors are therefore unable to know... the rate of return currently earned by companies...", and that "... the majority of balance sheets do not give anything like an up-to-date view of the states of affairs of presently listed companies".<sup>3</sup>

The following extracts from the balance sheets of two companies that have appeared before the P.J.T. illustrate the mixture of valuations which result in a meaningless aggregate for funds employed.

These asset revaluations which lead to large differences in the book values of assets at irregular intervals make the rate of return useless for comparative purposes. The remainder of this Chapter will be devoted to examining the way in which the P.J.T. approached the problem; and to proposing a method for adjusting the rate of return so that comparisons over time, between companies and with an industry average may be enhanced.

#### THE P.J.T.'s APPROACH TO THE PROBLEM OF VALUATION

On some occasions the P.J.T. has recognised the distortion to the rate of return caused by different asset valuation methods, and has attempted to eliminate the revaluation by recalculating the ratio. For example, in the first inquiry before the Tribunal, the rate of return on funds employed submitted by B.H.P. (2.1%) was calculated with depreciation ("fixed asset utilization" or F.A.U.) based on

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<sup>3</sup> *ibid.*, pp. 54 - 55.

TABLE 4.2Example 1Extracts from the Broken Hill Proprietary Annual Report, 1974:Fixed Assets

(includes land, buildings, plant, machinery and equipment)

	Gross Book Value \$	Accumulated Depreciation \$	Net Fixed Assets \$
<i>At Directors' Valuation</i>			
1961	3,798,000	3,795,000	3,000
1963	181,000	98,000	83,000
1964	91,000	1,000	90,000
1967	22,381,000	11,289,000	11,092,000
1968	16,000	3,000	13,000
1970	45,000	1,000	44,000
1971	718,000	20,000	698,000
1972	469,000	39,000	430,000
1973	218,000	11,000	207,000
1974	1,140,308,000	82,026,000	1,058,282,000
At Cost	685,686,000	131,009,000	554,677,000
	<u>1,853,911,000</u>	<u>228,292,000</u>	<u>1,625,619,000</u>

Example 2Extract from the Carlton and United Breweries Annual Report, 1973:Fixed Assets

## Freehold and Leasehold Properties -

At Cost	59,896,535		
Less: Provision for Depreciation	<u>7,299,280</u>	52,597,255	
<i>At Independent Valuation 1951</i>	8,686,725		
Less: Provision for Depreciation	<u>38,756</u>	8,647,969	
<i>At Officers' Valuation 1962</i>	597,322		
Less: Provision for Depreciation	<u>376,912</u>	220,410	
<i>At Independent Valuation 1971</i>	22,689,418		
Less: Provision for Depreciation	<u>835,891</u>	21,853,527	
<i>At Independent Valuation 1973</i>	18,434,838		
Less: Provision for Depreciation	-	<u>18,434,838</u>	101,753,999

## Machinery, Plant and Equipment -

At Cost	50,448,320		
Less: Provision for Depreciation	<u>26,646,551</u>	<u>23,801,769</u>	
		<u>125,555,768</u>	

current replacement costs of the fixed assets. The Tribunal stated that

"In the published submission the rate of profit on capital was defined according to a number of accounting conventions relating to the F.A.U. charge which made comparisons with other companies a hazardous exercise"<sup>4</sup>,

and requested that the Companies recalculate the rate of return with the depreciation based on taxation methods. The result was 5.1%.

Only the numerator of the rate of return was adjusted. There was no attempt to adjust the amount of funds employed for asset revaluations that had been made over the period 1961-73. The 5.1% was compared with an Australian average, and this comparison led to the conclusion that "...the Companies were less profitable in the past financial year than large Australian companies on average in earlier years."<sup>5</sup>

In the third B.H.P. hearing (December 1974), the Tribunal further expressed the necessity to adjust B.H.P.'s rate of return if comparisons were to be made. However, in this inquiry, adjustments were made to the numerator, to allow for depreciation at taxation rates, and to the denominator, to eliminate a revaluation of assets in respect of the steel section, which amounted to \$m176.850 in 1973-74. The Tribunal stated that these two adjustments resulted in an *operating profit/funds employed* ratio of 8.9%, rather than 5.24%.<sup>6</sup> The ratio of net profit after tax to shareholders'

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<sup>4</sup> Prices Justification Tribunal Report on B.H.P. 10/10/74, *op. cit.*, p. 25.

<sup>5</sup> *ibid.*, p. 27.

<sup>6</sup> Prices Justification Tribunal Report on B.H.P., 12/12/74, *op. cit.*, pp. 19-20. The Tribunal's Report does not make clear if the 5.24% is obtained after adjusting for taxation rates of depreciation. However, since the 1973-74 reported steel return on total funds (unadjusted) is 1.0% (B.H.P. Annual Report 1973-74, p. 36), it would appear that this is the case.

funds would be 4.37% instead of 0.5% if both the adjustments for depreciation and the revaluations were made.<sup>7</sup>

The A.P.M. and Mayne-Nickless inquiries provide further examples of the Tribunal's attempt to eliminate the effects of asset revaluations on the rate of return. In the case of A.P.M., the Tribunal adjusted the 1972/73 profit return (before interest charges and taxation) on average fixed assets from 5.9% to 6.6%, and the return (before tax) on shareholders' funds from 9.4% to 11.2%, to eliminate the effect of a 1972 revaluation of assets.<sup>8</sup> Similarly, the Tribunal adjusted the net profit/shareholders' funds ratio for Mayne-Nickless to eliminate the effect of the revaluations of assets in 1972/73. This had the effect of raising the rate of return on shareholders' funds from 10.87% (as submitted by the Company) to 12.12%.<sup>9</sup> On other occasions, the Tribunal has ignored the distortion. For example, the inquiry relating to Carlton and United Breweries Ltd. completely ignored the asset revaluations (shown in Table 4.2 above), in examining the Company's rate of return ratios.<sup>10</sup>

A major limitation of the I.A.C. and Reserve Bank series of rate of return ratios, which the P.J.T. has used as a guidepost against which to compare companies' returns,<sup>11</sup> is that both series are compiled from company balance sheet and income statement data. This means that these series are also distorted by the irregular pattern

<sup>7</sup> *loc. cit.*

<sup>8</sup> Prices Justification Tribunal Report on A.P.M. 24/10/73, *op. cit.*, p. 23.

<sup>9</sup> Prices Justification Tribunal Report on Mayne-Nickless 2/8/74, *op. cit.*, pp. 30-32.

<sup>10</sup> Prices Justification Tribunal Report on Carlton and United Breweries 9/4/74, *op. cit.*, p. 18.

<sup>11</sup> See Chapter 3.



of asset revaluation carried out by companies in Australia. The I.A.C. series are compiled from a questionnaire completed from the published accounts of each manufacturer. Accordingly, assets are at "book value" and any revaluations would be included in funds employed and shareholders' funds.<sup>12</sup> The Reserve Bank Statistical Bulletin Company Supplement defines the aggregate balance sheet and profit and loss items as including asset revaluations.<sup>13</sup>

The Tribunal has referred to these limitations in discussing the guideline series. The Annual Report states that:

"There are several factors which to some extent detract from the value of such comparisons; for example:  
(a) when figures of return on capital and the like are calculated on a nominally similar basis to the above series, [I.A.C. and Reserve Bank] problems in measuring capital may render comparisons less significant;"<sup>14</sup>

Despite such reservations, the Tribunal has continually used the I.A.C. and Reserve Bank series as guideposts against which to compare a company's rate of return. In some inquiries the comparison has been carried out using a recalculated company ratio with the asset revaluation effect eliminated, but in other inquiries, the company's rate of return was not adjusted before the comparison was undertaken.<sup>15</sup> In any case, no attempt was made to adjust the I.A.C. or Reserve Bank guidepost series for the distortion caused by asset revaluations, or to develop a series in terms of up-to-date values.

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<sup>12</sup> See Appendix 2, (I.A.C. Questionnaire).

<sup>13</sup> Reserve Bank Statistical Bulletin Company Supplement, Jan. 1975, *op. cit.*, p. 1 and pp. 28-33. Only the "flow of funds" data is free of the effects of asset revaluations.

<sup>14</sup> First Annual Report of the Prices Justification Tribunal 1973-74, *op. cit.*, p. 22

<sup>15</sup> For example, the Mayne-Nickless Inquiry (P.J.T. Report, *op. cit.*, p. 32) compared to the Carlton and United Breweries Inquiry (P.J.T. Report, *op. cit.*, p. 18).

The reason given for companies revaluing assets include giving shareholders and investors a more up-to-date indication of the asset values, to correct apparently excessive earning rates in times of inflation and as a defence against takeover bids.<sup>16</sup> However, the revaluations undertaken by the companies are not always to disclose the current value of the assets. The valuations are often extremely arbitrary. For example, where revaluation is accompanied by a bonus share issue, the revaluation is often restricted to the amount of the bonus issue.<sup>17</sup> In other cases, the current value of the assets are known to the company but the revaluation is restricted to a lesser amount and labelled "directors' valuation".<sup>18</sup> For these reasons, and the fact that some companies revalue their assets while others do not, the I.A.C. and Reserve Bank series, which are a conglomeration of historical cost and arbitrarily revalued asset amounts, would not appear to be a useful series to employ as a profitability guidepost. Indeed, it would seem that the P.J.T. has not learnt from the experience of the Monopolies Commission. The I.A.C. and Reserve Bank series could be compared with the series that the Monopolies Commission became dissatisfied with in 1966, which was described as a "...hotchpotch of historic-cost and replacement-cost valuations of capital and depreciation."<sup>19</sup>

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<sup>16</sup> Chambers, R.J., *Securities and Obscurities*, *op. cit.*, pp. 58-60.

<sup>17</sup> For example, see Carlton and United Breweries Ltd., 1973 Annual Report, p. 3 and Chambers, R.J., *Securities and Obscurities*, *op. cit.*, p. 53.

<sup>18</sup> For example, B.H.P. use current replacement cost on which to base their fixed asset utilization (depreciation) charge. However, their revaluations of assets (1968 and 1974) are restricted to a level well below the known current replacement cost. Personal communication with Mr. G.E. Heeley, Assistant General Manager, Accounting - B.H.P.

<sup>19</sup> Rowley, C.K., *op. cit.*, p. 145. This was described as the Monopolies Commission "Series 2" in Chapter 1, p. 6.

The I.A.C. and Reserve Bank series was used by the Tribunal with apparently little concern up until the fourth B.H.P. Report on 28th July, 1975. In that inquiry, B.H.P. relied on an I.A.C. comparison to justify their proposed price rise of 14%. This rise would bring the company's level of profit near to the average of the levels for other companies included in the I.A.C. series.<sup>20</sup> For the first time in a public inquiry, the Tribunal carefully examined the I.A.C. series and found that:

"...the statistics compiled by the I.A.C. do not make any adjustments for such matters as revaluations of assets or changes in accounting practices. Nor do they standardize for the treatment of depreciation. The result is that companies which have revalued assets are treated in the same way as companies which have not."<sup>21</sup>

The Tribunal further commented on the comparison of a company's rate of return with that of an industry average.

"Such comparisons are greatly affected by the age of assets. For two companies employing historical methods of measuring return on capital, the return in a period of inflation will be much higher for the company with the older assets, other things being equal."<sup>22</sup>

After nearly two years of operation, this was the first public report issued by the Tribunal that made the "problem of asset valuation" quite explicit. Despite these limitations the Tribunal continued to use the I.A.C. series in the B.H.P. inquiry. Instead of attempting to adjust the guidepost being used, or develop a new guidepost series that would overcome these distortions, the P.J.T. adjusted the Company's funds employed by interpolating portions of the 1968 revaluation over the period 1962-1968 and the 1974 revaluation

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<sup>20</sup> The Broken Hill Proprietary Company Limited and Australian Iron and Steel Proprietary Limited, Matter No. N75/1953, Report by Prices Justification Tribunal, 28/7/75, p. 112.

<sup>21</sup> *ibid.*, p. 123.

<sup>22</sup> *loc. cit.*

over the period 1969-1974, in accordance with movements in different indices.<sup>23</sup> This adjusted rate of return for B.H.P. (steel section) was then compared to the I.A.C. average of manufacturing industry series (unadjusted) and the following conclusion tendered:

"...our examination of the comparisons leads us to the conclusion that the profit levels achieved by the Steel Industry Section are relatively low and should be increased."<sup>24</sup>

Thus, unlike the action taken by the Monopolies Commission from 1966 onward in developing "purified historical cost" and "purified replacement cost" guidepost series, the Tribunal has recognised the deficiencies but has made no attempt to develop a series free of distortions.

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<sup>23</sup> This adjustment was carried out to "smooth out" the revaluations. The indices used were:

- (a) the gross fixed investment deflator;
- (b) the gross domestic product implicit deflator;
- (c) the consumer price index; and
- (d) the B.H.P. construction cost index.

It was found that the choice of index made little difference to the adjustment. The result of the comparison with the I.A.C. series was shown as follows:

	B.H.P.	I.A.C. Average of Manufacturing Industry
	<u>Operating Profit</u>	<u>Operating Profit</u>
	Total Funds Adjusted	Total Funds Employed
	(using Construction	
	Cost Index)	
	%	%
1964	9.7	11.7
1965	9.4	11.5
1966	8.4	10.2
1967	8.7	10.6
1968	8.3	11.4
1969	8.0	12.6
1970	8.9	13.0
1971	4.9	12.1
1972	3.4	11.5
1973	4.1	13.0
1974	5.2	N/A

*ibid.*, pp. 122-126 and pp. 137-155.

<sup>24</sup> *ibid.*, p. 126.

In the next section of this Chapter a method is devised to restate the accounting data of eight companies that have appeared before the P.J.T. on an "up-to-date" or "current value" basis, and to compare the current value results with the results that would be presented to the Tribunal from company annual reports. In these cases, the I.A.C. ratio *operating profit/funds employed* and its component definitions are used. Finally, an attempt is made to develop a "current value" guidepost series from Reserve Bank data (using Reserve Bank definitions), and the eight companies' adjusted rate of return is compared with the guidepost.

This is not the place to debate which current value or current cost remedy is the most desirable to cure the ills of the historical cost accounting system, as outlined previously.<sup>25</sup> The following methodology uses indices to bring historical asset values to current values, and those "current values" are compared with the conglomeration of historical cost and revaluations that have been used by the Tribunal in its rate of return analysis.

#### RESTATEMENT OF COMPANIES DATA TO CURRENT VALUES USING THE I.A.C.

##### OPERATING PROFIT/FUNDS EMPLOYED DEFINITIONS

##### *Assumptions and Methodology*<sup>26</sup>

The current value of fixed assets, including land, buildings, plant, machinery and equipment, can be obtained in three ways:

<sup>25</sup> See page 151.

<sup>26</sup> This methodology is a revised version of that presented in Leech, Stewart A., and Rundle, Catherine M., "Asset Valuation in Prices Justification", *Accounting Education*, Journal of the Accounting Association of Australia and New Zealand, Vol. 15 No. 2, November 1975, forthcoming.

- (1) an appraisal may be obtained from an independent valuer;
- (2) specific price indices may be used to adjust original cost of assets;
- (3) manufacturers may be asked to supply current cost quotations.<sup>27</sup>

The first and third alternatives were not feasible so revaluations were made by using specific index numbers. An index for particular assets or an asset class should be chosen which reflects price movements for the asset in question. Ideally, this means applying a separate index to each type of asset. Even if such indices were available, this would be a difficult task without access to company records and accounts. This is so because in their financial statements, companies separate their fixed assets only into broad groups, for example, "land and buildings".

Every company which has appeared before the P.J.T. has been different in the sense that either their products were completely diverse or they operated in different geographical regions. Therefore the assets of individual companies should be revalued using different indices. However, such indices are not available in Australia. It was decided that the application of indices based on national figures, which were available, would be sufficient for present purposes.

Both the numerator and denominator of operating profit/funds employed were restated in "1972-73 value" terms. Current income or profit was derived after adjustment to the conventional accounting profit shown in the income statement. These adjustments included:

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<sup>27</sup> Gress, E.J., "Application of Replacement Cost Accounting: A Case Study", *Abacus*, Vol. 8, No. 1, June 1972, p. 9.

- (1) a depreciation adjustment, being the difference between depreciation based on current (1972-73) value of fixed assets and that based on original cost;
- (2) a stock valuation adjustment being the difference between opening inventory at original cost and opening inventory valued at current (1972-73) value.

The difference between balance sheet assets valued by companies at cost and these assets valued on a current value basis represented the adjustment made to the funds employed by a company. The adjustment procedure was limited to non-current assets on the assumption that most current assets will usually reflect current values.

The indices were constructed from Australian National Accounts 1972-1973. Implicit price indices, with a 1972-1973 base, were calculated from the series of investment expenditures in current and constant dollars. These calculations are shown in Appendix 5. It was possible to construct indices by this method for:

- (a) Buildings.
- (b) Plant and Equipment.
- (c) Inventory.

Land presented a problem because there are no national statistics of land prices published. It may be assumed that land prices have risen as much, if not more, than the general level of prices. Thus a conservative estimate of the current value of land was arrived at by applying the Gross Domestic Product deflator.

Indices were also constructed for "buildings, plant and equipment" for application to those companies who grouped their assets in this manner.

Where "land and buildings" were grouped, the index for buildings was used because it would seem reasonable to assume that the majority of the total amount of "land and buildings" would consist of "buildings".

#### *Balance Sheet Adjustments*

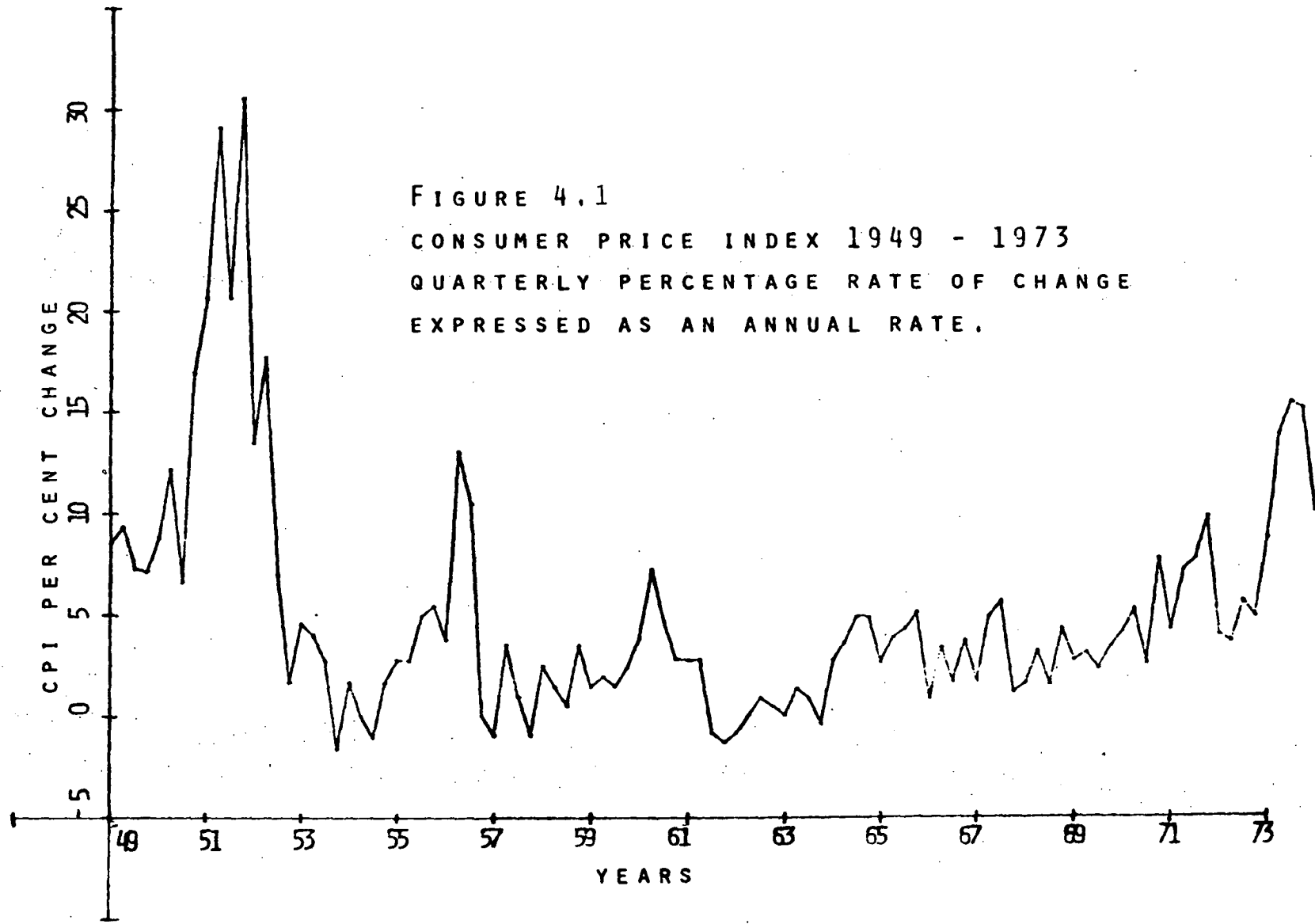
Balance sheet figures were adjusted in the following way. It was assumed that assets employed by companies as at 30/6/63 were valued in 1962-1963 prices. This assumption was necessary in order that some base level of asset values be established. This base year was chosen because many companies revalued their fixed assets around the time of the 1960 boom period. Additionally, 1962-63 was the year that immediately preceded an upward trend in the percentage rate of change in prices, as shown in Figure 4.1.<sup>28</sup> Thus, the use of 1962-63 as the base year can to some extent be justified. The only exception to this 1962-63 base year assumption was the S.A. Brewing Company. In that case, 1963-64 was chosen as the base year because that Company's annual report data for 1962-63 did not disclose gross amounts for fixed assets, and therefore could not be subjected to the method developed.

Once this base year was established, additions to various asset classes were calculated from differences between gross book values, excluding asset revaluations, shown in successive year balance sheets. Increases to assets in each year were calculated for all fixed asset classes and the appropriate price indices were applied to yield the current values of the assets in 1972-73 prices. The following example of the revaluation of Australian Paper Manufacturers' plant and equipment illustrates the method:

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<sup>28</sup> A pragmatic reason for choosing 1962-63 as the base year was the difficulty of obtaining company annual reports before 1962.





	Original Cost \$m	1972-73 Current Value Index	1972-73 Current Value \$m
Plant and Equipment 30/6/63	80.867	1.3947	112.785
Increase 1963/64	2.216	1.3848	3.069
~~~~~	~~~~~	~~~~~	~~~~~
Increase 1971/72	19.511	1.0369	20.231
Increase 1972/73	<u>13.224</u>	1.0000	<u>13.224</u>
Plant and Equipment 30/6/73	<u>207.950</u>		<u>264.284</u>

Net figures for buildings (where depreciated), plant and equipment, and other depreciable assets were derived after allowing for accumulated depreciation based on current 1972-73 value. The calculation of the provision for depreciation based on current value in 1972-73 prices was made by the use of the formula:<sup>29</sup>

Provision for Depreciation =  
(1972/73 Current Value)

$$\begin{array}{rcl} \text{1972/73 Current Value} & & \text{Provision for Depreciation} \\ \text{of Assets} & \times & \frac{(\text{Original Asset Cost})}{\text{Original Asset Cost}} \end{array}$$

Using the figures above, this calculation is as follows:

1972/73 Provision for Depreciation =

$$264.284 \times 111.172/207.950 = 141.289 \text{ ($m)}.$$

Since the aim is to calculate a net amount for fixed assets in terms of 1972-73 prices from a 1962-63 base, this method for computing the accumulated depreciation in 1972-73 prices is equivalent to calculating the sum of the annual original cost depreciation inflated by the 1972-73 current value index for each year.

<sup>29</sup> Gress, E.J., *op. cit.*, p. 10.

The adjustment made to total funds employed in 1972-73 for each company was the difference between the 1972-73 net current value for all fixed assets (as calculated above) and the 1972-73 original cost as shown in the company's balance sheet, after adjusting for arbitrary revaluations made between 1962-63 and 1972-73.

#### *Income Statement Adjustments*

Two adjustments to conventional net income were made:

##### (1) Depreciation.

Theoretically, depreciation based on current value for the year 1972-73 should be the difference in the accumulated depreciation based on the current value as at June 1973 and June 1972, after retired assets have been taken into account.<sup>30</sup> However, the annual reports of the companies analysed show that the difference in the provision for depreciation account between 1972 and 1973 is not equal to the depreciation expense for the year. Therefore, difficulties occur in attempting to calculate depreciation based on current value if the historical cost depreciation cannot be obtained using the provision accounts. The approach taken here was to calculate current depreciation by means of the formula:<sup>31</sup>

$$\text{Current Depreciation} = \text{Accounting Depreciation} \times \frac{\text{Net current value of fixed assets at end of year}}{\text{Net original cost value of fixed assets at end of year}}$$

In the case of A.P.M., the depreciation calculation for all depreciable fixed assets is as follows:

$$\text{Current Depreciation} = 12.891 \times \frac{158.931}{121.816} = 16.819 \text{ } (\$m).$$

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<sup>30</sup> *ibid.*, p. 11.

<sup>31</sup> Mathews, R. and Grant, J. McB., *Inflation and Company Finance*, Law Book Company, Sydney, 2nd ed. 1962, p. 80. The formula used here differs from the above authors', in that end of year rather than beginning of year values were used.

The difference between current depreciation calculated by this formula and the depreciation charged by a company was the adjustment made to the income figures, (i.e.  $16.819 - 12.891 = 3.928$  (\$m) for A.P.M.).

(2) Inventory.

The inventory adjustment was calculated as the difference between cost of goods sold in original and current (1972-73) values.

Ideally, current cost of goods sold may be determined by revaluing opening stocks in terms of the prices at which closing stocks are valued. This means that the stocks absorbed into cost during the current period are valued at average prices for the period because closing stocks are excluded in the calculation of current cost of goods sold. This assumes a steady rate of increase of prices and a constant turnover period. However, in this analysis the price change was measured by means of index numbers and so the stock adjustment calculated, like the other adjustments, is a statistical approximation rather than an accurate measure.<sup>32</sup>

The depreciation and stock valuation adjustments were subtracted from accounting income to yield current income based on 1972-73 current value. The ratio of this current operating income to current funds employed based on 1972-73 current value was then determined for each company. The results of the analysis are summarized below in Tables 4.3 and 4.4. The detailed adjustments to each company's annual data from 1962-63 to 1972-73 is included as Appendix 6.

*Analysis of Results*

The results of the analysis contained in Tables 4.3 and 4.4 are

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<sup>32</sup> This analysis closely follows Mathews, R., and Grant, J. McB., *ibid.*, p. 48.

TABLE 4.3

## Operating Profit and Funds Employed Expressed at Conventional and Current (1972-73) Values

Company	APM	S.A. Brewing	Cascade	Bradmill	Gadsden	Bonds	Containers	A.P.P.M.
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Funds Employed (I.A.C. Definition)	230.353	25.639	19.746	64.368	43.407	67.246	64.069	93.339
plus adjustment to restate assets at current 1972-73 value:								
- land	33.449							2.835
- buildings	10.898							14.847 *
- land and buildings		9.817	3.744	7.107	3.463	3.128	5.383	
- plant and equipment	26.217	0.617	1.313	4.775	3.969	2.349	5.249	
- other fixed assets	4.284		0.033					2.624
Current Funds Employed	305.201	36.073	24.836	76.250	50.839	72.723	74.701	113.645
Operating Profit (I.A.C. Definition)	19.243	6.570	2.600	6.595	8.141	10.519	8.421	10.733
less depreciation adjustment	3.928	0.424	0.108	0.877	0.809	0.554	0.848	1.863
stock valuation adjustment	0.265	0.016	0.027	0.197	0.147	0.243	0.210	0.221
Current Operating Profit	15.050	6.130	2.465	5.521	7.185	9.722	7.363	8.649

\* including plant and equipment

TABLE 4.4

Rates of Return Expressed at Conventional and Current (1972-73) Values

Company	<u>Conventional Operating Profit</u> Conventional Funds Employed	<u>Current Operating Profit</u> Current Funds Employed
A.P.M.	8.35%	4.93%
S.A. Brewing	25.63%	16.99%
Cascade	13.16%	9.93%
Bradmill	10.25%	7.24%
Gadsden	18.76%	14.13%
Bonds	15.64%	13.37%
Containers	13.14%	9.86%
A.P.P.M.	11.50%	7.61%

to be interpreted with the following limitations in mind. Financial statement data presented many problems which were overcome in most cases by making decisions which would mean computation was possible, while theoretically an alternative may have been better. For example, in the case of A.P.M., land was revalued by independent valuers and directors in 1973; and this valuation was accepted for the purposes of restatement because it was greater than the value of land at historical cost inflated by the land (G.D.P.) index. As stated previously, the restated value for land in most other cases is probably underestimated. In general, where compromises had to be made, the calculation that would give a downward bias - that is, undervalue the asset - was chosen.

Despite the downward bias for a few assets and the limitations mentioned above, the results in Tables 4.3 and 4.4 indicate that the ratio *operating profit/funds employed* used by the P.J.T. is considerably higher than the rate of return based on assets valued at 1972-73 current value. With differences of the size shown in Table 4.4, the Tribunal's decision not to grant the full increase in

prices applied for in the case of all these companies except Containers, may well have been misplaced. An investigation of the effect that current values have on rates of return, may change to a considerable extent, the pricing decisions made by the Tribunal. From the evidence presented here, it seems that an approach similar to that taken by the Monopolies Commission after 1966 is necessary if the rate of return on capital is to remain as an indicator of a company's profitability for prices justification purposes.

#### DEVELOPMENT OF A CURRENT VALUE GUIDEPOST SERIES USING RESERVE BANK

##### DATA

##### *Assumptions and Methodology*

The aim was to develop a rate of return series<sup>33</sup> purged of asset revaluation distortions and adjusted to up-to-date values, that could be used as a profitability guidepost in prices justification inquiries. The data contained in the Reserve Bank of Australia Statistical Bulletin Company Supplement was chosen to provide the basis for the adjusted series. This choice was made because the Reserve Bank data was the most detailed of comparable aggregate balance sheet and profit and loss company statistics that is published in Australia at the present time. Adjustments to the rate of return ratios published by the I.A.C., for example, could not be undertaken without considerably more detail being disclosed.

##### *The Reserve Bank Statistics*<sup>34</sup>

In the Reserve Bank statistics, companies are divided into four

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<sup>33</sup> Hereafter described simply as "the adjusted series".

<sup>34</sup> The following explanations of the compilation of statistics in the Reserve Bank Company Supplement are summarized from Reserve Bank of Australia Statistical Bulletin Company Supplement, January 1975, *op. cit.*, pp. 1-2 and pp. 28-33.

industrial categories - manufacturing, wholesale trade, retail trade and services. Additionally, an "all industries" aggregate is also provided. The adjusted series was developed by using the data relating to the manufacturing sector only. This decision was made because in its public inquiries, the Tribunal has mainly dealt with firms falling into that category. When the P.J.T. commenced operation in August 1973, most of the larger wholesale organizations and retail stores were exempted from notifying each individual change in prices, provided the company concerned did not increase its gross profit margins.<sup>35</sup> Also, much of the retail business is carried out by companies with an annual turnover not exceeding \$20 million, and were therefore exempted from the Prices Justification Act.<sup>36</sup>

The firms covered by the Reserve Bank statistics are non-finance public companies other than those engaged in mining or primary industry or operating mainly overseas, and with only a few exceptions, all the companies in the survey are listed on Australian Stock Exchanges. Two sets of aggregate balance sheets and profit and loss statements are presented - one for a "constant group" and one for "all companies". For any one Statistical Bulletin Company Supplement issued, ("the current sample period"), which includes data for the past five years, only companies for which there are comparable data from consolidated accounts for that whole period are included in the constant group. However, the group of companies included in the "constant group" changes from one Statistical Bulletin Company Supplement to the next, so comparability is only

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<sup>35</sup> First Annual Report of the Prices Justification Tribunal, *op. cit.*, p. 29.

<sup>36</sup> *loc. cit.*



maintained for the 5 year period of that Bulletin. The estimates for the "all companies" group also include data on companies for which information is not available for the five years, or where the basis of the accounts have changed. Since the constant group yield statistics with a greater comparability over time, and also provide the basis for the "flow of funds" statements which contain data necessary for the adjusted series, it was decided to use those statistics rather than the "all companies" estimates.

The "flow of funds" estimates are based on changes in balance sheet data at the beginning and end of each yearly period. The figures are presented on a gross basis, and changes arising from bonus issues and asset revaluations are eliminated. However, *only* the flow of funds data exclude the distortion resulting from asset revaluations. The aggregate balance sheet and profit and loss statement data have not been adjusted for company asset revaluations. For example, the aggregate amount shown as "net fixed assets"<sup>37</sup> would include all asset revaluations undertaken by companies in the constant group. This distortion had to be overcome in developing the adjusted series.

Data for companies with different balance dates have been aggregated without adjustment. For example, the aggregate balance sheet for a particular year is the sum of companies' balance sheets at dates from 1 January to 31 December. Flows have been calculated on the same basis. Where a company changed its balance date, adjustments have been made to estimated flows for a period of 12 months.

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<sup>37</sup> Reserve Bank Statistical Bulletin Company Supplement, January 1975, Table 2.4 "Manufacturing Constant Group, Aggregate Balance Sheet".

The treatment of takeovers was a problem that had to be dealt with by the Reserve Bank in the compilation of the statistics. The problem is of no concern unless one of the companies is a non-finance public company operating mainly in Australia and not engaged in mining or primary industry. The problem is of concern where a company that fits into this category takes over:

- (1) another non-finance *public* company operating mainly in Australia and not engaged in mining or primary industry;
- (2) a non-finance *private* company operating mainly in Australia and not engaged in mining or primary industry;
- (3) a company engaged in finance, mining or primary industry, or operating overseas.

In the first case, the problem is minimized by ensuring that both companies are included in the analysis for the entire sample period (five years). The proportion of the net assets of a company taken over, equal to the proportion of its shares acquired by a taking-over company, will equal in value the consideration given to shareholders for shares acquired. Revaluations of taken-over assets and liabilities are prevented from affecting the estimate of flows by estimating the value at which the assets and liabilities are entered in the consolidated accounts after takeover. When full details are not available, it is assumed that the debts and financial assets are not revalued, and any revaluation applies only to "physical assets", which are assumed to have been entered in the consolidated accounts at the amount equal to shareholders' equity plus outside liabilities less financial assets. When a company is taken over by a company in a different industrial category, the data of the taken-over company are included under its original category up to and including the balance date immediately preceding take-over. Thereafter, they

are included in the category appropriate to the company resulting from the takeover.

In the second case, the accounts of the private company should, in principle, be included in the statistics for the whole period covered, and where the data was available, this procedure was followed. When the data was not available, the assets, liabilities and flows for the taken-over company are estimated.

In the third instance, the procedure has been to treat the taken-over finance companies, companies engaged in mining or primary industry or overseas companies, as if they changed status immediately before takeover. Thus the assets and liabilities acquired through take-over are not included in the estimated flows for non-finance companies.

The aggregate company data, calculated by the Reserve Bank using the methods presented above, formed the basis for the development of the "adjusted series".

#### *The Adjusted Series*

The aim was to develop an adjusted series of net profit before taxation/total assets as per Reserve Bank definitions. As in the "Restatement of Company's Data to Current Values",<sup>38</sup> both the numerator and denominator required adjustment - a depreciation adjustment and an inventory valuation adjustment to the numerator, and the calculation of yearly up-to-date asset values in the denominator.

The aggregate balance sheet for the Manufacturing Constant Group (Bulletin, Table 2.4) classifies assets into the following categories:

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<sup>38</sup> See pages 161-171.

net fixed assets  
 government securities  
 shares  
 other investments  
 cash at bank  
 debtors  
 stock, work-in-progress etc.  
 intercompany balances  
 intangibles  
 other.

It was assumed that all assets except net fixed assets were in terms of current prices. Net fixed assets are an aggregate of historical and revalued amounts in the Statistical Bulletin (Table 2.4), and a method had to be devised to eliminate the revaluation distortion and convert to current values. Data was not provided on the amount of the asset revaluations in each year. Therefore it was necessary to establish some base level of assets and assume that that amount was "free" of asset revaluations. The base year chosen was 1962, for similar reasons to those discussed in the previous section<sup>39</sup> - namely that many companies had revalued their assets around the 1960 boom period and that after 1962, an upward trend in the percentage rate of change of prices occurred. Chambers' research disclosed that the greatest number of individual revaluations occurred in 1951, 1959, 1960, 1969, 1970.<sup>40</sup> This 1960-1969 "gap" provides further support for a 1962 starting point.

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<sup>39</sup> See page 164.

<sup>40</sup> Chambers, R.J., *Securities and Obscurities*, op. cit., pp. 53-54.

Once the base year amount of fixed assets had been established, there were four adjustments necessary to arrive at the 1962-63 figure for net fixed assets in 1962-63 current values. These adjustments are summarized below so that the method can be illustrated, and are then discussed in detail:

- (1) the fixed assets in 1962 were converted to 1962-63 current values by using the Private Gross Fixed Capital Expenditure (excluding dwellings) implicit deflator, which is shown in Appendix 5 (Table D);
- (2) net additions during 1962-63 were included;
- (3) current depreciation for 1962-63 was deducted; and
- (4) net fixed assets arising from the takeovers of private companies in 1962-63 were included.

The result was a figure for the net fixed assets as at 1963 in 1962-63 current values. This amount was then carried forward as the beginning value for 1963-64 and the adjustments above repeated for the 1963-64 financial year. Net fixed assets in terms of the current prices of each annual period were calculated using this method from 1962-63 to 1972-73. The calculations and results are shown in Appendix 7.1. An example of the first two years is as follows:

	1962-63 \$m	1963-64 \$m	1964-65 \$m
Net fixed assets at beginning	2630.00	3062.86	3232.99
Index (1)	<u>1.103365</u>	<u>1.010702</u>	
Net fixed assets at beginning (at "current prices")	2901.85	3095.64	
Add net purchases (2)	<u>387.4</u>	<u>371.8</u>	
	3289.25	3467.44	
Less current depreciation (3)	<u>235.57</u>	<u>258.71</u>	
	3053.68	3208.73	
Add takeovers (4)	<u>9.18</u>	<u>24.26</u>	
	<u>3062.86</u>	<u>3232.99</u>	

The group of companies in the manufacturing constant group changes from one Statistical Bulletin to the next, and since the series was to be developed from 1962-63 to 1972-73 (11 years), three Bulletins, with three different company samples, were involved. The level of net fixed assets, while comparable within any one Statistical Bulletin, were not comparable between Bulletins. It was therefore necessary to develop a method of "linking" one Bulletin to the next to achieve a comparable series over the eleven years. Three Statistical Bulletins that covered the entire period 1962-63 and 1972-73 and included a common year were chosen - net fixed assets in the common year to be the link from one Bulletin (company sample) to the next. It was decided to link the net fixed assets on the basis of the proportion of historical values to current values in one Bulletin to historical values to current values in the next Bulletin. This can be illustrated as follows:

*Link 1: Common Year 1966-67*

	Historical Value \$m	Current Value \$m
Statistical Bulletin 1 (August 1968)	3822.15	4252.65
Statistical Bulletin 2 (December 1972)	4286.08	(a)

where  $a = \frac{4286.08 \times 4252.65}{3822.15} = 4768.83$  and became the beginning 1967-68 current value for net fixed assets for the December 1972 Bulletin. Using 1970-71 as the common year, the December 1972 and the January 1975 Statistical Bulletins were linked in a similar manner.

However, to link the three company samples in this way, it was necessary to calculate the "historical values" (free of asset revaluations) of the net fixed assets over the period 1962-63 to 1972-73; and since this historical value series was also spread over the three Bulletins, a link between the Bulletins was also needed for

that series. This link was carried out on the following basis:

*Link 1: Common Year 1966-67*

	"Historical Values" not free of revaluations \$m	"Historical Values" free of revaluations \$m
Statistical Bulletin 1 (August 1968)	3853.2	3822.15
Statistical Bulletin 2 (December 1972)	4320.9	(b)

where  $b = \frac{4320.9 \times 3822.15}{3853.2} = 4286.08$  and became the beginning

1967-68 historical value (free of asset revaluations) for the December 1972 Bulletin. The December 1972 and January 1975 Statistical Bulletins were linked in the same way. The detailed calculations and the results of the historical cost series (free of asset revaluations) are shown in Appendix 7.2.

Once the continuity between the different Statistical Bulletins had been established for the period 1962-63 to 1972-73, the four adjustments outlined above (page 177) to the opening net fixed assets gave the current value. These adjustments were as follows:

*Adjustment 1: Conversion to Opening Current Value*

It was assumed that the average life of the fixed assets existing in 1962 was six years.<sup>41</sup> The opening value of fixed assets in 1962 was converted to 1962-63 current value by applying the six year change (1963/1957) in the Private Gross Fixed Capital Expenditure (excluding dwellings) index. Thereafter the adjustment was made by applying the annual change in the index because the beginning fixed asset value was in terms of prices at the end of the previous year.

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<sup>41</sup> Six years is a fairly common period used for such an assumption. See, for example, *Australian Economic Review*, Chapter 1, "Company Profitability and Financial Needs", Institute of Applied Economic and Social Research, University of Melbourne, 3rd Quarter 1974, Table 1-B Source and Notes.

### *Adjustment 2: Net Additions*

Net additions were obtained by taking the difference between the use of funds and the source of funds for fixed assets in the Manufacturing Constant Group Flow of Funds table (Table 2.6). Since the flow of funds tables are free of asset revaluation distortions, this difference should equal the net additions in fixed assets for any one year.

### *Adjustment 3: Current Depreciation*

Current depreciation was calculated by using the following formula:<sup>42</sup>

$$\text{Current Depreciation} = \text{Accounting Depreciation} \times \frac{\text{Net Current Value of Fixed Assets at Beginning of Year}}{\text{Net Original Cost Value of Fixed Assets at Beginning of Year}}$$

Accounting Depreciation for each year was extracted from the Manufacturing Constant Group Aggregate Profit and Loss figures. The net original cost value of fixed assets at the beginning of each year was obtained from the previously developed historical value series (Appendix 7.2). An example of the depreciation calculation for 1962-63 is as follows:

$$\text{Current Depreciation} = (\$m)213.5 \times \frac{2901.85}{2630.0} = (\$m)235.57$$

The current depreciation calculations for each year are included in Appendix 7.1.

### *Adjustment 4: Takeovers of Private Companies*

The estimated annual value of total assets of private non-finance companies, operating mainly in Australia and not engaged in mining or primary industry, taken over by the public companies included in the Reserve Bank sample is disclosed in the Statistical Bulletins' Table 4.5.

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<sup>42</sup> Mathews, R., and Grant, J. McB., *op. cit.*, p. 80.



In order to arrive at a yearly figure for net fixed assets in current values, it was felt that this major group of assets taken over should be included. The appropriate amount would be the proportion of net fixed assets/total assets taken over. An estimate of this proportion could be obtained by using the proportion of net fixed assets/total assets in the aggregate balance sheets (Bulletin, Table 2.4), which varied from year to year from approximately 45% to 50%. It was decided to use a constant percentage of 45% in each year. This lowest percentage of net fixed assets/total assets was chosen because the percentage was likely to be overstated due to asset revaluations remaining in the estimates for fixed assets as compared to other assets. The use of the lowest percentage would help to compensate for this overstatement. This percentage was applied to the manufacturing sector yearly figure for assets taken-over (Bulletin, Table 4.5) and the result added to net fixed assets for that year. Unfortunately the period covered by the August 1968 Bulletin did not categorize the assets taken over into the four sectors - manufacturing, wholesale trade, retail trade and services. For the period covered by that Bulletin, it was assumed that the total amount related to the manufacturing sector. Since the amount involved in takeovers during that period was relatively small, any effects such an assumption may have on the final result would be negligible. An example of the adjustment for 1962-63 is 45% of \$20.4 m = \$9.18 m.

The annual opening value of net fixed assets was subjected to these four adjustments and the current value net fixed asset series from 1962-63 to 1972-73 developed (Appendix 7.1). The denominator for the proposed *net profit before tax/total assets* adjusted series was completed by adding the net fixed assets at current values, and all of the other assets (assumed to be in current values), listed in

the aggregate balance sheet. The results are shown in Appendix 7.4.

Two adjustments were made to the numerator - a depreciation adjustment and an inventory valuation adjustment. The difference between current depreciation (as calculated for net fixed assets) and depreciation shown in the Statistical Bulletins was deducted from net profit. The inventory adjustment was calculated by taking the difference between the opening inventory at current values and the opening inventory at the value shown by the Reserve Bank. This opening inventory is revalued in terms of closing prices. The inventory index shown in Appendix 5 (Table E) was used for the revaluation. Both of these adjustments are similar to those described in the previous section (pages 167-168), and are shown in detail in Appendix 7.3. The following illustrates the method for the first two years of the adjusted series:<sup>43</sup>

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<sup>43</sup> In developing the series for adjusted net fixed assets, it was necessary to link three Bulletins to obtain coverage of the period 1962-63 and 1972-73. Linkage was necessary because the net fixed assets figure for the end of one year became the figure for the beginning of the next year - and the level appertaining to the Statistical Bulletin (company sample) for the years under analysis had to be maintained. Once that level was maintained, it was then possible to use the net profit before taxation as the numerator (and the "other assets" in the denominator) without further adjustment, so long as the same Statistical Bulletin that corresponded to the years covered, was used. Thus, 1962-63 to 1966-67 data is from the August 1968 Bulletin, 1967-68 to 1970-71 data is from the December 1972 Bulletin and 1971-72 to 1972-73 data is from the January 1975 Bulletin.

	1962-63 \$million		1963-64 \$million	
Net profit before taxation	439.8		506.4	
Less depreciation adjustment:				
current depreciation	235.57		258.71	
conventional depreciation	<u>213.50</u>	<u>22.07</u>	<u>235.10</u>	<u>23.61</u>
	417.73		482.79	
Less inventory adjustment:				
opening inventory	1218.10		1284.3	
inventory index:	1.0042		1.0013	
opening inventory at current value	1223.21	<u>5.12</u>	1285.96	<u>1.67</u>
Adjusted net profit before taxation	<u>412.61</u>		<u>481.12</u>	

The numerator and denominator of the *net profit before taxation/total assets* ratio were calculated using the method described above. The detailed calculations are shown in Appendix 7.4. The following adjusted series, to use as a rate of return guidepost, was the result.

TABLE 4.5

<u>Current Rate of Return Guidepost Series</u>	
	%
1962-63	7.10
1963-64	7.69
1964-65	7.68
1965-66	6.91
1966-67	7.13
1967-68	7.27
1968-69	7.25
1969-70	7.31
1970-71	6.80
1971-72	6.30
1972-73	7.16

The next step was to restate the profit and loss statement and balance sheet data for eight companies that had appeared before the P.J.T. on the same basis as the adjusted series (above), ensuring that the Reserve Bank definitions of the numerator and denominator

had been adhered to throughout.

#### *Restatement of Company Data*

The same eight companies that were used in the previous section were chosen for this examination. The identical methodology used in developing the adjusted series was applied to each company. The revaluation index (private gross domestic capital expenditure - excluding dwellings) was used to convert the companies net fixed assets to current values. Annual net purchases were calculated by taking the difference between the gross fixed assets in each year, excluding any revaluations. Current depreciation was calculated using the same formula.

The restatement was commenced in 1962-63 for all companies except the S.A. Brewing Company Ltd. Insufficient detail in the 1963 and 1964 annual reports of that Company prevented a start being made before 1964-65. In that case, the six year average life of assets assumption was maintained, and the 1964 value of fixed assets was brought up to 1964-65 values by applying the 1965/1959 index. The current values of the net fixed assets were added to the other assets of each company to give the denominator. The numerator was calculated by adjusting the net profit before taxation, for current depreciation and current opening inventory.

In certain cases, it was necessary to make adjustments to company data to ensure that conformity with the Reserve Bank definitions was maintained. The Reserve Bank define net profit as trading profit and income from investments, net of losses. Profits of a capital nature are excluded, and where a company charges as an expense an item that is generally appropriated, the figures are adjusted to treat the item as an appropriation. Assets are also

carefully defined.<sup>44</sup> The only major adjustment to the total assets figure disclosed by most companies was to ensure that "goodwill on consolidation", when deducted from shareholders' equity, was included in the total assets amount.<sup>45</sup>

The results of the adjusted rate of return (net profit before taxation/total assets as per Reserve Bank definition) for each company, and the Reserve Bank adjusted series guidepost are shown below in Table 4.6. (The detailed calculations for the eight companies are given in Appendices 8.1 to 8.3.)

### *Analysis of Results*

The major limitations inherent in the adjusted series for use as a profitability guidepost stem from some of the rather heroic assumptions made in the series' development. Despite the assumptions that were necessary, it is contended here that the adjusted series will provide a better profitability guidepost than using a series that contains an undefined conglomeration of historical costs and revaluations, as was the case with both the original Reserve Bank and the I.A.C. series used by the P.J.T. The rate of return results in Table 4.6 illustrate a trend over time for the guidepost series and the eight companies.

A comparison between the *current operating profit/current funds employed* ratio (developed on pages 161-171) and the adjusted series (*current net profit before tax/current total assets*) for the eight companies for 1972-73 revealed that the latter ratio is less than the former in each case. This result was expected since the latter ratio

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<sup>44</sup> Reserve Bank Statistical Bulletin Company Supplement, *op. cit.*, pp. 32-33.

<sup>45</sup> The treatment of this item by the Reserve Bank was confirmed by personal communication with Mr. S. Kinkade, Reserve Bank of Australia, Sydney.

TABLE 4.6

	Adjusted Net Profit before Taxation / Total Assets as per Reserve Bank Definition										
	1962-63 %	1963-64 %	1964-65 %	1965-66 %	1966-67 %	1967-68 %	1968-69 %	1969-70 %	1970-71 %	1971-72 %	1972-73 %
Adjusted Guidepost Series	7.10	7.69	7.68	6.91	7.13	7.27	7.25	7.31	6.80	6.30	7.16
A.P.M.	7.18	7.17	6.98	6.24	5.12	4.25	5.08	6.12	4.95	4.49	4.59
S.A. Brewing	-	-	10.09	11.64	10.54	12.57	11.99	12.26	12.22	9.92	10.50
Cascade	7.70	8.39	8.18	9.49	8.85	8.38	8.11	8.61	9.50	9.44	9.71
Bradmill	2.81	4.59	5.74	5.41	6.16	7.89	8.13	5.20	3.95	2.55	4.87
Gadsden	5.67	9.02	11.40	12.26	11.49	10.03	8.33	12.58	14.03	10.85	12.75
Bonds	12.41	12.14	9.06	11.81	12.77	11.39	11.48	10.80	12.02	11.25	12.14
Containers	6.69	7.18	6.99	8.49	8.25	8.47	7.90	8.01	9.19	7.61	7.62
A.P.P.M.	8.18	6.90	5.70	8.46	5.71	10.74	9.75	7.59	6.30	2.64	5.23

is defined as the return on *total assets* while the former uses the I.A.C.'s funds employed as the denominator, which omits all intangible assets, investments, cash and short-term deposits. There are dangers in undertaking such a comparison due to the fact that different definitions of the numerator and denominator are used; and the differences between the two ratios will vary from one company to another - the difference being dependent on the composition of the companies' profit, assets and liabilities. For example, in the case of the S.A. Brewing Company, there is a considerable difference between *current operating profit/current funds employed* (16.99%) and the adjusted Reserve Bank ratio (10.50%). This is explained by the fact that in 1972-73, the S.A. Brewing Company, as compared to the other companies, has a large amount of intangible assets (\$11,880,830) and cash on hand and deposits (\$6,696,220). If these two accounts are excluded from the adjusted Reserve Bank ratio, as they are in the return on current funds employed, the ratio becomes 15.24%, rather than 10.5%.

It would appear pointless to compare the results of this analysis with the analysis of the P.J.T. in each of the eight companies examined. In the first place the rate of return on capital that was examined by the Tribunal was not disclosed in some cases,<sup>46</sup> and in others, comparisons were not made with either the Reserve Bank or the I.A.C. series.<sup>47</sup> Additionally, the rate of return definition used in most cases would not be consistent with the Reserve Bank's net profit before taxation on total assets ratio adopted for the adjusted series. The adjusted series must stand on its own because of its

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<sup>46</sup> e.g. Bradmill.

<sup>47</sup> e.g. S.A. Brewing.

different nature - being a current value series with distortions caused by asset revaluations eliminated - and its different definitions in the rate of return. However, it is worthwhile examining some examples to illustrate the fact that if the data developed here had been available, the decisions made by the Tribunal may well have been different. For example, in the report on A.P.P.M., the Tribunal disclosed a comparison of the net profit before tax and interest on average total assets between A.P.P.M. and the P.A. Management series. This was shown as follows:

	1971 %	1972 %	1973 %
P.A. Report			
- Total Manufacturing	9.0	8.1	9.6
- Non Durables	9.1	9.1	10.1
A.P.P.M. Group	9.4	6.6	9.4

This may be compared with the adjusted series developed in this Chapter:

	1971	1972	1973
Adjusted Reserve Bank Series	6.80	6.30	7.16
A.P.P.M.	6.30	2.64	5.23

In the comparison used by the Tribunal, A.P.P.M.'s rate of return on total assets for 1971 and 1973 is average, but in the adjusted series comparison, the A.P.P.M. return is well below average.

The percentage of the proposed price increase approved by the Tribunal for the eight companies was as follows:<sup>48</sup>

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<sup>48</sup> Norman, N.R., *op. cit.*, p. 8.



A.P.M.	89%
S.A. Brewing	75%
Cascade	85%
Bradmill	63%
Gadsden	94%
Bonds	68%
Containers	100%
A.P.P.M.	85%

Given that there may be many other reasons than just the companies profitability for not granting the proposed price increase, and that the companies operate in different risk categories, it is interesting to compare the adjusted series results with the above percentages of the proposed price increases granted for each company. For example, in all years covered except 1967-68 and 1968-69, Bradmill are well below the guidepost average, and yet received only 63% of their proposed price rise, while Gadsden, who are considerably higher than the guidepost in all years except 1962-63, received 94% of their proposed price increase. Likewise A.P.M., whose profitability shows a declining trend over the period and is well below the guidepost, and A.P.P.M. who are also under the average in recent years, received 89% and 85% of their proposed price rises respectively, while Containers, who are over the average for most years and show a steady rate of return, received 100%. While it may be conceded that there may be many reasons for these variances and such an analysis is of doubtful value, it is interesting to note that on a purely rate of return comparison basis, these discrepancies do exist. The question remains: would the Tribunal's decision have been different if the adjusted series data had been used for assessing the companies profitability?

## SUMMARY AND CONCLUSIONS

This Chapter aimed at investigating the effects of the asset valuation problems on the rate of return in prices justification inquiries, and methods of overcoming these problems. Historical cost systems and a conglomeration of historical cost and revalued asset amounts were found to distort the rate of return to such an extent that the ratio became meaningless for comparative purposes. On this topic Professor Chambers has commented that:

"rates of return are calculated as if the numerators and denominators were in similar terms. In fact the numerators and denominators are in such mixed dollars and mixed prices that they can have no firm or significant meaning - no more meaning than a "sum" of horses and apples divided by a "sum" of cabbages and carrots and little red radishes."<sup>49</sup>

The P.J.T. has used the I.A.C. and Reserve Bank average rate of return series against which to compare a company's rate of return. These series are distorted by the irregular pattern of asset revaluation carried out by companies in Australia, and despite such limitations being recognised by the Tribunal, they have continued as the guidepost series in P.J.T. inquiries.

Two different methods, using published company data, were presented to assist in overcoming the problems caused by asset revaluation in using a rate of return for profitability assessment. Firstly, a method was devised to restate company data to current values using the I.A.C. *operating profit/funds employed* definition. Secondly, a current value guidepost series was developed from Reserve Bank data, and several companies' rate of return ratios were compared with that guidepost. In both cases it was concluded that the use of current values may change, to a considerable extent, the pricing decisions made by the Tribunal. Indeed, if the accounting rate of

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<sup>49</sup> Chambers, R.J., *Securities and Obscurities*, op. cit., p. 197.

return is to be persevered with as a measure of a company's profitability, adjustments to overcome the problems presented in this Chapter are essential.

## CHAPTER 5

### ALTERNATIVE MEASURES OF PROFITABILITY

The P.J.T. uses the "earnings test" as the major method of assessing a company's profitability. This method, which has also been termed "comparative profit justice"<sup>1</sup>, involves comparisons of a company's historical accounting rate of return with an industry average or an average for the whole economy. However, Parmenter and Webb have argued that the criterion of comparative profit justice is "... quite irrelevant to an appraisal of a firm's or industry's contribution to the efficiency of resource allocation". They argue that: "The fact that a particular firm's measured profitability (on one or other of the various measures which might be used) is lower than that of another firm, or another industry, or the same firm at an earlier date, establishes nothing about the appropriateness of the current price."<sup>2</sup> The Parmenter and Webb thesis adopts a "micro-economic approach to prices justification, and espouses a price based on marginal cost using discounted cash flow(d.c.f.) appraisal techniques. This micro-economic approach to prices justification is aimed at setting prices which will result in a "good" allocation of resources in the economy. This requires that product prices reflect their supply costs and that prices of factors of production reflect their opportunity costs. Using prior research undertaken by Salter<sup>3</sup> and Turvey<sup>4</sup> as a basis, Parmenter and Webb develop a model of a competitive process

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<sup>1</sup> Parmenter, B.R., and Webb, L.R., "Prices Justification and Micro-economics", *Australian Economic Review*, 2nd Quarter 1974, Institute of Applied Economic and Social Research, University of Melbourne, p.56.

<sup>2</sup> *ibid.*, p.59.

<sup>3</sup> Salter, W.E.G., *Productivity and Technical Change*, 2nd Ed. Cambridge University Press, 1971.

<sup>4</sup> Turvey, R., *Economic Analysis and Public Enterprises*, George Allen and Unwin, London, 1971.

that could be used to establish guidelines for prices justification purposes. The model shows how the price charged for a product is related to the sum of the unit operating costs and the unit amortization charges for new capacity, which is the appropriate measure of marginal cost. It is explained that the first year amortization charge for new capacity is determined "... as that charge the recovery of which just makes the investment worthwhile".<sup>5</sup> The information requirements for this amortization calculation are similar to those required for the d.c.f. investment criterion. Parmenter and Webb believe that the model is suitable for establishing guidelines for prices justification purposes as it includes consideration of the following phenomena:

- "(i) A dispersion of observed efficiency levels, in principle both within firms and within an industry. This contrasts with the standard text book case of one plant and one level of efficiency per firm (as in the long run average cost "envelope" analysis);
- (ii) Technological change of the "embodied" type;
- (iii) New Investment and scrapping."<sup>6</sup>

Turvey also examined the relevancy of an accounting rate of return as compared to a d.c.f. rate in evaluating prices, when the concern of an investigatory agency (such as the N.B.P.L.) is with the efficiency of resource allocation. He concluded that

"... the conflict between the two rate of return concepts must be resolved by deciding what one is trying to do. Assuming, as we are doing for the sake of argument, that investigatory agencies do exist and do have to pronounce upon prices, the conclusions are that:

- (1) profit-asset ratios can be used to argue whether prices are fair or unfair, but throw no light on resource allocation;
- (2) d.c.f. rates can be used to examine the resource allocation effects of prices;

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<sup>5</sup> Parmenter, B.R. and Webb, L.R., *op.cit.*, p.58.

<sup>6</sup> *loc.cit.*

(3) both operations are difficult, but so is life."<sup>7</sup>

Several price regulatory authorities have employed d.c.f. rates of return. The N.B.P.I. compared the discounted return on new investment with the cost of capital to establish a price that would justify new investment.<sup>8</sup> The Board considered that, in assessing the return on *future* investment, the d.c.f. method was the only one which gave a proper weighting to the timing of capital expenditure and revenue, and investment grants and allowances.<sup>9</sup> The relationship between the historical accounting rate of return and the forward-looking d.c.f. return was expressed as follows:

"There is no reason why a price consistently related to the discounted return on new investment in relation to the cost of capital should be inadequate to cover past accounting costs together with a reasonable measure of profit, provided sufficient allowance is made for technical obsolescence. The more that is set aside to meet the necessary obsolescence cost, the more closely will prices based on new investment, despite advancing technology, approximate to those based on the average return on old investment."<sup>10</sup>

The P.J.T. has spasmodically referred to d.c.f. rates of return under the title of "The New Investment Test". In the first public inquiry, B.H.P. attached considerable importance to the new investment test, but the P.J.T. gave three reasons as to why the test was insufficient, by itself, to justify a proposed price increase. Firstly, the Tribunal argued, it is impossible to verify all of the assumptions underlying a company's estimates of cash flows. Secondly, the test may indicate that a price increase might be necessary to make profitable a new increment of production, but the increase would apply to the

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<sup>7</sup> Turvey, R., "Rates of Return, Pricing and the Public Interest", *Economic Journal*, Vol. 81, No. 323, September 1971, pp.500-501.

<sup>8</sup> N.B.P.I., Report No. 133, *Portland Cement Prices*, *op.cit.*, p.11.

<sup>9</sup> *ibid.*, p.12.

<sup>10</sup> *loc.cit.*

previous output, which may have already been profitable, as well as to the new output. Thirdly, the Tribunal has no power to ensure that new investment for which the price increase was granted under such a test, would in fact be undertaken.<sup>11</sup> The new investment test was considered at length in the fourth B.H.P. inquiry.<sup>12</sup> However, the Tribunal took issue with the Companies' estimates of the future demand growth in Australia, the cost of capital, and risk assessment, and concluded that the Tribunal was not in a position to assess the level at which prices should ultimately be fixed on the basis of the proposed new investment.<sup>13</sup> Instead, the P.J.T. turned to the historical accounting rate of return. The Tribunal's report stated that:

"... we consider that a superior guide to that proposed by the Companies as to the price increase necessary now to improve their profits on existing investment may be found from an examination of their past real profits at a time when they were less inhibited in charging the prices they wished and when their profitability did not deter them from undertaking major new investments."<sup>14</sup>

The Parliamentary Joint Committee on Prices has also used the new investment test in assessing the level of profits and prices when attempting to "... appraise a firm's contribution to the efficiency of resource allocation".<sup>15</sup>

This use of a d.c.f. rate of return as an alternative measure of profitability in assessing the prices charged by companies warrants

<sup>11</sup> Prices Justification Tribunal Report on B.H.P., 10/10/73, *op.cit.*, pp.34-36.

<sup>12</sup> Prices Justification Tribunal Report on B.H.P., 28/7/75, *op.cit.*, pp.39-106.

<sup>13</sup> *ibid.*, p.96.

<sup>14</sup> *ibid.*, p.132.

<sup>15</sup> Report from the Joint Committee on Prices, "Prices of Household Soaps and Detergents", The Parliament of the Commonwealth of Australia, Canberra 1974, Appendix XI, p.62.

further examination. The new investment test is designed to compare the d.c.f. rate of return on *new investment* with the company's cost of capital, and therefore assist in determining the prices that would be necessary to make the new investment just worthwhile. The rate of discount which equates the present value of the stream of net receipts with the initial investment outlay is the internal rate of return (IRR).

One of the major problems cited by most price regulatory authorities in using the IRR is that the authority has to accept the d.c.f. calculations supplied by the companies concerned; and that it is impossible to verify the assumptions that lie behind the company's estimates. This would appear to occur mainly when the price regulatory authority is examining the prices charged by a company for the first time. In a continuing prices justification process over several years, the prices authority should become more aware of the validity or otherwise of a company's estimates. However, if the IRR is a desired measure - and from the evidence presented above this would seem to be the case - it would be useful to have a formula that could convert the usually available accounting rate of return (ARR) to the usually not available IRR.<sup>16</sup>

It is the aim in this chapter to briefly examine the conceptual relationship between the ARR and the IRR, and to investigate the major conditions under which the ARR may be a good approximation of the IRR. However, this is not the place to undertake a major

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<sup>16</sup> As pointed out by Solomon, E., "Return on Investment: the Relation of Book-Yield to True Yield", *Research in Accounting Measurement*, American Accounting Association Collected Papers (Jaedicke, R.K., Ijiri, Y. and Nielsen, O., Editors) 1966, p.234; and Livingstone, J.L. and Salamon, G.L., "Relationship between the Accounting and Internal Rate of Return Measures: A Synthesis and Analysis", *Journal of Accounting Research*, Vol. 8, No. 2, Autumn 1970, p.214.



investigation of the ARR-IRR relationship. Several studies have researched the differences between the ARR and the IRR, and the analysis presented below will draw on the results presented in those prior studies.

### The ARR and the IRR

Solomon states that there are two reasons for the wide-spread use of the ARR. Firstly, the ARR is a measure that ties in directly with the accounting process; and secondly, that "... it is the only approach available for measuring the ongoing return on investment for a collection of assets which together comprise a division or a company".<sup>17</sup> It is true that the IRR is normally associated with an individual project while the ARR is normally associated with a firm. However, comparisons of the ARR with the IRR can be undertaken for individual projects<sup>18</sup> or for the total assets comprising a company.<sup>19</sup> The ARR is normally an historical profitability measure, while the IRR calculations are usually futuristic and extend over the *expected* life of an investment. Since the IRR is "forward-looking" and the ARR "backward-looking", they are not necessarily measuring the same thing. On the other hand, there is no reason why the IRR could not also serve as a measure of past performance if this was desired by a price regulatory authority. The

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<sup>17</sup> Solomon, E., *op.cit.*, pp.232-233.

<sup>18</sup> For example, such a comparison was undertaken by Solomon, E., *op.cit.*; Vatter, W.J., "Income Models, Book Yield and Rate of Return", *Accounting Review*, Vol. XLI, No. 4, October 1966; and Harcourt, G.C., "The Accountant in a Golden Age", *Readings in the Concept and Measurement of Income*, (R.H. Parker and G.C. Harcourt, Editors), Cambridge University Press, 1969, Ch. 21, reprinted from *Oxford Economics Papers*, XVII (1965), pp.66-80.

<sup>19</sup> For example, such a comparison was undertaken by Livingstone, J.L. and Salamon, G.L., *op.cit.*

following examination of the ARR-IRR relationship will proceed from an analysis of the IRR and economic income to a consideration of the differences between the ARR and the IRR.<sup>20</sup>

The IRR is defined in the following way:

$$\sum_{i=1}^n R_i(1+r)^{-i} = 0$$

where  $R_i$  = net cash flow for period  $i$

$n$  = life of asset

$r$  = internal rate of return.

Following Hicks, a man's income may be defined as "... the maximum value which he can consume during a week, and still expect to be as well off at the end of the week as he was at the beginning".<sup>21</sup>

This may be expressed as:

$$Y_t = R_t + (V_t - V_{t-1}) \quad \dots \quad (1)$$

where  $Y_t$  = income in period  $t$

$R_t$  = net cash flow in period  $t$

$$V_t = \sum_{i=1}^{n-t} R_{t+i} (1+r)^{-i} = 0 \quad t = 0, \dots, n$$

For example, income in period two of a six year investment project would be as follows:-

$$Y_2 = R_2 + (V_2 - V_1)$$

$$\text{where } V_2 = \frac{R_3}{(1+r)} + \frac{R_4}{(1+r)^2} + \frac{R_5}{(1+r)^3} + \frac{R_6}{(1+r)^4}$$

$$V_1 = \frac{R_2}{(1+r)} + \frac{R_3}{(1+r)^2} + \frac{R_4}{(1+r)^3} + \frac{R_5}{(1+r)^4} + \frac{R_6}{(1+r)^5}$$

$$\therefore Y_2 = R_2 + \frac{R_3-R_2}{(1+r)} + \frac{R_4-R_3}{(1+r)^2} + \frac{R_5-R_4}{(1+r)^3} + \frac{R_6-R_5}{(1+r)^4} - \frac{R_6}{(1+r)^5}$$

<sup>20</sup> This analysis uses, as a basis, the study undertaken by Gordon, L.A., in "Accounting Rate of Return vs Economic Rate of Return", *Journal of Business Finance and Accounting*, Vol. 1, No. 3, Autumn 1974.

<sup>21</sup> Hicks, J.R., *Value and Capital*, 2nd Ed., Oxford University Press, London, 1948, p.172.

From this it can be seen that:

$$V_{t-1} = \frac{R_t}{(1+r)} + \frac{V_t}{(1+r)}$$

For example, if  $t = 2$ :

$$V_1 = \frac{R_2}{(1+r)} + \frac{V_2}{(1+r)}$$

Therefore:  $V_t + R_t = V_{t-1}(1+r)$

$$V_t = V_{t-1}(1+r) - R_t \quad \dots \dots \dots (2)$$

Substitution of (2) into (1) gives

$$\begin{aligned} Y_t &= [V_{t-1}(1+r) - R_t + R_t] - V_{t-1} \\ &= V_{t-1} r \end{aligned}$$

$$\text{or } r = \frac{Y_t}{V_{t-1}}$$

Economic depreciation for period  $t$  is defined as:

$$D_t = V_{t-1} - V_t$$

and since  $Y_t = R_t + (V_t - V_{t-1})$

then  $D_t = R_t - Y_t$

and  $Y_t = R_t - D_t$ .

These results show that the IRR equals  $Y_t/V_{t-1}$ , which is:

$$\frac{\text{economic income for period } t}{\text{last period's depreciated economic asset value.}}$$

Since  $Y_t = R_t - D_t$ , the IRR can also be shown as:

$$\frac{\text{cash flow} - \text{economic depreciation}}{\text{last period's depreciated economic asset value.}}$$

Economic depreciation ( $D_t = R_t - Y_t$ ) is equal to the net cash flow less the economic income for the period. Thus economic depreciation is the "residue" of the net cash flow after economic income ( $Y_t = V_{t-1} r$ ) has been calculated.

These relationships can be illustrated by the use of a simple example.<sup>22</sup> A company invests in a project that requires an outlay of \$1000 in year 0 and provides a cash flow of \$229.61 a year for 6 years, beginning in year 1. The investment has a zero salvage value at the end of the sixth year.

(a) The IRR for this project is 10%, because 10% fits the equation:

$$\$1000 = \sum_{i=1}^6 229.61(1+r)^{-i}$$

as is shown in Table 5.1.

Table 5.1<sup>23</sup>

Year	Actual Investment of Year \$	Interest at 10 Percent (income) \$	Balance at End of Year \$	Cash Withdrawal at End of Year \$	Ending Value \$
1	1,000.00	100.00	1,000.00	229.61	870.39
2	870.39	87.04	957.43	229.61	727.82
3	727.82	72.78	800.61	229.61	571.00
4	571.00	57.10	628.10	229.61	398.50
5	398.50	39.85	438.35	229.61	208.74
6	208.74	20.87	229.61	229.61	-

(b) Income in period 2 (for example):  $Y_2 = R_2 + (V_2 - V_1)$

$$R_2 = 229.61$$

Since the cash flows are constant over the six years,

$$V_2 - V_1 = \frac{R_n}{(1+r)^{n-1}} = \frac{R_6}{(1+r)^5} = \frac{229.61}{1.61051} = \$142.57$$

$$Y_2 = \$229.61 - \$142.57 = \$87.04 \text{ (as shown in Table 5.1).}$$

<sup>22</sup> The following example has been adapted from Solomon, E., *op.cit.*, and Vatter, W.J., *op.cit.*

<sup>23</sup> Adapted from Solomon, E., *op.cit.*, p.235.

Alternatively, income may be expressed as  $Y_t = V_{t-1} r$ .

For example  $Y_2 = V_1 r$

where  $V_1 = \sum_{i=1}^5 229.61(1.1)^{-i} = \$870.39$

$$Y_2 = \$ (870.39) 0.1 = \$87.04$$

(c) Economic Depreciation:  $D_t = R_t = Y_t$

For example  $D_2 = \$229.61 - \$87.04 = \$142.57$

and since  $Y_t = R_t - D_t$

$$Y_2 = \$229.61 - \$142.57 = \$87.04.$$

This simple example may also be used to illustrate the main differences between the ARR and the IRR. The IRR and ARR models may be outlined as follows:

Table 5.2<sup>24</sup>

IRR Model

Year	Beginning of Year Investment (V) \$	Cash Flow (R) \$	Income (Y) \$	Depreciation (D) \$
1	1000.00	229.61	100.00	129.61
2	870.39	229.61	87.04	142.57
3	727.82	229.61	72.78	156.83
4	571.00	229.61	57.10	172.51
5	398.50	229.61	39.85	189.76
6	208.74	229.61	20.87	208.74
Total	3776.45		377.64	1000.02
Average	629.41		62.94	166.67

<sup>24</sup> Adapted from Vatter, W.J., *op.cit.*, p.688. Arithmetical errors in Vatter's version have been corrected.

Table 5.3<sup>25</sup>ARR Model

Year	Beginning of Year Investment (V) \$	Cash Flow (R) \$	Depreciation (D) \$	Income (Y) \$	ARR %
1	1000.00	229.61	166.66	62.95	6.30
2	833.00	229.61	166.66	62.95	7.55
3	666.67	229.61	166.66	62.95	9.44
4	500.00	229.61	166.66	62.95	12.59
5	333.33	229.61	166.66	62.95	18.89
6	166.67	229.61	166.66	62.95	37.77
Total	3499.67		999.96	377.70	
Average	583.28		166.66	62.95	

In the IRR model (Table 5.2 above), economic depreciation ( $D_t$ ) is the "residue" of the cash flow after income ( $Y_t$ ), which is equal to the interest on the yearly investment at the IRR ( $r$ ), has been calculated.<sup>26</sup> This is in direct contrast to the method of calculating depreciation in the ARR model. In the ARR model (Table 5.3 above), depreciation is determined independently (by using in this case, the "straight-line" convention), and the income is the "residue" of the cash flow after the depreciation has been calculated. The method of calculating depreciation in the IRR model ( $D_t = R_t - Y_t$ , where  $Y_t = V_{t-1} r$ ) ensures that the IRR is set up as a constant each year,

<sup>25</sup> This table was adapted from Solomon, E., *op.cit.*, p.236, and Vatter, W.J., *loc.cit.* Arithmetical errors in Vatter's version have been corrected.

<sup>26</sup> If such a method were used for computing accounting depreciation, the ARR would also be constant over time, and by definition, equal to the IRR. This is also pointed out by Kay, J.A., "Accountants, too, could be happy in a golden age", *Oxford Economic Papers*, forthcoming.

and is equivalent to what Vatter calls the "over-all rate of return for the project as a whole".<sup>27</sup> As Vatter says:

"The case under consideration involves a declining principal, since capital is to be recovered over the term; the decline in investment balance along with constant annual receipts would of necessity cause the rate of return to increase over the successive years, unless the receipts were adjusted to produce the same rate each year. This adjustment is accomplished by "annuity depreciation" [i.e.  $D_t = R_t - Y_t$ , where  $Y_t = V_{t-1} r$ ]. Annuity depreciation would not alter the total income over the term, but it would change the annual income figures."<sup>28</sup>

Vatter then attempts to show that his "over-all rate of return for the project as a whole" (average income/average investment) will remain at 10% even though a different depreciation pattern would yield different annual rates of return. He states that:

"There are any number of combinations of annual income and amortization figures that could be set up for any given year, and the rate of return could therefore fluctuate widely. With \$229.61 of annual receipts, a division of \$20 to income and 209.61 to amortization, or \$1 to amortization and \$228.61 to income would yield exactly the same over-all rate of return for the project as a whole. The only constraints are (1) that income plus amortization of principal in any one year must together equal the cash receipts for that year and (2) that amortization for the entire term must equal the initial investment to be recovered. Just as one can set up an amortization table to support a 10 per cent return on the investment balance, one might set up a similar amortization to yield a different rate of return in each year that would still have an over-all project rate of return of 10 per cent."<sup>29</sup>

Vatter demonstrates this conclusion with the following data:

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<sup>27</sup> Vatter's "over-all rate of return for the project as a whole" (Vatter, W.J., *op.cit.*, p.689) or "project rate per term" (p.686 and p.689) is defined as "average income divided by average investment" (p.689). This particular definition of an average rate of return is shown at the bottom of Table 5.2 (IRR model) as  $\$62.94/\$629.41 = 10\%$ .

<sup>28</sup> *ibid.*, p.689.

<sup>29</sup> *loc.cit.*

Table 5.4<sup>30</sup>Varying Annual Rates of Return Averaging"10 Per Cent Per Annum" for the Term

Years	Investment Beginning of Year (V) \$	Cash Flow (R) \$	Depreciation (D) \$	Income (Y) \$	Rate of Return %
1	1,000.00	229.61	89.61	140.00	14.0
2	910.39	229.61	220.51	9.10	1.0
3	689.88	229.61	126.82	102.79	14.9
4	563.06	229.61	145.16	84.45	15.0
5	417.90	229.61	221.25	8.36	2.0
6	196.65	229.61	196.67	32.94	16.8
Totals	3,777.88	1,377.66	1,000.02	377.64	
Average	629.65	229.61	166.67	62.94	10.0

Indeed, Table 5.4 shows that the annual rate of return (income/ beginning of year investment) may vary, and that the same "over-all rate of return for the project as a whole", as defined by Vatter, is maintained. ( $\$62.94/\$629.65 = 10\%$ ). However, Vatter's contentions that

"With \$229.61 of annual receipts, a division of \$20 to income and 209.61 to amortization, or \$1 to amortization and \$228.61 to income *would yield exactly the same* overall rate of return for the project as a whole.",

and

"The *only* constraints are (1) that income plus amortization of principal in any one year must together equal the cash receipts for that year and (2) that amortization for the entire term must equal the initial investment to be recovered."<sup>31</sup>

<sup>30</sup> Adapted from Vatter, W.J., *op.cit.*, p.690. This table, compared to the one presented by Vatter, has been rearranged so that comparison with previous tables (e.g. Table 5.3) is enhanced; and the arithmetical errors have been corrected.

<sup>31</sup> *ibid.*, p.689.



are too strong, and conflict with his contention that Table 5.4 illustrates "... that the rates in individual years *could* be widely different from that which was imputed to the cash flow; any number of varying rate patterns *might* average out to the average-internal-project-rate".<sup>32</sup> The following table demonstrates that even if both of Vatter's constraints are satisfied, and the annual rate of return varies widely, a 10% "overall rate of return for the project as a whole" certainly does not result. Vatter's average in this case is  $\$62.94/\$671.67 = 9.37\%$ .

Table 5.5

Year	Beginning of Year Investment (V) \$	Cash Flow (R) \$	Depreciation (D) \$	Income (Y) \$	Rate of Return %
1	1,000.00	229.61	20.00	209.61	20.96
2	980.00	229.61	200.00	29.61	3.02
3	780.00	229.61	150.00	79.61	10.21
4	630.00	229.61	210.00	19.61	3.11
5	420.00	229.61	200.00	29.61	7.05
6	220.00	229.61	220.00	9.61	4.37
Total	4,030.00	1,377.66	1,000.00	377.66	
Average	671.67	229.61	166.67	62.94	

Vatter's "over-all rate of return for the project" may also be calculated from the ARR model (Table 5.3) that uses straight-line depreciation. In this case the "over-all rate of return for the project" is  $\$62.95/\$583.28 = 10.79\%$ . The reason for the difference between these "overall rates of return for the project" is found in

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<sup>32</sup> *ibid.*, p.690.

the depreciation calculation which affects the average investment. For example, the IRR model (Table 5.2) shows a higher average investment (\$629.41) than the ARR model (Table 5.3) which shows an average investment of \$583.28. Similarly the average investment in Table 5.5 (\$671.67) is greater than the average investment in both the IRR and ARR models. Since annual depreciation determines the next year's investment, the average investment (as defined by Vatter) will vary with different depreciation patterns. For example, the average investment in the IRR model (\$629.41) is higher than the average investment in the ARR model (\$583.28) because the beginning of year investment is higher in the earlier years (of the IRR model), due to the lower depreciation charge in those earlier years. As Vatter states:

"The reason for these differences is that the decline in principal affects all following years; what happens in the earlier years is thus weighted more heavily than the events of later years. The compound interest model has a higher average investment because less of the principal is recovered in the early years. This leaves more capital to be carried over the rest of the term; to postpone the decline in principal tends to increase the average investment."<sup>33</sup>

Thus, the data presented by Vatter (see Table 5.4 above) to demonstrate that the annual rates of return may vary and that the same "over-all rate of return for the project" is maintained, was contrived (by manipulating the depreciation schedule) to ensure that the average investment equalled the amount necessary (\$629.65) to result in the average over-all return of 10%.

Vatter also shows that the IRR is the *constant* rate of return which discounts the net cash flow to zero. The accounting rates of return in the ARR model (Table 5.3), which vary from year to year because of the depreciation scheme adopted, may also be used to discount the receipts to zero. This is illustrated in Table 5.6.

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<sup>33</sup> *ibid.*, p.692.

Table 5.6<sup>34</sup>

Year	Carried Down	Current Receipts	Year-end Balance	Interest	Amount at Beginning of Year
	\$	\$	\$		\$
6	0	229.61	229.61	1.3776	166.67
5	166.67	229.61	396.28	1.1889	333.32
4	333.32	229.61	562.93	1.1259	499.98
3	499.98	229.61	729.59	1.0944	666.58
2	666.58	229.61	896.19	1.0755	833.28
1	833.28	229.61	1,062.89	1.0629	1,000.00

In the same manner, the annual rates of return calculated in Table 5.4 also discount the cash receipts to zero. This is shown in Table 5.7.

Table 5.7

	Carried Down	Current Receipts	Year-end Balance	Interest	Amount at Beginning of Year
	\$	\$	\$		\$
6	0	229.61	229.61	1.168	196.58
5	196.58	229.61	426.19	1.020	417.83
4	417.83	229.61	647.44	1.150	563.00
3	563.00	229.61	792.61	1.149	689.87
2	689.87	229.61	919.48	1.010	910.38
1	910.38	229.61	1,139.99	1.140	1,000.00

A particular set of accounting rates of return (which differ because of the depreciation scheme adopted), may be used to discount the net cash flows to zero. This will apply not only to Vatter's example and

<sup>34</sup> Adapted from Vatter, W.J., *op.cit.*, p.691.

to constant cash flows, but generally to any pattern of cash flows. Thus, these accounting rates of return may also be regarded as a measure of the yield of a project in the same way as the IRR. The IRR is merely that *constant* rate of return which discounts a project's cash flow to zero.<sup>35</sup>

Throughout the above analysis, the depreciation calculation has emerged as a major cause of the differences between the ARR and the IRR. In the IRR model, (Table 5.2), depreciation is **calculated** such that  $D_t = R_t - Y_t$ , where  $Y_t = V_{t-1} r$ . This ensures that the IRR is constant over the life of the project. In the ARR model (Table 5.3), and in Table 5.4, varying annual accounting rates of return result from using different depreciation patterns. In all three cases,  $D_t$  and  $Y_t$  ( $t = 0 \dots n$ ), are different. With regard to the depreciation pattern of the IRR model, Vatter stated that "... increasing charge amortizations [depreciations] do not fit the real-world experience pattern is sufficient reason for not using them".<sup>36</sup> However, Vatter's criticism of the IRR model applies only to this one case where the annual pattern of cash flows is constant. Such a pattern also may not fit real-world experience. It is necessary to look more closely at the cash flow patterns in the IRR models and the corresponding depreciation schedules.

Gordon has shown that the following relationships between cash flows and depreciation exist in the IRR model:<sup>37</sup>

<sup>35</sup> As shown by Bailey, M.J., "Formal Criteria for Investment Decisions", *Journal of Political Economy*, Vol. LXVII, October 1959, pp.476-488.

<sup>36</sup> Vatter, W.J., *op.cit.*, p.693.

<sup>37</sup> Gordon, L.A., *op.cit.*, p.349 and pp.353-355.

(1) Constant cash flows:

When  $R_1 = R_2 = R_3 \dots \dots \dots R_n = R_c$ ,

$D_1 < D_2 < D_3 \dots \dots \dots D_n$ .

(2) Increasing cash flows:

When  $R_1 < R_2 < R_3 \dots \dots \dots R_n$ ,

$D_1 < D_2 < D_3 \dots \dots \dots D_n$ .

(3) Declining cash flows:

When  $R_1 > R_2 > R_3 \dots \dots \dots R_n$ ,

$D_1 > D_2 > \dots \dots \dots D_n$ .

Thus Vatter's objection to the increasing depreciation pattern in the IRR model only applies when the investment gives constant cash flows or increasing cash flows. In the case of declining cash flows, which is more probable *a priori*, it is possible that the economic depreciation charge will be constant (like the straight-line method) or declining (like the reducing-balance or sum-of-year digits methods). Stauffer reaches a similar conclusion. He states:

"The magnitude and size of error in the N.P.R. [net profitability ratio = net income/net assets = ARR] depend intimately on the time-shape of the cash flow stream. Solomon's work had been confined to constant level streams; if the revenue stream declines with the increasing asset age, as is more probable *a priori*, there is increasing likelihood that the size of the error reserves, and its absolute magnitude will generally be less."<sup>38</sup>

A second instance where the ARR may approach the IRR is when all the cash flows from an investment are reinvested at the same IRR earned on the initial investment. Several studies have established this connection between the ARR and the IRR. Livingstone and Salamon

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<sup>38</sup> Stauffer, T.R., "The Measurement of Corporate Rates of Return: A Generalized Formulation", *Bell Journal of Economics and Management Science*, Vol. 2, No. 2, Autumn 1971, p.467.

found that after an initial start-up period, a constant reinvestment rate ( $c$ ) tends towards a constant gross investment growth rate ( $g$ ), and vice versa. Their study established that if  $c = 1$  (all annual cash flows are reinvested), then the ARR is approximately equal to the IRR irrespective of constant, increasing or declining cash flows.<sup>39</sup>

Solomon came to the same conclusion. He found that in a non-growth situation, the ARR sometimes is less than the IRR, but more generally the ARR is greater than the IRR. However the introduction of positive growth tends to lower the ARR relative to the IRR.

"If the book-yield  $a$  is higher than the true yield  $r$  in the zero-growth case, then as  $g$  increases the book-yield falls continuously towards  $r$ . In the special situation where the growth rate just equals true yield [IRR] the book yield [ARR] is also just equal to true yield. In other words when  $g = r$ ,  $a$  is equal to  $r$ ."<sup>40</sup>

This is similar to the conclusion of Livingstone and Salamon. In their terms, if  $g = r$ ,  $c = 1$ , and therefore  $ARR = IRR$ . Stauffer also concludes in the same manner. "If the firm is growing steadily ... the NPR [ARR] converges to the exact economic rate of return in such measure as the growth rate of the firm approaches the accounting rate of return."<sup>41</sup>

The above analysis, and that contained in several studies, provides an understanding of the salient differences between the ARR and the IRR, and the major circumstances under which the ARR may approach the IRR. Most of the studies have been undertaken under strict and restrictive assumptions, and on the whole, conclude that, *without adjustment*, the ARR is generally a poor proxy for the IRR.

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<sup>39</sup> Livingstone, J.L. and Salamon, G.L., *op.cit.*

<sup>40</sup> Solomon, E., *op.cit.*, p.242.

<sup>41</sup> Stauffer, *op.cit.*, p.467.

For example, the Solomon study<sup>42</sup> assumed that the firm consisted of projects with the same life and the same IRR. The zero-growth model (constant annual gross investment) resulted in the ARR-IRR relationship being affected by the length of project life, the cash flow patterns, and depreciation. In this model Solomon found that the ARR is not an accurate measure of the IRR and that the error in the ARR is "neither constant nor consistent".

Harcourt considered the major cases of constant annual investment and constant growth in annual investment, where the capital of the firm consists of entirely physical assets, and where the firm holds financial assets as well. For these cases, he investigated the effect that length of asset life, the cash flow pattern, and the IRR had on the ARR-IRR relationship. The major conclusion reached was that the ARR was influenced by the pattern of cash flows, the depreciation method used, whether or not the firm's capital is growing, and by what assets are included in capital. Harcourt concluded that "... no easy rules of thumb which would allow adjustments for these factors to be made in the estimates emerge from the analysis".<sup>43</sup>

Livingstone and Salamon compared the ARR and the IRR as they apply to firms by assuming that the firm is a collection of independent projects. The model they developed also assumed that the firm operates in an economy of unchanging prices and under conditions of certainty, that the projects have the same life, the same cash flow pattern, the same IRR and a zero salvage value. Using a simulation model, they examined the ARR-IRR relationships by varying the model parameters  $n$ ,  $b$ ,  $c$  and  $r$ , where

$n$  = length of project in years;

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<sup>42</sup> Solomon, E., *op.cit.*

<sup>43</sup> Harcourt, G.C., *op.cit.*, p.311.

$b$  = factor describing the pattern of cash flows generated by the project (e.g. if  $b = 1$ , the project has level flows);

$c$  = the proportion of annual firm flows which are reinvested;

$r$  = IRR.

From this simulation, they illustrated the interdependencies of the various parameters, and illustrated the relationships between the ARR and the IRR under varying conditions. For example, the effect of  $b$  and  $c$  on the ARR-IRR relationship for given values of  $n$  ( $= 10$ ) and  $r$  ( $= .10$ ), was shown as follows:<sup>44</sup>

	$C < 1$	$C > 1$
$b < 1$	$ARR_t < IRR$	$ARR_t > IRR$
$b > 1$	$ARR_t > IRR$	$ARR_t < IRR$

Under the restrictive assumptions of the model, the study provided a set of ARR-IRR relationships and enhanced the understanding of the simultaneous effects of several variables on the ARR-IRR relationship.

Stauffer<sup>45</sup> examined a model which assumed that the firm invests each year in a homogeneous mix of projects which generate a cash flow, the time pattern of which is constant and independent of either prior or subsequent investments. The study found that under certain conditions, the ARR can exactly equal the IRR (see page 209 above).

Despite these results, two recent contributions have been slightly more optimistic in using an ARR as an approximation of the IRR. Gordon has suggested that providing one understands the components of the IRR, estimates could be made of the degree to which the accountants' income and book value of assets misrepresent economic income and economic values, and the IRR be calculated. For example, when the

<sup>44</sup> Livingstone, J.L. and Salamon, G.L., *op.cit.*, p.208.

<sup>45</sup> Stauffer, T.R., *op.cit.*



depreciation method used by a company is inconsistent with the pattern of cash flows (as outlined on page 209 above), a depreciation adjustment to both the numerator and denominator of the ARR could be made.<sup>46</sup> He concludes that "... in the final analysis, income determination and valuations of assets are at the heart of the disparities between the ARR and the IRR".<sup>47</sup>

More recently, J.A. Kay has explored the relationship between the ARR and the IRR and reports that:

"... in balanced growth (as considered by Harcourt and others), there is, in fact a simple relationship between the d.c.f. rate of return and the accountant's rate of return: that it is possible to deduce a d.c.f. rate of return from a sequence of accounting data without knowledge of either the amount or the scheme of depreciation allowances: and that under quite plausible circumstances, a simple average accountant's rate of return will be a good estimator of the true rate of return."<sup>48</sup>

Kay shows that a weighted average ARR is equal to the IRR. The average ARR is weighted by the book value of capital employed, discounted at the IRR to ensure that distant capital requirements receive less weight. This average is used to suggest a procedure to derive information that will assist in the calculation of the IRR from accounting data. However, Kay's propositions deal with simple cases and assume that, in the calculation of the IRR, the accountants' estimates (at book values) of the initial and terminal capital stock are accepted. No adjustment is made for changing prices, and no empirical evidence is presented to illustrate the validity or otherwise of the proposed method.

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<sup>46</sup> Gordon, L.A., *op.cit.*, pp.350-351.

<sup>47</sup> *ibid.*, p.353.

<sup>48</sup> Kay, J.A., "Accountants, too, could be happy in a golden age", *op.cit.*

## Conclusions

Price regulatory authorities, such as the P.J.T., find the IRR useful for assessing the level of profits and prices - especially when attempting to set prices at a level that will result in an efficient allocation of resources. In this chapter, the conceptual relationship between the ARR and the IRR and the considerable research previously undertaken have been examined, with the aim of identifying the differences and the conditions under which the usually available ARR might be a good guide to the not usually available IRR. In some circumstances, it was found that the ARR will approach the IRR, but on the whole, the ARR-IRR relationship is affected by factors such as the pattern of cash flows of the assets of a firm, the length of asset life, the proportion of cash flows that are reinvested and the depreciation method. Further research, which is beyond the scope of this dissertation, is needed to relax some of the simplifying assumptions made in previous studies, and to empirically test the ARR-IRR relationship. Harcourt concluded that there are no cook book tricks for converting the ARR to the IRR. However, an awareness of the conceptual differences between the ARR and the IRR and the conditions under which the ARR will approach the IRR, may assist a price regulatory authority in the calculation of an approximate IRR from (adjusted) accounting data as a check on the validity of a company's estimates.

## CHAPTER 6

### RECOMMENDATIONS AND CONCLUSIONS

In concluding this examination of profitability assessment by the P.J.T., it is proposed to summarize the main findings and to set out recommendations arising from the research.

#### Accounting Rates of Return

(1) The P.J.T. has not attempted to specify how the numerator and denominator of the accounting rate of return are to be defined. The Tribunal's reliance on each company's calculations has resulted in a diverse number of ratios, which have a diverse set of definitions of the numerator and denominator, being submitted for consideration for the one purpose - prices justification. There are important differences between various definitions of the rate of return, and no single definition will always suffice for any one purpose. For the purpose of assessing a company's profitability for prices justification, there are reasons for including or excluding several component account items from the rate of return definition. These reasons are discussed in Chapter 2. It is recommended that a number of specifically defined ratios be examined for each company. This set of ratios may be summarized as follows:

- (1) Profit before tax plus interest/Average total funds
- (2) Profit before tax/Average shareholders' funds
- (3) Profit after tax/Average total funds
- (4) Profit after tax/Average shareholders' funds.

Profit is defined as net profit less income from outside investments, less income from extraordinary activities, and including interests of minority shareholders. Average total funds are net fixed assets plus capitalized exploration, research and development expenditures, and working capital (including all current assets less current liabilities except bank overdrafts and short-term loans), but

excluding outside investments and other intangible assets such as goodwill and preliminary expenses. Average shareholders' funds include paid-up capital, reserves, retained earnings and the interest of minority shareholders. Both total funds and shareholders' funds are calculated so that they represent an average over the period being considered.

(2) The "earnings test" or the "comparative profit justice" criterion, which involves the comparison of a company's rate of return over time, with an industry or economy average or with other firms, is the most popular method of profitability assessment employed by the P.J.T. in its public inquiries. The P.J.T. used the I.A.C. and R.B.A. series as the major guideposts in the comparison of a company's rate of return with that of industry as a whole, or with the industry to which the firm belongs. However, there are several problems with these comparisons:

- (a) The definitions of the I.A.C. ratios (operating profit/funds employed and net profit/shareholders' funds) and the R.B.A. ratio (net profit/average shareholders' funds) are different and were not designed for the purpose of prices justification; but were apparently accepted by the P.J.T. because they were the "best" available.
- (b) The Tribunal did not consistently use the I.A.C. and R.B.A. series in assessing a company's profitability, and comparisons were undertaken with one or the other of the series or sometimes both. No reasons were given as to why the I.A.C. or the R.B.A. series should be used in different inquiries.
- (c) In a number of cases, the definitions of the company's rate of return did not conform with the definition of the I.A.C. and R.B.A. series, and therefore the comparisons were invalid.

(d) The I.A.C. and R.B.A. series are compiled from company profit and loss statement and balance sheet data, and are therefore distorted by the intermittent revaluations of assets carried out by companies in Australia. On some occasions the Tribunal has adjusted the company's rate of return to eliminate the effect of asset revaluations, but on other occasions the Tribunal has ignored the distortion. However, the Tribunal has not attempted to adjust the I.A.C. or R.B.A. guidepost series for the distortion caused by asset revaluations, or to develop a series in terms of current values. Thus, for this reason as well, the comparisons between a company's rate of return and the guidepost series are meaningless.

To overcome these problems, it is recommended that:

- (i) a guidepost rate of return series be developed that is specially defined for assessing a company's profitability for prices justification purposes. The definitions as outlined in (1) above could be used;
- (ii) to overcome the problems associated with traditional historical cost accounting systems (outlined in Chapter 4), and with spasmodic asset revaluations as is permitted in Australia, the guidepost series should be developed using current values. This could be developed by obtaining current value data from companies, or if this is not possible, by using a method similar to that outlined in Chapter 4;
- (iii) the developed guidepost series be consistently applied in all inquiries as an indicator of the reasonableness or otherwise of a company's profitability;
- (iv) the companies appearing before the Tribunal be given specific instructions and definitions of the accounting data required;

- (v) the definition of the company's rates of return be closely examined to ensure that these conform with the guidepost series before a comparison is undertaken.

#### Internal Rate of Return

The P.J.T. has occasionally referred to the internal rate of return under the title of the "new investment test". However, while the IRR has been discussed in some inquiries, the major profitability indicators have been the accounting rate of return and the "earnings test". The IRR is a useful alternative measure of profitability, especially when attempting to set prices which will result in an efficient allocation of resources. The reasons usually advanced for not using the IRR are the impossibility to verify the assumptions that lie behind a company's estimates of future cash flows, and the cost of capital. For this reason it would be useful to have a conversion formula that would enable the IRR to be calculated from the normally available ARR. This would assist the P.J.T. (or any other price regulatory authority) in verifying a company's estimates of the IRR. On the whole, the research that has been undertaken on the ARR-IRR relationship has offered disappointing results as far as devising a conversion formula is concerned. Conceptual analyses of the relationship has promoted a better understanding of the difference between the ARR and the IRR, and in some circumstances, it was found that the ARR will approach the IRR. However, further empirical research at the company level, which is beyond the scope of this study, is necessary if appropriate adjustments to the ARR are to be discovered that will assist in estimating the IRR from accounting data.

#### Conclusion

The aim of this project was to examine profitability assessment by the P.J.T. in its public inquiries. It was found that the

Tribunal relied on an accounting rate of return as the main indicator of a company's profitability. The research showed that the Tribunal's use of the accounting rates of return left a lot to be desired. This was mainly the result of the Tribunal accepting a diverse number of ratios that vary because of the idiosyncratic nature of the figures for profit and funds employed, which depend heavily on the varied methods of accounting used. If the accounting rate of return is to remain as an indicator of a company's profitability for prices justification purposes, several adjustments to conventional company data must be made. As a result of this research, recommendations to overcome the problems encountered have been proposed.

# APPENDIX 1

## CALCULATIONS FOR FIGURE 2.1 - RATES OF RETURN

			Ratio 1	Ratio 2	Ratio 3	Ratio 4	Ratio 5
$\frac{B}{B+E}$	E	B	r	$r + \frac{B}{E}(r-i)$	$r(1-t) + \frac{itB}{B+E}$	$(1-t) \left[ r + \frac{B}{E}(r-i) \right]$	$r(1-t)$
%	\$	\$	%	%	%	%	%
0	30,000	0	23.3	23.3	11.65	11.65	11.65
20	24,000	6,000	23.3	26.625	12.65	13.3	11.65
40	18,000	12,000	23.3	32.167	13.65	16.1	11.65
50	15,000	15,000	23.3	36.6	14.15	18.3	11.65
60	12,000	18,000	23.3	43.25	14.65	21.625	11.65
80	6,000	24,000	23.3	76.5	15.65	38.25	11.65



# APPENDIX 2

## INDUSTRIES ASSISTANCE COMMISSION

### SURVEY OF FINANCIAL INFORMATION

#### PART B - BALANCE SHEET, COST AND REVENUE DATA

NOTES: (a) The balance sheet and cost and revenue data are required for the business shown in the address box on PART A, unless otherwise specified.

.....  
 .....  
 .....

- (b) Amounts owed to you by related companies should be allocated to "Trade debtors" or "Outside investments" as appropriate.  
 (c) Amounts owed by you to related companies should be allocated to "Trade creditors" or "Borrowed money" as appropriate.  
 (d) Net profit is arrived at after allowing for operating expenses, depreciation, income tax and interest paid. Include any investment income, profits and losses of a non-operating nature and profits payable to minority shareholders. Indicate loss by - sign.  
 (e) Include interest of minority shareholders in "Other shareholders' funds".  
 (f) State here the date on which accounting year ends . . . . ./ . . . . /1974.

#### BALANCE SHEET DATA

##### ASSETS

- A. Land and buildings (at written down value)  
 B. Plant, machinery and motor vehicles, etc. (at written down value)  
 1. TOTAL Net fixed tangible assets (Lines A + B)  
 2. Intangible assets (goodwill, patents, trademarks)  
 3. Stock on hand  
 4. Trade debtors, accrued accounts and other debtors, etc. (incl. bills receivable) - see note (b) above  
 5. Outside investments - see note (b) above  
 6. Other assets (please specify main items) .....  
 7. TOTAL ASSETS (as per balance sheet - to agree with "Total Assets" in line 13 below

##### LIABILITIES

8. Paid-up capital (report proprietor's account here in the case of an unincorporated business)  
 9. Other shareholders' funds (e.g. reserves and unappropriated profits). Include interest of minority shareholders  
 10. Borrowed money (fixed and short-term, including bank overdraft) - see note (c) above  
 11. Trade creditors accrued accounts and other creditors (incl. bills payable) - see note (c) above  
 12. Other liabilities (e.g. provisions, etc.) - (please specify main items) .....  
 13. TOTAL LIABILITIES (as per balance sheet) - to agree with "Total Assets" in line 7 above

##### REVENUE AND COST DATA

14. Sales before cash discounts (exclude sales of fixed assets, SALES TAX AND EXCISE DUTY)  
 15. Depreciation - as per calculation of net profit below - Line 19  
 16. Income from outside investments - as per calculation of net profit below - Line 19  
 17. Interest paid on all borrowed money  
 18. Income tax - as per calculation of net profit below - Line 19  
 19. Net profit/loss - see note (d) above  
 20. Profit or losses of a non-operating nature - as per calculation of net profit above - Line 19.  
 Indicate loss by - sign.  
 21. Dividends (or drawings in the case of an unincorporated business) paid or provided for out of the year's profit.

1973-74	
(omit cents)	
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## APPENDIX 3

### THE SWAN BREWERY COMPANY LIMITED

#### Submission to Prices Justification Tribunal (Appendix X)

#### Notes on the Use of Rate of Return on Shareholders' Funds as a Measure of Company Performance

1. Rate of Return is the result of dividing net profits available to ordinary shareholders by ordinary shareholders' funds, including reserves and unappropriated profits. The denominator is mathematically equivalent to total assets less borrowings and preferred share capital.
  
2. Unfortunately both numerator and denominator in the rate of return formula can be subject to gross distortions brought about by variations in accounting treatments. These distortions are well known and the few mentioned, by way of illustration, are not exclusive by any means:
  - (a) The accounting valuation of assets at cost and the irregular nature of asset revaluations can lead to large differences in the book values of assets which are essentially similar in earnings capacity. Differences in the age composition of the assets, in their patterns of growth in periods of changing prices, can further distort both cost and revaluation figures for the assets held by the firm.
  - (b) The relative frequency (or infrequency) of asset revaluations makes nonsense of comparative rates of return for different firms for the same time period, or for the same firm for different time periods. This does not imply the historical cost of assets is necessarily any better as a basis for rate of return calculations, because depreciation calculations of long-lived assets in periods of changing prices can lead to even more gross distortions of real cost of asset utilisation in later periods of the assets' lives.
  - (c) The accountant's interpretations of the "cost" of assets acquired on a non-cash basis can vary considerably from firm to firm.
  - (d) Firms' attitudes to depreciation and amortisation policies vary widely, both in respect to choice of the method of depreciation and the assets depreciated. Examples are depreciation on buildings, and amortisation of goodwill.
  
3. Some people attempt to draw inferences about average performance by using data for extended time periods. Unfortunately for those people, methods of accounting have been evolving through time and what is unacceptable today may have been acceptable in previous periods. For example, the accounting profession appears to be moving in the direction of prohibiting items being credited or charged *directly* against reserves. The point being made is that inter-temporal comparisons across firms can be subject to considerable distortion from this source. Moreover, inter-temporal distortions in rate of return calculations for the same firm may result from the same factor.

### APPENDIX 3 (CONTD.)

4. The question of the length of time period sufficient to judge the performance of the company is difficult to answer. Management plans take place today but the fruits may be born over several years of operations. Any one single year may be extremely unreliable as an assessment of the firm's "true capabilities." On the other hand, there is the dilemma of assessing performance over a longer time period in which changes in accounting methods and differences in accounting methods between firms can grossly distort inter-firm comparisons.

5. It would be folly not to recognise that many large industrial corporations have divisionalised their activities, perhaps because their activities are geographically diversified or diversified over classes of products. Accounting allocations of joint costs, such as those connected with central overheads, are impossible to rationalise other than on an arbitrary basis. And arbitrary allocations are no basis for sensible decisions.

6. For these reasons one should reject the notion of using accountancy figures to make detailed inter-firm and even intra-firm comparisons of relative performance, as a means of assessing operating performance. It just does not make sense.

*Philip Brown*

\*Philip Brown

18 February 1973.

\*Philip Brown is Professor of Accounting at the University of Western Australia.

## APPENDIX 4

P.A. MANAGEMENT CONSULTANTSPA REPORT Vol.5 No. 1 March 1974

## AVERAGE RETURN ON SHAREHOLDERS' FUNDS (AFTER TAX AFTER INTEREST)

INDUSTRY	1969-70	1970-71	1971-72	1972-73	INDUSTRY	1969-70	1970-71	1971-72	1972-73
<b>MANUFACTURING</b>					<b>PRIMARY PRODUCTS</b>				
Primary Metal Industries	7.7	11.0	7.7	7.4	Farming Properties	5.0	7.5	2.0	5.3
Farm, Const. & Mech. Hand. Equip.	0.3	0.0	5.8	9.7	Island Plantation/Produce	7.2	7.3	7.4	7.6
Transport Equipment	11.2	9.8	4.9	6.2	Wool Sell. Brokers/S. & S. Agents	5.7	4.6	5.8	8.3
Heavy Gen. Eng. Equip.	8.4	7.9	7.9	6.0	Wool & Skin Buying	7.1	6.7	8.2	11.6
Metal Building Supplies & Equip.	9.6	8.2	8.7	8.4	<b>BUILDING &amp; CONSTRUCTION</b>				
Elect. Mach. Equip. Supplies	5.5	8.7	5.7	5.9	Civil Eng. Contractors	13.6	14.1	13.4	13.6
Other Fabricated Metal Prods.	8.0	8.0	7.3	8.5	Property Developers	10.0	9.9	9.1	11.0
Timber Products	6.5	5.0	6.3	8.1	<b>FINANCE</b>				
Portland Cement	10.6	10.3	11.6	12.2	Trading & Savings Banks	10.6	10.6	10.7	12.5
Blue Met., Ready Mix. Concrete	12.2	12.5	13.1	13.2	Invest. Bank. & Money Market	11.7	11.7	13.1	14.0
Bricks and Pipes	6.6	8.5	8.0	6.5	Home Loan Assoc.	11.1	11.6	12.9	12.8
Other Building Materials	9.4	8.9	8.8	9.1	Hire Purchase	11.8	11.7	12.9	12.4
Petroleum Refining & Mktg.	5.7	4.7	6.3	6.0	Investment & Holding	7.3	8.5	8.2	9.1
Chemical Fertilisers	5.8	11.0	11.3	14.3	Non-Life Insurance	9.6	9.6	13.1	12.5
Industrial Chemicals	6.7	5.8	8.8	9.3	<b>TRANSPORT</b>				
Other Chemicals	8.1	9.3	6.2	5.6	Airlines	15.7	8.0	0.7	5.9
Paint & Enamels	8.3	9.1	8.8	9.0	Shipping	10.7	9.4	10.1	8.1
Pharmaceuticals	11.4	12.3	12.0	13.7	Road Transport	11.4	12.1	11.2	6.5
Soaps, Deterg., Toilet Preps.	12.9	12.9	12.8	14.1	<b>UTILITIES</b>				
Rubber & Plastic Prods.	9.6	9.4	7.6	7.6	Town & LP Gas	6.9	7.9	6.6	5.5
Tobacco & Cigarettes	12.5	12.2	14.5	14.0	<b>RETAIL</b>				
Dairy Prods.	5.9	6.4	7.7	8.6	Dept. & Gen. Stores	8.9	9.1	9.1	10.4
Bakery Prods., Veg./Animal Fats/Oil	8.7	10.3	9.8	9.0	Specialty Stores	9.2	8.8	10.2	10.4
Meat	9.4	8.7	12.9	15.9	<b>VEHICLE DISTRIBUTION</b>				
Sugar	8.1	10.7	8.9	9.8	Motor Vehicles	9.8	9.1	7.7	10.2
Canned Fruit	4.7	4.4	2.8	2.8	Motor Veh. Parts & Access.	9.8	10.1	10.2	8.5
Malt	7.1	8.7	12.0	8.0	Farm, Const. & Mech. Hand. Equip.	7.4	7.9	4.8	5.9
Confect. & Snack Food	5.8	9.4	10.4	11.5	<b>OTHER DISTRIBUTION</b>				
Beer, Wine & Spirits	9.3	9.3	9.0	9.6	Metal Fabrication - Elect.	9.7	5.8	5.4	5.4
Other Food Beverages	1.2	9.2	11.1	8.9	Metal Fabrication - Non-Elec.	6.8	6.0	5.7	10.8
Mainly Woolen Textiles	6.1	1.0	5.6	8.6	Paper & Allied Products	11.3	16.5	14.0	15.8
Mainly Cotton Textiles	6.8	6.1	7.2	7.6	General Merchants	7.2	7.1	6.6	8.1
Other Textiles	9.5	5.7	2.3	4.7	Pharm. Lab. & Sci. Equip.	6.4	10.0	5.7	6.6
Rope & Cordage	8.2	8.2	7.3	10.3	Hotels & Motels	6.9	6.3	2.5	1.8
Apparel	4.6	19.8	9.0	12.0	Theatres	4.6	-	4.7	13.5
Leather & Leathergoods Prods.	2.1	-	6.6	6.2	<b>MISCELLANEOUS GOODS &amp; SERVICES</b>				
Pulp & Paper	13.4	9.5	8.9	8.6	Broadcasting	14.2	8.7	9.4	10.5
Newspapers & Magazines	10.9	11.1	10.2	12.4					
Other Paper & Allied Prods.	7.6	8.9	7.1	6.3					
Packaging (paper/metal/wood/glass)	8.1	7.2	8.2	9.3					
Miscellaneous Products	11.3	12.5	12.3	13.2					

APPENDIX 5  
TABLE A

Land Current Value Index

Current dollars (a)		Constant dollars (b)		Price Index Base 1966-67		Price Index Base 1972-73		Current Value Index	
\$m		\$m							
1962-63	14,269	16,133	0.8845	0.6444	1.5518	1962-63	14,269	1.5518	1.5518
1963-64	15,598	17,270	0.9032	0.6580	1.5198	1963-64	15,598	1.5198	1.5198
1964-65	17,380	18,534	0.9377	0.6831	1.4639	1964-65	17,380	1.4639	1.4639
1965-66	18,587	19,187	0.9687	0.7057	1.4170	1965-66	18,587	1.4170	1.4170
1966-67	20,178	20,178	1.0000	0.7285	1.3727	1966-67	20,178	1.3727	1.3727
1967-68	22,193	21,339	1.0400	0.7576	1.3200	1967-68	22,193	1.3200	1.3200
1968-69	24,639	22,745	1.0833	0.7892	1.2671	1968-69	24,639	1.2671	1.2671
1969-70	27,551	24,235	1.1368	0.8281	1.2076	1969-70	27,551	1.2076	1.2076
1970-71	30,654	24,373	1.2081	0.8801	1.1362	1970-71	30,654	1.1362	1.1362
1971-72	33,976	25,214	1.2961	0.9442	1.0591	1971-72	33,976	1.0591	1.0591
1972-73	37,899	27,609	1.3727	1.0000	1.0000	1972-73	37,899	1.0000	1.0000

Source: (a) Australian National Accounts 1972-73, Table 4.

(b) Australian National Accounts 1972-73, Table 5.

The "constant dollars" are at average 1966-67 prices.

## APPENDIX 5

### TABLE B

#### Buildings Current Value Index

Year	Current dollars (a) \$m	Constant dollars (b) \$m	Price Index Base 1966-67	Price Index Base 1972-73	Current Value Index
1962-63	524	594	0.8822	0.6423	1.5569
1963-64	579	644	0.8991	0.6547	1.5274
1964-65	633	671	0.9434	0.6869	1.4558
1965-66	760	793	0.9584	0.6978	1.4331
1966-67	738	738	1.0000	0.7281	1.3734
1967-68	884	860	1.0279	0.7484	1.3362
1968-69	1,014	942	1.0764	0.7837	1.2760
1969-70	1,119	994	1.1258	0.8197	1.2200
1970-71	1,394	1,164	1.1976	0.8720	1.1468
1971-72	1,457	1,133	1.2860	0.9396	1.0679
1972-73	1,361	991	1.3734	1.0000	1.0000

Source: (a) *Australian National Accounts 1972-73, Table 53.*

(b) *Australian National Accounts 1972-73, Table 54.*

The "constant dollars" are at average 1966-67 prices.

APPENDIX 5

TABLE C

Plant and Equipment Current Value Index

Year	Current dollars (a) \$m	Constant dollars (b) \$m	Price Index Base 1966-67	Price Index Base 1972-73	Current Value Index
1962-63	1,393	1,497	0.9305	0.7170	1.3947
1963-64	1,567	1,672	0.9372	0.7221	1.3848
1964-65	1,860	1,948	0.9548	0.7357	1.3592
1965-66	1,985	2,026	0.9798	0.7550	1.3245
1964-65	1,985	2,026	0.9798	0.7550	1.3245
1966-67	2,100	2,100	1.0000	0.7705	1.2979
1967-68	2,160	2,115	1.0213	0.7869	1.2708
1968-69	2,375	2,249	1.0560	0.8137	1.2290
1969-70	2,600	2,370	1.0970	0.8453	1.1830
1970-71	2,890	2,467	1.1715	0.9027	1.1078
1971-72	2,915	2,329	1.2516	0.9644	1.0369
1972-73	2,750	2,119	1.2978	1.0000	1.0000

Source: (a) Australian National Accounts  
1972-73, Table 53.

(b) Australian National Accounts  
1972-73, Table 54.

The "constant dollars" are at average 1966-67 prices.

## APPENDIX 5

TABLE D

Buildings, Plant and Equipment Current Value Index.  
 [Private Gross Fixed Capital Expenditure (excluding dwellings) Implicit Deflator]

Year	Current Dollars	Constant Dollars	Price Index Base 1959-60	Price Index Base 1966-67	Price Index Base 1972-73	Current Value Index
1955-56	1204 <sup>(a)</sup>	1338 <sup>(b)</sup>	0.8999	0.7987		
1956-57	1275	1362	0.9361	0.8309		
1957-58	1355	1401	0.9672	0.8584		
1958-59	1372	1399	0.9807	0.8705		
1959-60	1571	1571	1.0000	0.8876		
1960-61	1742	1708	1.0199	0.9053		
1961-62	1725	1676	1.0292	0.9135		
1962-63	1917 <sup>(c)</sup>	2091 <sup>(d)</sup>		0.9168	0.6935	1.4420
1963-64	2146	2316		0.9266	0.7010	1.4265
1964-65	2493	2619		0.9519	0.7201	1.3887
1965-66	2745	2819		0.9737	0.7366	1.3576
1966-67	2838	2838		1.0000	0.7565	1.3219
1967-68	3044	2975		1.0232	0.7740	1.2920
1968-69	3389	3191		1.0620	0.8034	1.2447
1969-70	3719	3364		1.1055	0.8363	1.1957
1970-71	4284	3631		1.1798	0.8925	1.1204
1971-72	4372	3462		1.2629	0.9554	1.0467
1972-73	4111	3110		1.3219	1.0000	1.0000

Source: (a) *Australian National Accounts 1972-73*,  
 Appendix C, Table A, p. 108.

(b) *Australian National Accounts 1972-73*,  
 Appendix C, Table B, p. 110.  
 The "constant dollars" from 1955-56 to  
 1961-62 are at average 1959-60 prices.

(c) *Australian National Accounts 1972-73*, Table 53.

(d) *Australian National Accounts 1972-73*, Table 54.  
 The "constant dollars" from 1962-63 to  
 1972-73 are at average 1966-67 prices.



## APPENDIX 5

TABLE E

## INVENTORY CURRENT VALUE INDEX\*

Year	Current dollars (b) \$m	<sup>Constant</sup> Current dollars (c) \$m	Price Index	Price Index Base 1966-67	Price Index Base 1972-73	Replacement Value Index
1958	3207 <sup>(a)</sup>	3537 <sup>(a)</sup>	0.9067	0.9815	0.9496	1.0531
1958-59	+155 <sup>(a)</sup>	+168 <sup>(a)</sup>				
1959	3362	3705	0.9074	0.9823	0.9504	1.0522
1959-60	+188	+200				
1960	3550	3905	0.9091	0.9841	0.9521	1.0503
1960-61	+425	+453				
1961	3975	4358	0.9121	0.9873	0.9552	1.0469
1961-62	-119	-120				
1962	3856	4238	0.9099	0.9849	0.9529	1.0494
1962-63	+220	+223				
1963	4076	4461	0.9137	0.9890	0.9568	1.0452
1963-64	+184	+195				
1964	4260	4656	0.9149	0.9903	0.9581	1.0437
1964-65	+460	+491				
1965	4720	5147	0.9170	0.9926	0.9576	1.0443
1965-66	+224	+218				
1966	4944	5365	0.9215	0.9975	0.9651	1.0362
1966-67	+157	+157				
1967	5101	5522	0.9238	1.0000	0.9675	1.0336
1967-68	+281	+280				
1968	5382	5802	0.9276	1.0041	0.9715	1.0293
1968-69	+320	+310				
1969	5702	6112	0.9329	1.0098	0.9770	1.0235
1969-70	+417	+414				
1970	6119	6526	0.9376	1.0149	0.9819	1.0184
1970-71	+463	+477				
1971	6582	7003	0.9399	1.0174	0.9843	1.0160
1971-72	+18	-31				
1972	6600	6972	0.9466	1.0246	0.9913	1.0088
1972-73	-36	-98				
1973	6564	6874	0.9549	1.0336	1.0000	1.0000

(a) Helliwell, J. and others "Quarterly Estimates of Private Sector Wealth." *Reserve Bank of Australia Research Discussion Paper No. 18*, August 1971, pp. 23-26.

(b) *Australian National Accounts 1970-71*, Table 58 and *Australian National Accounts 1972-73*, Table 61.

(c) *Australian National Accounts 1972-73*, Table 62. *Australian National Accounts 1970-71*, Table 59.

\* For an explanation of the construction of this index, see "Notes to Accompany Table E" (pp.230-231).

## APPENDIX 5 (CONTD.)

### Notes to accompany Table E - Inventory Current Value Index.<sup>1</sup>

The Australian National Accounts 1972-73 (Tables 61 and 62) give the "increase in stocks, 1962-63 to 1972-73" and the "increase in stocks at average 1966-67 prices, 1962-63 to 1972-73". However an implicit price index cannot be constructed by calculating the ratio of current to constant (average 1966-67) dollar values of the physical change in inventories that is presented in these Tables, because the resulting index has some very strange properties. For example, in 1971-72, the ratio calculated on that basis is negative. The reason for this is that the net physical change in inventories over the year

"involves increases in some components and decreases in other components whose constant-dollar values are obtained by using different price indices. This gives rise to the possibility that the net current-dollar value of the aggregate physical change in inventories could be positive while the net constant-dollar value of the same change could be negative. This negative value for the implicit price of inventories changes could come about if there were increases in the quantity of higher-priced (relative to the index base) items accompanied by decreases in the stocks of lower-priced items."<sup>2</sup>

To construct an implicit price index (and an inventory current value index), the following procedure is used. In the Helliwell paper, the "book value of current non-farm stocks", and the "total non-farm stocks in constant dollars (1966-67 =1)", as at 30 June 1958, are given as \$m 3207 and \$m 3537 respectively. The current-dollar

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1. The following notes are adapted from Helliwell, J., and others "Quarterly Estimates of Private Sector Wealth", Reserve Bank of Australia, Research Discussion Paper No. 18, August 1971, pp. 23-26.

2. *ibid.*, pp. 23-24

changes in non-farm stocks, as given in Tables 58 and 61 of the Australian National Accounts 1970-71 and 1972-73, respectively,<sup>3</sup> are added to the 1958 base book value of current non-farm stocks (\$m 3207). Similarly, the constant dollar change is added to the 1958 base book value of constant-dollar non-farm stocks (\$m 3537). This results in a current-dollar and constant-dollar series from 1958 onwards. The ratio of the current-dollar to the constant-dollar series in each year produces an implicit price index for non-farm inventory. However, this implicit price index does not have a base of 1966-67 = 1 "...due to the common practice of valuing inventories at the lower of cost or market value. If some prices are rising, then the aggregate book value series will continually understate the market value because of price increases occurring after goods were purchased into inventory."<sup>4</sup> The problem is overcome by multiplying the implicit price index throughout by 1.0825.<sup>5</sup> This ensures that the subsequent price index obtained has a base of 1966-67 = 1. Once this price index is calculated, the inventory current value index is calculated in the same way as the other current value indices in Appendix 5. The results of the inventory current value index are shown in Table E.

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3. The value of the increase in stocks for the period 1958-59 is not available from Australian National Account Tables. The 1958-59 figures are derived from Helliwell's paper (Table 6.2) by adding the quarterly estimates for this period.

4. Helliwell, J., op.cit., p. 24.

5. The Helliwell paper gives this figure as 1.03. However, this would appear to be a misprint. 1.0825 is the number which will convert the price index to a base 1966-67 = 1.

# APPENDIX 6 - RESTATEMENT OF COMPANY DATA TO CURRENT VALUES USING I.A.C. DEFINITIONS\*

## 6.1 CALCULATION OF OPERATING PROFIT AND FUNDS EMPLOYED USING I.A.C. DEFINITIONS

	A.P.M. \$000	S.A.Brewing \$000	Cascade \$000	Bradmill \$000	Gadsden \$000	Bonds \$000	Containers \$000	A.P.P.M. \$000
<u>OPERATING PROFIT:</u>								
Net profit before tax	17,755	6,679	2,504	5,247	7,623	10,781	7,038	8,355
<u>add</u> interest	5,736	-	133	1,469	742	108	1,382	3,081
	23,491	6,679	2,638	6,717	8,365	10,889	8,420	11,437
less income from outside investments	4,248	109	38	124	166	33	-	652
	19,243	6,570	2,599	6,593	8,199	10,856	8,420	10,784
less profit on other than manufacturing activities	-	-	-	(1)	57	337	-	51
Operating profit (before tax)	19,243	6,570	2,599	6,595	8,141	10,519	8,420	10,732
<u>FUNDS EMPLOYED:</u>								
Net fixed assets	190,264	25,745	15,658	41,109	23,547	25,649	40,972	62,942
<u>add</u> current trade assets:								
stock on hand	26,230	1,794	3,023	21,496	15,439	31,859	23,195	22,449
debtors and accrued accounts	28,768	2,238	2,322	15,496	10,651	14,814	9,834	20,934
	245,262	29,777	21,004	78,102	49,638	72,323	74,001	106,326
<u>less</u> creditors and accrued accounts	14,909	4,138	1,257	13,735	6,231	5,077	9,932	12,987
Funds Employed	230,353	25,638	19,746	64,367	43,407	67,245	64,068	93,339
<u>RATIO:</u>								
Operating Profit								
Funds Employed	8.35%	25.63%	13.16%	10.25%	18.76%	15.64%	13.14%	11.50%

\* For presentation purposes, all amounts have been rounded down by deleting the last three figures. This rounding does not affect the accuracy of the ratio calculations.

## APPENDIX 6 (CONTD.)

### 6.2 CALCULATION OF CURRENT OPERATING PROFIT/CURRENT FUNDS EMPLOYED - 1973

#### COMPANY 1 - AUSTRALIAN PAPER MANUFACTURERS LIMITED

<u>CURRENT OPERATING PROFIT:</u>	<u>\$000</u>	<u>\$000</u>
Operating profit before tax (as per IAC Definition)		19,243
less current depreciation adjustment	3,927	
stock valuation adjustment	264	4,192
Current Operating Profit (before tax)		<u>15,050</u>

<u>CURRENT FUNDS EMPLOYED:</u>	<u>Net Current Value \$000</u>	<u>Net Original Cost \$000</u>	<u>\$000</u>
Funds employed (as per IAC Definition)			230,353
plus adjustment to restate assets at 1972-73 current value:			
Land (as per directors valuation)	53,405	19,956	33,449
Buildings	35,935	25,038	10,897
Plant and Equipment	122,995	96,778	26,217
Standing timber (etc.)	19,326	15,043	4,283
Current Funds Employed			<u>305,201</u>

RATIO       $\frac{\text{Current Operating Profit}}{\text{Current Funds Employed}} = 4.93\%$

#### OPERATING PROFIT ADJUSTMENTS (above)

(1) Current Depreciation Adjustment: (on buildings, plant and equipment only)

$$\text{Current Depreciation-}\$000 = 12,891 \times \frac{158,931}{121,816}$$

16,818

Adjustment- $\$000$  :                      3,927

(2) Inventory Valuation Adjustment: (Inventory Index = 1.0088)

Inventory at 1/7/72- $\$000$                       30,096

Inventory in 1972-73 values- $\$000$                       30,360

Adjustment- $\$000$                       264

## APPENDIX 6.2 (CONTD.)

### COMPANY 2 - S.A. BREWING HOLDINGS LTD.

<u>CURRENT OPERATING PROFIT:</u>	<u>\$000</u>	<u>\$000</u>
Operating profit before tax (as per IAC Definition)		6,570
less current depreciation adjustment	424	
stock valuation adjustment	15	440
Current Operating Profit (before tax)		<u>6,129</u>

<u>CURRENT FUNDS EMPLOYED:</u>	<u>Net Current Value \$000</u>	<u>Net Original Cost \$000</u>	<u>\$000</u>
Funds employed (as per IAC Definition)			25,638
plus adjustment to restate assets at 1972-73 current value:			
Freehold Properties	33,211	23,394	9,816
Plant, Furniture and Equipment	2,968	2,351	617
Current Funds Employed			<u>36,073</u>

RATIO       $\frac{\text{Current Operating Profit}}{\text{Current Funds Employed}} = 16.99\%$

#### OPERATING PROFIT ADJUSTMENTS (above)

(1) Current Depreciation Adjustment:

$$\text{Current Depreciation-}\$000 = 1,047 \times \frac{36,179}{25,745}$$

1,471

Adjustment- $\$000$

424

(2) Inventory Valuation Adjustment: (Inventory Index = 1.0088)

Inventory at 1/3/72- $\$000$                       1,794

Inventory in 1972-73 values- $\$000$               1,810

Adjustment- $\$000$

15

APPENDIX 6.2 (CONTD.)

## COMPANY 3 - CASCADE BREWERY COMPANY LIMITED

<u>CURRENT OPERATING PROFIT:</u>	<u>\$000</u>	<u>\$000</u>
Operating profit before tax (as per IAC definition)		2,599
less current depreciation adjustment	107	
stock valuation adjustment	27	135
Current Operating Profit (before tax)		<u>2,464</u>

<u>CURRENT FUNDS EMPLOYED:</u>	<u>Net Current Value \$000</u>	<u>Net Original Cost \$000</u>	<u>\$000</u>
Funds employed (as per IAC Definition)			19,746
plus adjustment to restate assets at 1972-73 current value:			
Freehold Properties	13,329	9,585	3,743
Plant and Equipment	6,881	5,568	1,313
Water Rights and Reticulation	92	59	33
Current Funds Employed			<u>24,836</u>

RATIO       $\frac{\text{Current Operating Profit}}{\text{Current Funds Employed}} = 9.93\%$

OPERATING PROFIT ADJUSTMENTS (above)

(1) Current Depreciation Adjustment: (plant and equipment only)

$$\text{Current Depreciation} = 457 \times \frac{6,881}{5,568}$$

565

Adjustment

107

(2) Inventory Valuation Adjustment: (Inventory Index = 1.0088)

Inventory at 1/4/72                      3,121

Inventory in 1972-73 values              3,149

Adjustment

27

## APPENDIX 6.2 (CONTD.)

### COMPANY 4 - BRADMILL INDUSTRIES LIMITED.

<u>CURRENT OPERATING PROFIT:</u>	<u>\$000</u>	<u>\$000</u>
Operating profit before tax (as per IAC definition)		6,595
less current depreciation adjustment	876	
stock valuation adjustment	196	1,073
Current Operating Profit (before tax)		<u><u>5,521</u></u>

<u>CURRENT FUNDS EMPLOYED:</u>	Net Current Value <u>\$000</u>	Net Original Cost <u>\$000</u>	<u>\$000</u>
Funds employed (as per IAC Definition)			64,367
plus adjustment to restate assets at 1972-73 current value:			
Plant and Equipment	20,686	15,911	4,775
Land and Buildings	28,029	20,922	7,107
Current Funds Employed			<u><u>76,250</u></u>

$$\text{RATIO} \quad \frac{\text{Current Operating Profit}}{\text{Current Funds Employed}} = 7.24\%$$

#### OPERATING PROFIT ADJUSTMENTS (above)

(1) Current Depreciation Adjustment:

$$\begin{array}{rcl} \text{Current Depreciation} & = & 2,717 \times \frac{48,715}{36,833} \\ & & 3,594 \\ \text{Adjustment} & & \underline{\underline{876}} \end{array}$$

(2) Inventory Valuation Adjustment: (Inventory Index = 1.0088)

$$\begin{array}{rcl} \text{Inventory at 1/7/72} & & 22,334 \\ \text{Inventory in 1972-73 values} & & 22,530 \\ \text{Adjustment} & & \underline{\underline{196}} \end{array}$$



## APPENDIX 6.2 (CONTD.)

### COMPANY 5 - J. GADSDEN AUSTRALIA LIMITED

<u>CURRENT OPERATING PROFIT:</u>	<u>\$000</u>	<u>\$000</u>
Operating profit before tax (as per IAC definition)		8,141
less current depreciation adjustment	808	
stock valuation adjustment	146	355
Current Operating Profit (before tax)		<u>7,185</u>

<u>CURRENT FUNDS EMPLOYED:</u>	Net Current Value <u>\$000</u>	Net Original Cost <u>\$000</u>	<u>\$000</u>
Funds employed (as per IAC Definition)			43,407
plus adjustment to restate assets at 1972-73 current value:			
Land and Buildings	11,634	8,171	3,463
Plant and Equipment	19,345	15,376	3,969
Current Funds Employed			<u>50,339</u>

$$\text{RATIO} \quad \frac{\text{Current Operating Profit}}{\text{Current Funds Employed}} = 14.13\%$$

#### OPERATING PROFIT ADJUSTMENTS (above)

(1) Current Depreciation Adjustment:

$$\begin{array}{rcl} \text{Current Depreciation} & = & 2,562 \times \frac{30,979}{23,547} \\ & & 3,371 \\ \text{Adjustment} & & \underline{\underline{808}} \end{array}$$

(2) Inventory Valuation Adjustment: (Inventory Index = 1.0088)

$$\begin{array}{rcl} \text{Inventory at 1/7/72} & & 16,652 \\ \text{Inventory in 1972-73 values} & & 16,799 \\ \text{Adjustment} & & \underline{\underline{146}} \end{array}$$

## APPENDIX 6.2 (CONTD.)

### COMPANY 6 - BONDS COATS PATONS LIMITED.

<u>CURRENT OPERATING PROFIT:</u>	<u>\$000</u>	<u>\$000</u>
Operating profit before tax (as per IAC definition)		10,519
less current depreciation adjustment	554	
stock valuation adjustment	242	796
Current Operating Profit (before tax)		<u>9,722</u>

<u>CURRENT FUNDS EMPLOYED:</u>	Net Current Value <u>\$000</u>	Net Original Cost <u>\$000</u>	<u>\$000</u>
Funds employed (as per IAC Definition)			67,245
plus adjustment to restate assets at 1972-73 current value:			
Land and Buildings	13,373	10,244	3,128
Plant, Machinery and Equipment	13,256	10,907	2,349
Current Funds Employed			<u>72,723</u>

$$\text{RATIO} \quad \frac{\text{Current Operating Profit}}{\text{Current Funds Employed}} = 13.37\%$$

#### OPERATING PROFIT ADJUSTMENTS (above)

(1) Current Depreciation Adjustment:

$$\begin{array}{rcl} \text{Current Depreciation} & = & 2,139 \times \frac{26,629}{21,152} \\ & & 2,693 \\ \text{Adjustment} & & \underline{\underline{554}} \end{array}$$

(2) Inventory Valuation Adjustment: (Inventory Index = 1.0088)

$$\begin{array}{rcl} \text{Inventory at 1/1/73} & & 27,571 \\ \text{Inventory in 1972-73 values} & & \underline{27,813} \\ \text{Adjustment} & & \underline{\underline{242}} \end{array}$$

## APPENDIX 6.2 (CONTD.)

### COMPANY 7 - CONTAINERS LIMITED.

<u>CURRENT OPERATING PROFIT:</u>	<u>\$000</u>	<u>\$000</u>
Operating profit before tax (as per IAC definition)		8,420
less current depreciation adjustment	848	
stock valuation adjustment	210	1,058
Current Operating Profit (before tax)		<u>7,362</u>

<u>CURRENT FUNDS EMPLOYED:</u>	Net Current Value <u>\$000</u>	Net Original Cost <u>\$000</u>	<u>\$000</u>
Funds employed (as per IAC Definition)			64,068
plus adjustment to restate assets at 1972-73 current value:			
Land and Buildings	20,483	15,100	5,383
Machinery, Plant, Furniture and Equipment	28,620	23,372	5,248
Current Funds Employed			<u>74,700</u>

$$\text{RATIO } \frac{\text{Current Operating Profit}}{\text{Current Funds Employed}} = 9.86\%$$

#### OPERATING PROFIT ADJUSTMENTS (above)

(1) Current Depreciation Adjustment:

$$\text{Current Depreciation} = 3,069 \times \frac{49,103}{38,472}$$

3,917

Adjustment

848

(2) Inventory Valuation Adjustment: (Inventory Index = 1.0088)

Inventory at 1/7/72 23,863

Inventory in 1972-73 values 24,073

Adjustment

210

## APPENDIX 6.2 (CONTD.)

### COMPANY 8 - ASSOCIATED PULP AND PAPER MILLS LIMITED

<u>CURRENT OPERATING PROFIT:</u>	<u>\$000</u>	<u>\$000</u>
Operating profit before tax (as per IAC definition)		10,732
less current depreciation adjustment	1,863	
stock valuation adjustment	221	2,084
Current Operating Profit (before tax)		<u>8,648</u>

<u>CURRENT FUNDS EMPLOYED:</u>	Net Current Value <u>\$000</u>	Net Original Cost <u>\$000</u>	<u>\$000</u>
Funds employed (as per IAC Definition)			93,339
plus adjustment to restate assets at 1972-73 current value:			
Land and houses (etc.)	11,468	8,633	2,834
Buildings, Plant, Equipment and Furniture	69,155	54,309	14,846
Wesley Vale Mill Expenditure	2,623	-	2,623
Current Funds Employed			<u>113,644</u>

$$\text{RATIO } \frac{\text{Current Operating Profit}}{\text{Current Funds Employed}} = 7.61\%$$

#### OPERATING PROFIT ADJUSTMENTS (above)

(1) Current Depreciation Adjustment:

$$\text{Current Depreciation} = 5,776 \times \frac{83,247}{62,942}$$

7,639

Adjustment

1,863

(2) Inventory Valuation Adjustment: (Inventory Index = 1.0088)

Inventory at 1/7/72 25,114

Inventory at 1972-73 values 25,335

Adjustment

221

## APPENDIX 6 (CONTD.)

### 6.3 CALCULATION OF GROSS CURRENT VALUES FOR FIXED ASSETS\*

	COMPANY 1 - AUSTRALIAN PAPER MANUFACTURERS LIMITED											Total Current Value
	1963 \$000	1964 \$000	1965 \$000	1966 \$000	1967 \$000	1968 \$000	1969 \$000	1970 \$000	1971 \$000	1972 \$000	1973 \$000	\$000
<u>LAND</u>												
Gross Book Value	11,615	11,900	12,887	13,335	14,236	15,608	16,072	16,817	18,370	20,011	21,084**	
Difference		284	987	448	900	1,371	464	745	1,553	1,641	1,073	
Current Value	18,025	432	1,445	635	1,236	1,810	587	899	1,764	1,737	1,073	29,648
<u>BUILDINGS</u>												
Gross Book Value	24,650	24,280	24,927	27,851	29,664	32,437	33,655	36,075	36,605	40,601	41,173	
Difference		(369)	647	2,923	1,812	2,772	1,218	2,420	530	3,996	572	
Current Value	38,378	(564)	941	4,190	2,489	3,705	1,554	2,952	607	4,267	572	59,093
<u>PLANT AND EQUIPMENT</u>												
Gross Book Value	80,866	83,082	90,609	103,275	121,646	134,944	147,007	162,328	175,215	194,726	207,950	
Difference		2,215	7,527	12,665	18,370	13,298	12,063	15,321	12,887	19,511	13,224	
Current Value	112,784	3,068	10,231	16,775	23,843	16,899	14,825	18,124	14,276	20,230	13,224	264,283
<u>STANDING TIMBER (etc.)</u>												
Gross Book Value	1,934	2,820	3,851	5,088	6,617	7,926	9,225	10,712	11,842	13,636	15,543	
Difference		886	1,031	1,236	1,529	1,308	1,299	1,487	1,130	1,794	1,907	
Current Value	3,001	1,347	1,509	1,752	2,099	1,726	1,645	1,795	1,283	1,900	1,907	19,969

\* For presentation purposes, all amounts have been rounded down by deleting the last three figures.

\*\* excludes revaluations.

# APPENDIX 6.3 (CONTD.)

## COMPANY 2 - S.A. BREWING CO.

	1963 \$000	1964 \$000	1965 \$000	1966 \$000	1967 \$000	1968 \$000	1969 \$000	1970 \$000	1971 \$000	1972 \$000	1973 \$000	Total Current Value \$000
<u>FREEHOLD PROPERTIES</u>												
Gross Book Value		16,164	17,205	18,713	20,927	21,755	22,291	23,587	25,014	26,205	27,340	
Difference			1,040	1,508	2,213	828	535	1,295	1,427	1,190	1,135	
Current Value		24,690	1,515	2,161	3,040	1,106	683	1,581	1,636	1,271	1,135	38,821
<u>PLANT, FURNITURE AND EQUIPMENT</u>												
Gross Book Value		2,704	3,096	3,486	4,044	4,614	5,117	5,765	6,422	6,899	7,429	
Difference			391	390	558	569	503	648	656	476	530	
Current Value		3,745	531	516	724	723	618	767	727	494	530	9,380

### APPENDIX 6.3 (CONTD.)

#### COMPANY 3 - CASCADE BREWERY COMPANY LIMITED

	1963 \$000	1964 \$000	1965 \$000	1966 \$000	1967 \$000	1968 \$000	1969 \$000	1970 \$000	1971 \$000	1972 \$000	1973 \$000	Total Current Value \$000
<u>FREEHOLD PROPERTIES</u>												
Gross Book Value	4,727	4,902	5,517	5,666	6,263	6,920	7,168	7,430	7,685	8,670	9,585*	
Difference		174	615	148	596	657	247	262	254	984	915	
Current Value	7,360	266	895	212	819	878	315	320	292	1,051	915	13,329
<u>PLANT AND EQUIPMENT</u>												
Gross Book Value	3,356	3,815	3,889	4,258	4,144	5,270	6,179	6,909	7,298	8,410	9,772	
Difference		458	74	369	(114)	1,126	908	730	389	1,111	1,362	
Current Value	4,681	635	100	489	(187)	1,431	1,116	863	431	1,152	1,362	12,077

\* excludes revaluations.

### APPENDIX 6.3 (CONTD.)

#### COMPANY 4 - BRADMILL INDUSTRIES LIMITED

	1963 \$000	1964 \$000	1965 \$000	1966 \$000	1967 \$000	1968 \$000	1969 \$000	1970 \$000	1971 \$000	1972 \$000	1973 \$000	Total Current Value \$000
<u>PLANT AND EQUIPMENT</u>												
Gross Book Value	22,675	23,018	23,383	24,393	25,105	25,688	27,197	46,460	47,041	47,650	46,203	
Difference		343	364	1,010	711	583	1,508	19,262	581	609	(1,446)	
Current Value	31,625	475	496	1,338	923	741	1,854	22,788	643	631	(1,446)	60,070
<u>LAND AND BUILDINGS</u>												
Gross Book Value	8,690	8,723	8,752	8,753	8,792	8,844	9,536	20,536	20,401	20,074	24,165*	
Difference		32	28	1	39	51	691	11,000	(134)	(326)	4,090	
Current Value	13,530	50	42	1	53	69	882	13,420	(154)	(349)	4,090	31,637

\* excludes revaluations.



# APPENDIX 6.3 (CONTD.)

## COMPANY 5 - J. GADSDEN AUSTRALIA LIMITED

	1963 \$000	1964 \$000	1965 \$000	1966 \$000	1967 \$000	1968 \$000	1969 \$000	1970 \$000	1971 \$000	1972 \$000	1973 \$000	Total Current Value \$000
<u>LAND AND BUILDINGS</u>												
Gross Book Value	5,874	6,162	6,107	6,168	6,305	6,541	6,702	7,661	8,171	8,847	9,275	
Difference		287	(54)	60	137	236	160	959	509	676	423	
Current Value	9,146	438	(78)	86	188	315	205	1,170	584	721	423	13,206
<u>PLANT AND EQUIPMENT</u>												
Gross Book Value	13,812	15,410	15,889	16,844	17,972	19,484	20,273	21,726	23,426	26,376	31,119	
Difference	-	1,598	478	954	1,128	1,512	788	1,453	1,700	2,949	4,742	
Current Value	19,264	2,213	650	1,264	1,464	1,921	969	1,719	1,883	3,058	4,742	39,152

# APPENDIX 6.3 (CONTD.)

## COMPANY 6 - BONDS COATS PATONS LIMITED

	1963 \$000	1964 \$000	1965 \$000	1966 \$000	1967 \$000	1968 \$000	1969 \$000	1970 \$000	1971 \$000	1972 \$000	1973 \$000	Total Current Value \$000
<u>LAND AND BUILDINGS</u>												
Gross Book Value	3,388	4,332	4,409	4,270	5,340*	5,032*	5,364*	5,503*	11,398*	11,442*	11,646*	
Difference		944	76	(202)	1,070	(308)	332	139	5,894	44	204	
Current Value	5,275	1,441	111	(289)	1,469	(411)	423	170	6,760	47	204	15,202
<u>PLANT, MACHINERY AND EQUIPMENT</u>												
Gross Book Value	5,841	6,850	8,132	8,527	11,844	12,446	13,058	14,603	26,658	28,003	29,540	
Difference		1,009	1,281	394	3,317	601	612	1,544	12,054	1,345	1,537	
Current Value	8,146	1,398	1,742	522	4,305	764	752	2,161	13,354	1,394	1,537	36,080

\* excludes revaluations.

# APPENDIX 6.3 (CONTD.)

## COMPANY 7 - CONTAINERS LIMITED

	1963 \$000	1964 \$000	1965 \$000	1966 \$000	1967 \$000	1968 \$000	1969 \$000	1970 \$000	1971 \$000	1972 \$000	1973 \$000	Total Current Value \$000
<u>LAND AND BUILDINGS</u>												
Gross Book Value	7,414	7,538	8,057	8,636	8,506	8,878*	9,874*	11,339*	14,295*	15,131*	16,399*	
Difference		124	518	578	(130)	372	996	1,464	2,955	836	1,268	
Current Value	11,543	189	755	829	(178)	497	1,271	1,786	3,389	892	1,268	22,245
<u>MACHINERY, PLANT, FURNITURE AND EQUIPMENT</u>												
Gross Book Value	13,969	14,685	15,646	16,725	18,563	20,290	23,293	28,049	30,893	39,696	43,162	
Difference		716	960	1,079	1,837	1,726	3,002	4,756	2,844	8,802	3,465	
Current Value	19,483	991	1,306	1,429	2,385	2,194	3,693	5,626	3,151	9,127	3,465	52,855

\* excludes revaluations.

# APPENDIX 6.3 (CONTD.)

## COMPANY 8 - ASSOCIATED PULP AND PAPER MILLS LIMITED

	1963 \$000	1964 \$000	1965 \$000	1966 \$000	1967 \$000	1968 \$000	1969 \$000	1970 \$000	1971 \$000	1972 \$000	1973 \$000	Total Current Value \$000
<u>LAND AND HOUSES (ETC.)</u>												
Gross Book Value	3,779	4,203	4,545	5,128	5,842	7,025	6,044	6,339	8,091	8,412	10,382	
Difference		424	342	583	713	1,183	(980)	295	1,752	320	1,970	
Current Value	5,864	644	501	826	979	1,561	(1,242)	356	1,990	399	1,970	13,792
<u>BUILDINGS, PLANT EQUIPMENT AND FURNITURE</u>												
Gross Book Value	49,839	52,600	56,144	58,509	59,843	61,631	60,999	61,635	106,400	108,435	116,456	
Difference		2,761	3,543	2,364	1,333	1,788	(631)	636	44,764	2,034	8,020	
Current Value	71,868	3,939	4,921	3,210	1,762	2,310	(786)	760	50,154	2,129	8,020	143,292
<u>WESLEY VALE MILL</u>												
Gross Book Value							9,274	20,290	3,923	7,538		
Difference								11,015	(16,367)	3,615	(7,538)	
Current Value							11,544	13,171	(18,337)	3,784	(7,538)	2,623

APPENDIX 6 (CONT.)

6.4 CALCULATION OF NET CURRENT VALUES FOR FIXED ASSETS\*

	A. P. M. \$000	S. A. Brewing \$000	Cascade \$000	Bradmill \$000	Gadsden \$000	Bonds \$000	Containers \$000	A. P. P. M. \$000
<u>LAND</u>								
Gross Current Value	54,533(Directors' Valuation)							\$13,792
Provision for Depreciation (1972/73 current value)	1,128							13,792x1,749/10,382 = 2,323
Net Current Value	<u>53,405</u>							<u>11,468</u>
<u>BUILDINGS (including plant and equipment for A.P.P.M.)</u>								
Gross Current Value	59,093							148,292
Provision for Depreciation (1972/73 current value)	59,093x16,135/41,173 = 23,157							148,292x62,147/116,456 = 79,136
Net Current Value	<u>35,935</u>							<u>69,155</u>
<u>LAND AND BUILDINGS</u>								
Gross Current Value		38,821	13,329	31,637	13,206	15,202	22,245	
Provision for Depreciation (1972/73 current value)		38,821 x 3,946/27,304 = 5,610	-	31,637x3,243/28,441 = 3,607	13,206x1,104/9,275 = 1,572	15,202x1,401/11,646 = 1,829	22,245x1,299/16,399 = 1,762	
Net Current Value		<u>33,211</u>	<u>13,329</u>	<u>28,029</u>	<u>11,634</u>	<u>13,373</u>	<u>20,483</u>	
<u>PLANT &amp; EQUIPMENT</u>								
Gross Current Value	264,283	9,380	12,077	60,070	39,152	36,080	52,855	
Provision for Depreciation (1972/73 current value)	264,283x111,172/207,950 =141,288	9,380x5,078/7,429 =6,411	12,077x4,204/9,772 = 5,195	60,070x30,292/46,203 = 39,383	39,152x15,742/31,119 =19,806	36,080x18,687/29,540 = 22,824	52,855x19,790/43,162 = 24,234	
Net Current Value	<u>122,995</u>	<u>2,968</u>	<u>6,881</u>	<u>20,686</u>	<u>19,345</u>	<u>13,256</u>	<u>28,620</u>	
<u>OTHER FIXED ASSETS</u>								
Gross Current Value	19,969		92,956					2,623
Provision for Depreciation (1972/73 current value)	19,969x500/15,543 = 642		-					-
Net Current Value	<u>19,326</u>		<u>92,956</u>					<u>2,623</u>
* For presentation purposes, all amounts have been rounded down by deleting the last three figures.								

## APPENDIX 7     CURRENT VALUE GUIDEPOST SERIES USING RESERVE BANK DATA

### 7.1     CALCULATION OF NET CURRENT VALUES FOR FIXED ASSETS

	1962-63 \$m	1963-64 \$m	1964-65 \$m	1965-66 \$m	1966-67 \$m	1967-68 \$m	1968-69 \$m	1969-70 \$m	1970-71 \$m	1971-72 \$m	1972-73 \$m
Net fixed assets at beginning	2630.0	3062.86	3232.99	3582.69	3940.27	4768.83	5064.45	5526.46	6076.05	6732.38	7459.05
Index*	1.1034	1.0107	1.0273	1.0230	1.0270	1.0232	1.0380	1.0409	1.0672	1.0734	1.0467
Net fixed assets at beginning (at "current prices")	2901.85	3095.64	3321.24	3664.96	4046.50	4879.43	5256.77	5752.71	6484.47	7206.07	7807.60
add net purchases	387.40	371.80	547.20	580.10	542.80	591.10	671.80	784.10	904.10	861.80	737.40
	3289.25	3467.44	3868.44	4245.06	4589.30	5470.53	5928.57	6536.81	7388.57	8067.87	8545.00
less current depreciation	235.57	258.71	294.93	311.14	348.35	413.59	449.36	501.80	582.35	648.51	723.11
	3053.68	3208.73	3573.51	3933.92	4240.95	5056.94	5479.21	6035.01	6806.22	7419.36	7821.89
add takeovers	9.18	24.26	9.18	6.36	11.70	7.51	47.25	41.04	46.75	39.69	88.47
	3062.86	3232.99	3582.69	3940.27	4252.65	5064.45	5526.46	6076.05	6852.97	7459.05	7910.36

\* For presentation purposes, the index (Private Gross Fixed Capital Expenditure - excluding dwellings) used throughout Appendix 7 has been rounded to the nearest four decimal places. The results reflect accuracy to six decimal places.

## APPENDIX 7.1 (CONTD.)

### CALCULATION OF CURRENT DEPRECIATION

	1962-63 \$m	1963-64 \$m	1964-65 \$m	1965-66 \$m	1966-67 \$m	1967-68 \$m	1968-69 \$m	1969-70 \$m	1970-71 \$m	1971-72 \$m	1972-73 \$m
Accounting Depreciation	213.50	235.10	264.10	277.30	307.80	363.30	386.50	423.40	472.00	507.00	558.30
Net Current Value at beg.	<u>2901.85</u>	<u>3095.64</u>	<u>3321.24</u>	<u>3664.96</u>	<u>4046.50</u>	<u>4879.43</u>	<u>5256.77</u>	<u>5752.71</u>	<u>6484.47</u>	<u>7206.07</u>	<u>7807.60</u>
Net Original Cost at beg.	2630.00	2813.08	2974.03	3266.31	3575.45	4286.08	4521.39	4853.94	5255.68	5633.62	6028.11
Current Depreciation	235.57	258.71	294.93	311.14	348.35	413.59	449.36	501.80	582.35	648.51	723.11

## APPENDIX 7 (CONTD.)

### 7.2 CALCULATION OF NET HISTORICAL COSTS FOR FIXED ASSETS

	1962-63 \$m	1963-64 \$m	1964-65 \$m	1965-66 \$m	1966-67 \$m	1967-68 \$m	1968-69 \$m	1969-70 \$m	1970-71 \$m	1971-72 \$m	1972-73 \$m
Net fixed assets at beginning	2630.00	2813.08	2974.03	3266.31	3575.45	4286.08	4521.39	4853.94	5255.68	5633.62	6028.11
add net purchases	387.40	371.80	547.20	580.10	542.80	591.10	671.80	784.10	904.10	861.80	737.40
	3017.40	3184.44	3521.23	3846.41	4118.25	4877.18	5193.19	5638.04	6159.78	6495.42	6765.51
less depreciation	213.50	235.10	264.10	277.30	307.80	363.30	386.50	423.40	472.00	507.00	558.30
	2803.90	2949.78	3257.13	3569.11	3810.45	4513.88	4806.69	5214.64	5687.78	5988.42	6207.21
add takeovers	9.18	24.25	9.18	6.345	11.70	7.51	47.25	41.04	46.75	39.69	88.47
	2813.08	2974.03	3266.31	3575.45	3822.15	4521.39	4853.94	5255.68	5734.53	6028.11	6295.68



APPENDIX 7 (CONTD.)

7.3 CALCULATION OF ADJUSTED NET PROFIT (BEFORE TAXATION)

	1962-63 \$m	1963-64 \$m	1964-65 \$m	1965-66 \$m	1966-67 \$m	1967-68 \$m	1968-69 \$m	1969-70 \$m	1970-71 \$m	1971-72 \$m	1972-73 \$m
Net Profit before taxation	439.80	506.40	564.90	554.70	611.30	754.20	850.30	960.80	1017.50	1052.80	1288.10
Less Depreciation adjustment:											
current depreciation	235.57	258.71	294.93	311.14	348.35	413.59	449.36	501.80	582.35	648.51	723.11
less conventional depreciation	213.50	22.07	235.10	23.61	264.10	30.83	277.30	33.84	307.80	40.55	363.30
	50.29	386.50	62.86	423.40	78.40	472.00	110.35	507.00	141.51	558.30	164.81
	417.73	482.79	534.07	520.86	570.75	703.91	787.44	882.40	907.15	911.29	1123.29
less inventory adjustment:											
opening inventory	1218.10	1284.30	1410.80	1605.20	1672.40	1895.10	2051.00	2241.60	2430.40	2622.70	2695.20
inventory index	1.0042	1.0013	1.0023	1.0049	1.0025	1.0041	1.0057	1.0051	1.0025	1.0071	1.0088
opening inventory at current value	1223.21	5.12	1285.96	1.67	1414.04	3.24	1613.06	7.86	1676.58	4.18	1902.87
	7.77	2062.69	11.69	2253.03	11.43	2436.47	6.07	2641.32	18.62	2718.92	23.72
Adjusted net profit before taxation	412.61	481.12	530.83	513.00	566.57	696.14	775.75	870.97	901.08	892.67	1099.57

APPENDIX 7 (CONTD.)

7.4 CALCULATION OF NET PROFIT BEFORE TAX/TOTAL ASSETS ADJUSTED SERIES

	1962-63 \$m	1963-64 \$m	1964-65 \$m	1965-66 \$m	1966-67 \$m	1967-68 \$m	1968-69 \$m	1969-70 \$m	1970-71 \$m	1971-72 \$m	1972-73 \$m
Adjusted Net Fixed Assets (at current value)	3062.86	3232.99	3582.69	3940.27	4252.65	5064.45	5526.46	6076.05	6852.97	7459.05	7910.36
Other Assets	2749.70	3024.80	3327.70	3483.70	3696.40	4510.10	5168.00	5832.70	6406.20	6703.80	7456.10
Adjusted Total Assets (at current value)	5812.56	6257.79	6910.39	7423.97	7949.05	9574.55	10694.46	11908.75	13259.17	14162.85	15366.46
Adjusted Net Profit Before Tax	412.61	481.12	530.83	513.00	566.57	696.14	775.75	870.97	901.08	892.67	1099.57
Adjusted Total Assets	5812.56 = 7.10%	6257.79 = 7.69%	6910.39 = 7.68%	7423.97 = 6.91%	7949.05 = 7.13%	9574.55 = 7.27%	10694.46 = 7.25%	11908.75 = 7.31%	13259.17 = 6.80%	14162.85 = 6.30%	15366.46 = 7.16%

APPENDIX 8      RESTATEMENT OF COMPANY DATA FOR COMPARISON WITH ADJUSTED RESERVE BANK GUIDEPOST SERIES\*

8.1      CALCULATION OF NET CURRENT VALUES FOR FIXED ASSETS

COMPANY 1      -      AUSTRALIAN PAPER MANUFACTURERS LIMITED

	1962-63 \$000	1963-64 \$000	1964-65 \$000	1965-66 \$000	1966-67 \$000	1967-68 \$000	1968-69 \$000	1969-70 \$000	1970-71 \$000	1971-72 \$000	1972-73 \$000
<u>NET CURRENT VALUES FOR FIXED ASSETS</u>											
Net fixed assets at beginning	67,594	75,281	71,995	76,669	88,105	121,451	132,900	141,901	154,725	166,366	188,869
Index	1.1034	1.0107	1.0273	1.0230	1.0270	1.0232	1.0380	1.0409	1.0672	1.0704	1.0467
Net fixed assets at beginning (at current prices)	74,581	76,087	73,960	78,429	90,481	124,268	137,947	147,711	165,125	178,072	197,694
add net purchases	6,318	3,016	10,193	17,274	22,613	18,750	15,044	19,973	16,100	26,942	16,776
	82,133	79,104	84,153	95,703	113,094	143,018	152,991	167,684	181,225	205,014	214,470
less current depreciation	6,852	7,108	7,484	7,597	8,357	10,118	11,090	12,958	14,856	16,145	16,984
	75,281	71,995	76,669	88,105	121,451	132,900	141,901	154,725	166,366	188,869	197,486
<u>CURRENT DEPRECIATION</u>											
Accounting Depreciation	6,210	6,419	6,751	6,890	7,665	8,029	8,863	10,391	11,215	11,815	12,891
Net current value of fixed assets at beginning	74,581	76,087	73,960	78,429	90,481	124,268	137,947	147,711	165,125	178,072	197,694
Net original cost value of fixed assets at beginning	67,594	68,712	66,712	71,131	82,988	98,611	110,246	118,443	124,632	130,310	150,051
Current Depreciation	6,852	7,108	7,484	7,597	8,357	10,118	11,090	12,958	14,856	16,145	16,984
<u>NET PURCHASES</u>											
Land	502	284	987	448	900	1,371	464	745	1,553	1,641	1,073
Buildings	523	(369)	647	2,923	1,812	2,772	1,218	2,420	530	3,996	572
Plant and Equipment	4,613	2,215	7,527	12,665	18,370	13,298	12,063	15,321	12,897	19,511	13,224
Standing Timber (etc.)	678	886	1,031	1,236	1,529	1,308	1,299	1,487	1,130	1,794	1,907
	6,318	3,016	10,193	17,274	22,613	18,750	15,044	19,973	16,100	26,942	16,776

\* For presentation purposes, all amounts in Appendix 8 have been rounded down by deleting the last three figures. The index has been rounded to the nearest four decimal places.

# APPENDIX 8.1 (CONTD.)

## COMPANY 2 - S.A. BREWING HOLDINGS LIMITED

	1962-63 \$000	1963-64 \$000	1964-65 \$000	1965-66 \$000	1966-67 \$000	1967-68 \$000	1968-69 \$000	1969-70 \$000	1970-71 \$000	1971-72 \$000	1972-73 \$000
<u>NET CURRENT VALUES FOR FIXED ASSETS</u>											
Net fixed assets at beginning			17,088	19,361	20,872	23,389	24,467	25,536	27,568	30,440	33,102
Index			1.0935	1.0230	1.0270	1.0232	1.0380	1.0409	1.0672	1.0704	1.0467
Net fixed assets at beginning (at current prices)			18,686	19,806	21,435	23,929	25,396	26,581	29,421	32,582	34,649
add net purchases			1,432	1,898	2,771	1,397	1,038	1,944	2,083	1,667	1,665
			20,118	21,704	24,207	25,327	26,434	28,526	31,505	34,249	36,314
less current depreciation			756	832	817	860	898	957	1,064	1,147	1,442
			19,361	20,872	23,389	24,467	25,536	27,568	30,440	33,102	34,871
<u>CURRENT DEPRECIATION</u>											
Accounting Depreciation			692	749	723	756	766	790	835	857	1,047
Net current value of fixed assets at beginning			18,686	19,806	21,435	23,929	25,396	26,581	29,421	32,582	34,649
Net original cost value of fixed assets at beginning			17,088	17,828	18,977	21,025	21,667	21,939	23,093	24,341	25,151
Current Depreciation			756	832	817	860	898	957	1,064	1,147	1,442
<u>NET PURCHASES</u>											
Freehold Properties			1,040	1,508	2,213	828	535	1,295	1,427	1,190	1,135
Plant and Equipment			391	390	558	569	503	648	656	476	530
			1,432	1,898	2,771	1,397	1,038	1,944	2,083	1,667	1,665

# APPENDIX 8.1 (CONTD.)

## COMPANY 3 - CASCADE BREWERY COMPANY LIMITED

	1962-63 \$000	1963-64 \$000	1964-65 \$000	1965-66 \$000	1966-67 \$000	1967-68 \$000	1968-69 \$000	1969-70 \$000	1970-71 \$000	1971-72 \$000	1972-73 \$000
<u>NET CURRENT VALUES FOR FIXED ASSETS</u>											
Net fixed assets at beginning	6,653	7,671	8,125	8,760	9,219	9,663	11,365	12,569	13,660	14,724	17,257
Index	1.1034	1.0107	1.0273	1.0230	1.0270	1.0232	1.0380	1.0409	1.0672	1.0704	1.0467
Net fixed assets at beginning (at current prices)	7,341	7,753	8,347	8,961	9,467	9,887	11,797	13,084	14,578	15,760	18,064
add net purchases	561	633	689	517	482	1,783	1,156	992	644	2,096	2,277
	7,902	8,386	9,036	9,479	9,949	11,671	12,953	14,077	15,223	17,857	20,341
less current depreciation	231	261	276	260	286	305	383	416	438	599	618
	7,671	8,125	8,760	9,219	9,663	11,365	12,569	13,660	14,724	17,257	19,723
<u>CURRENT DEPRECIATION</u>											
Accounting Depreciation	209	238	249	232	251	266	330	351	339	456	457
Net current value of fixed assets at beginning	7,341	7,753	8,347	8,961	9,467	9,887	11,797	13,084	14,578	15,760	18,064
Net original cost value of fixed assets at beginning	6,653	7,065	7,552	7,997	8,312	8,635	10,155	11,028	11,693	11,998	13,350
Current Depreciation	231	261	276	260	286	305	383	416	438	599	618
<u>NET PURCHASES</u>											
Freehold Properties	298	174	615	148	596	657	247	262	254	984	915
Plant and Equipment	262	458	74	369	(114)	1,126	908	730	389	1,111	1,362
	561	633	689	517	482	1,783	1,156	992	644	2,096	2,277

# APPENDIX 8.1 (CONTD.)

## COMPANY 4 - BRADMILL INDUSTRIES LIMITED

	1962-63 \$000	1963-64 \$000	1964-65 \$000	1965-66 \$000	1966-67 \$000	1967-68 \$000	1968-69 \$000	1969-70 \$000	1970-71 \$000	1971-72 \$000	1972-73 \$000
<u>NET CURRENT VALUES FOR FIXED ASSETS</u>											
Net fixed assets at beginning	18,558	21,422	20,652	20,037	19,991	19,514	18,786	19,906	48,095	48,097	47,993
Index	1.1034	1.0107	1.0273	1.0230	1.0270	1.0232	1.0380	1.0409	1.0672	1.0704	1.0467
Net fixed assets at beginning (at current prices)	20,477	21,652	21,216	20,497	20,530	19,967	19,500	20,721	51,328	51,482	50,235
add net purchases	2,113	376	393	1,011	750	634	2,200	30,263	446	282	2,643
	22,590	22,028	21,610	21,509	21,280	20,602	21,701	50,984	51,774	51,764	52,879
less current depreciation	1,167	1,375	1,572	1,518	1,765	1,815	1,794	2,889	3,676	3,771	3,674
	21,422	20,652	20,037	19,991	19,514	18,786	19,906	48,095	48,097	47,993	49,205
<u>CURRENT DEPRECIATION</u>											
Accounting Depreciation	1,058	1,297	1,460	1,387	1,590	1,617	1,608	2,519	2,519	2,520	2,717
Net current value of fixed assets at beginning	20,477	21,652	21,216	20,497	20,530	19,967	19,500	20,721	51,328	51,482	50,235
Net original cost value of fixed assets at beginning	18,558	20,418	19,701	18,739	18,491	17,792	17,474	18,071	35,174	34,416	37,150
Current Depreciation	1,167	1,375	1,572	1,518	1,765	1,815	1,794	2,889	3,676	3,771	3,674
<u>NET PURCHASES</u>											
Plant and Equipment	1,236	343	364	1,010	711	583	1,508	19,262	581	609	(1,446)
Land and Buildings	877	32	28	1	39	51	691	11,000	(134)	(326)	4,090
	2,113	376	393	1,011	750	634	2,200	30,263	446	282	2,643

# APPENDIX 8.1 (CONTD.)

## COMPANY 5 - J. GADSDEN LIMITED

	1962-63 \$000	1963-64 \$000	1964-65 \$000	1965-66 \$000	1966-67 \$000	1967-68 \$000	1968-69 \$000	1969-70 \$000	1970-71 \$000	1971-72 \$000	1972-73 \$000
<u>NET CURRENT VALUES FOR FIXED ASSETS</u>											
Net fixed assets at beginning	13,106	15,151	15,160	14,935	15,199	15,663	16,456	16,585	18,146	19,592	22,362
Index	1.1034	1.0107	1.0273	1.0230	1.0270	1.0232	1.0380	1.0409	1.0672	1.0704	1.0467
Net fixed assets at beginning (at current prices)	14,460	15,313	15,574	15,278	15,609	16,026	17,081	17,264	19,366	20,970	23,407
add net purchases	1,571	1,885	424	1,015	1,265	1,748	949	2,412	2,210	3,625	5,170
	16,032	16,199	15,999	16,293	16,874	17,775	18,031	19,677	21,576	24,596	28,578
less current depreciation	881	1,038	1,063	1,094	1,210	1,318	1,445	1,530	1,984	2,233	2,913
	15,151	15,160	14,935	15,199	15,663	16,456	16,585	18,146	19,592	22,362	25,664
<u>CURRENT DEPRECIATION</u>											
Accounting Depreciation	798	956	1,067	1,087	1,186	1,276	1,357	1,440	1,806	1,953	2,562
Net current value of fixed assets at beginning	14,460	15,313	15,574	15,278	15,609	16,026	17,081	17,264	19,366	20,970	23,407
Net original cost value of fixed assets at beginning	13,106	14,114	15,622	15,183	15,291	15,521	16,044	16,249	17,626	18,336	20,590
Current Depreciation	881	1,038	1,063	1,094	1,210	1,318	1,445	1,530	1,934	2,233	2,913
<u>NET PURCHASES</u>											
Plant and Equipment	1,651	1,598	478	954	1,128	1,512	788	1,453	1,700	2,949	4,742
Land and Buildings	(79)	287	(54)	60	137	236	160	959	509	676	428
	1,571	1,885	424	1,015	1,265	1,748	949	2,412	2,210	3,625	5,170

# APPENDIX 8.1 (CONTD.)

## COMPANY 6 - BONDS COATS PATONS LIMITED

	1962-63 \$000	1963-64 \$000	1964-65 \$000	1965-66 \$000	1966-67 \$000	1967-68 \$000	1968-69 \$000	1969-70 \$000	1970-71 \$000	1971-72 \$000	1972-73 \$000
<u>NET CURRENT VALUES FOR FIXED ASSETS</u>											
Net fixed assets at beginning	5,580	5,559	6,808	7,475	6,876	10,430	9,589	9,710	10,677	27,255	27,619
Index	1.1034	1.0107	1.0273	1.0230	1.0270	1.0232	1.0380	1.0409	1.0672	1.0704	1.0467
Net fixed assets at beginning (at current prices)	6,157	5,619	6,994	7,647	7,062	10,672	9,953	10,107	11,395	29,173	28,909
add net purchases	122	1,953	1,358	192	4,387	295	944	1,684	17,949	1,389	1,741
	6,279	7,572	8,353	7,839	11,449	10,968	10,897	11,792	29,345	30,562	30,651
less current depreciation	719	764	877	962	1,018	1,378	1,187	1,114	2,089	2,943	3,138
	5,559	6,808	7,475	6,876	10,430	9,589	9,710	10,677	27,255	27,619	27,512
<u>CURRENT DEPRECIATION</u>											
Accounting Depreciation	652	710	822	900	971	1,140	1,047	977	1,887	2,038	2,139
Net current value of fixed assets at beginning	6,157	5,619	6,994	7,647	7,062	10,672	9,953	10,107	11,395	29,173	28,909
Net original cost value of fixed assets at beginning	5,580	5,226	6,559	7,153	6,734	8,823	8,778	8,871	10,293	20,199	19,709
Current Depreciation	719	764	877	962	1,018	1,378	1,187	1,114	2,089	2,943	3,138
<u>NET PURCHASES</u>											
Land and Buildings	9,107 (62)	944	76	(202)	1,070	(308)	332	139	5,894	44	204
Plant and Machinery	9,229 (63)	1,009	1,281	394	3,317	601	612	1,544	12,054	1,345	1,537
	122	1,953	1,358	192	4,387	295	944	1,684	17,949	1,389	1,741



# APPENDIX 8.1 (CONTD.)

## COMPANY 7 - CONTAINERS LIMITED

	1962-63 \$000	1963-64 \$000	1964-65 \$000	1965-66 \$000	1966-67 \$000	1967-68 \$000	1968-69 \$000	1969-70 \$000	1970-71 \$000	1971-72 \$000	1972-73 \$000
<u>NET CURRENT VALUES FOR FIXED ASSETS</u>											
Net fixed assets at beginning	13,276	15,893	15,619	16,225	16,973	17,737	18,741	21,808	27,064	32,321	41,346
Index	1.1034	1.0107	1.0273	1.0230	1.0270	1.0232	1.0380	1.0409	1.0672	1.0704	1.0467
Net fixed assets at beginning (at current prices)	14,648	16,063	16,046	16,597	17,430	18,148	19,453	22,701	28,883	34,595	43,278
add net purchases	2,530	840	1,479	1,659	1,707	2,099	3,998	6,220	5,800	9,638	4,733
	17,179	16,904	17,526	18,256	19,138	20,247	23,452	28,921	34,684	44,234	48,012
less current depreciation	1,285	1,284	1,300	1,283	1,401	1,505	1,643	1,857	2,362	2,887	3,663
	15,893	15,619	16,225	16,973	17,737	18,741	21,808	27,064	32,321	41,346	44,349
<u>CURRENT DEPRECIATION</u>											
Accounting Depreciation	1,165	1,174	1,192	1,174	1,274	1,364	1,467	1,654	2,035	2,403	3,069
Net current value of fixed assets at beginning	14,648	16,063	16,046	16,597	17,430	18,148	19,453	22,701	28,883	34,595	43,278
Net original cost value of fixed assets at beginning	13,276	14,696	14,712	15,181	15,848	16,449	17,365	20,222	24,885	28,793	36,258
Current Depreciation	1,285	1,284	1,300	1,283	1,401	1,505	1,643	1,857	2,362	2,887	3,663
<u>NET PURCHASES</u>											
Land and Buildings	18,853 (62)	124	518	578	(130)	372	996	1,464	2,355	836	1,268
Plant and Equipment	21,383 (63)	716	960	1,079	1,837	1,726	3,002	4,756	2,344	8,802	3,465
	2,530	840	1,479	1,659	1,707	2,099	3,998	6,220	5,800	9,638	4,733

# APPENDIX 8.1 (CONTD.)

## COMPANY 8 - ASSOCIATED PULP AND PAPER MILLS LIMITED

	1962-63 \$000	1963-64 \$000	1964-65 \$000	1965-66 \$000	1966-67 \$000	1967-68 \$000	1968-69 \$000	1969-70 \$000	1970-71 \$000	1971-72 \$000	1972-73 \$000
<u>NET CURRENT VALUES FOR FIXED ASSETS</u>											
Net fixed assets at beginning	31,410	35,394	35,420	36,383	35,910	34,497	34,773	40,535	50,942	79,380	84,214
Index	1.1034	1.0107	1.0273	1.0230	1.0270	1.0232	1.0380	1.0409	1.0672	1.0704	1.0467
Net fixed assets at beginning (at current prices)	34,656	35,773	36,387	37,219	36,878	35,298	36,093	42,195	54,367	84,965	88,149
add net purchases	3,817	3,185	3,886	2,948	2,047	2,971	7,662	11,947	30,149	5,971	2,452
	38,817	38,959	40,273	40,167	38,926	38,269	43,755	54,142	84,516	90,936	90,602
less current depreciation	3,079	3,538	3,890	4,256	4,428	3,496	3,220	3,199	5,136	6,722	7,731
	35,394	35,420	36,383	35,910	34,497	34,773	40,535	50,942	79,380	84,214	82,870
<u>CURRENT DEPRECIATION</u>											
Accounting Depreciation	2,790	3,229	3,509	3,819	3,925	3,091	2,788	2,768	4,335	5,109	5,776
Net current value of fixed assets at beginning	34,656	35,773	36,387	37,219	36,878	35,298	36,093	42,195	54,367	84,965	88,149
Net original cost value of fixed assets at beginning	31,410	32,648	32,832	33,399	32,695	31,214	31,250	36,500	45,901	64,587	65,856
Current Depreciation	3,079	3,538	3,890	4,256	4,428	3,496	3,220	3,199	5,136	6,722	7,731
<u>NET PURCHASES</u>											
Land		424	342	583	713	1,183	(980)	295	1,752	320	1,970
Buildings, Plant and Equipment	49,800 (62)	2,761	3,543	2,364	1,333	1,788	(531)	636	44,764	2,034	8,020
Mill Expenditure	53,618 (63)						9,274	11,015	(16,367)	3,615	(7,538)
	3,817	3,185	3,886	2,948	2,047	2,971	7,662	11,947	30,149	5,971	2,452

APPENDIX 8 RESTATEMENT OF COMPANY DATA FOR COMPARISON WITH ADJUSTED RESERVE BANK GUIDEPOST SERIES (CONTD.)

8.2 CALCULATION OF ADJUSTED NET PROFIT (BEFORE TAX)

COMPANY 1 - AUSTRALIAN PAPER MANUFACTURERS LIMITED

	1962-63 \$000	1963-64 \$000	1964-65 \$000	1965-66 \$000	1966-67 \$000	1967-68 \$000	1968-69 \$000	1969-70 \$000	1970-71 \$000	1971-72 \$000	1972-73 \$000
Net Profit before taxation	8,367	8,810	9,301	9,389	9,593	10,096	12,529	16,915	16,118	17,082	17,755
Less Depreciation adjustment											
Current depreciation	6,852	7,108	7,484	7,597	8,357	10,118	11,090	12,958	14,858	16,145	16,984
less conventional depreciation	6,210	6,419	6,751	6,890	7,665	8,029	8,863	10,391	11,215	11,815	12,891
	7,725	8,121	8,568	8,682	8,901	8,006	10,301	14,347	12,474	12,751	13,661
Less Inventory adjustment											
Opening inventory	13,575	13,579	14,244	17,028	17,096	19,462	19,024	18,262	24,904	29,866	30,896
Inventory index	1.0042	1.0013	1.0023	1.0049	1.0025	1.0041	1.0057	1.0051	1.0025	1.0071	1.0088
Opening inventory at current value	13,632	13,597	14,277	17,111	17,139	19,543	19,132	18,355	24,966	30,078	31,167
Adjusted Net Profit before taxation	7,668	8,103	8,535	8,599	8,859	7,927	10,193	14,254	12,411	12,539	13,390

APPENDIX 8.2 (CONTD.)

COMPANY 2 - S.A. BREWING HOLDINGS LIMITED

	1962-63 \$000	1963-64 \$000	1964-65 \$000	1965-66 \$000	1966-67 \$000	1967-68 \$000	1968-69 \$000	1969-70 \$000	1970-71 \$000	1971-72 \$000	1972-73 \$000
Net Profit before taxation			2,527	3,174	3,109	3,990	3,976	4,383	5,090	5,783	6,679
Less Depreciation adjustment											
Current depreciation			756	832	817	860	898	957	1,064	1,147	1,442
less conventional depreciation			692	64	749	83	723	93	756	104	766
			64				131		167	835	229
			2,463	3,091	3,015	3,885	3,844	4,216	4,861	5,493	6,283
Less Inventory adjustment											
Opening inventory			740	672	873	825		953	1,046	1,153	1,346
Inventory index			1.0023	1.0049	1.0025	1.0041	1.0057	1.0051	1.0025	1.0071	1.0088
Opening inventory at current value			742	1	676	3	875	2	828	3	793
			4				4		958	4	958
			2,461	3,088	3,013	3,882	3,839	4,211	4,858	5,485	6,271
Adjusted Net Profit before taxation											

APPENDIX 8.2 (CONTD.)

COMPANY 3 - CASCADE BREWERY COMPANY LIMITED

	1962-63 \$000	1963-64 \$000	1964-65 \$000	1965-66 \$000	1966-67 \$000	1967-68 \$000	1968-69 \$000	1969-70 \$000	1970-71 \$000	1971-72 \$000	1972-73 \$000
Net Profit before taxation	817	915	995	1,230	1,318	1,305	1,348	1,574	1,909	2,308	2,653
Less Depreciation adjustment											
Current depreciation	231	261	276	260	286	305	383	416	498	599	618
less conventional depreciation	209	21	238	23	249	26	232	28	251	34	266
	209	21	238	23	249	26	232	28	251	34	266
	796	892	969	1,202	1,283	1,266	1,294	1,508	1,811	2,165	2,491
Less Inventory adjustment											
Opening inventory	1,558	1,610	1,608	1,804	1,974	1,517	2,003	1,832	2,064	2,391	3,121
Inventory index	1.0042	1.0013	1.0023	1.0049	1.0025	1.0041	1.0057	1.0051	1.0025	1.0071	1.0088
Opening inventory at current value	1,565	6	1,612	2	1,612	3	1,813	8	1,979	4	1,523
	1,565	6	1,612	2	1,612	3	1,813	8	1,979	4	1,523
Adjusted Net Profit before taxation	789	890	965	1,193	1,278	1,260	1,283	1,499	1,805	2,148	2,464

APPENDIX 8.2 (CONTD.)

COMPANY 4 - BRADHILL INDUSTRIES LIMITED

	1962-63 \$000	1963-64 \$000	1964-65 \$000	1965-66 \$000	1966-67 \$000	1967-68 \$000	1968-69 \$000	1969-70 \$000	1970-71 \$000	1971-72 \$000	1972-73 \$000
Net Profit before taxation	1,127	1,695	2,222	2,162	2,412	3,069	3,461	4,726	4,525	3,556	5,383
Less Depreciation adjustment											
Current depreciation	1,167	1,375	1,572	1,518	1,765	1,815	1,794	2,889	3,676	3,771	3,674
less conventional depreciation	1,058	109	1,297	78	1,460	112	1,387	130	1,590	175	1,617
	197	1,266	275	1,400	1,650	1,703	1,608	186	2,519	369	957
	1,018	1,616	2,109	2,031	2,237	2,871	3,274	4,356	3,368	2,306	4,426
Less Inventory adjustment											
Opening Inventory	7,739	8,682	8,763	10,065	9,804	9,326	10,147	12,091	20,983	22,146	22,334
Inventory index	1.0042	1.0013	1.0023	1.0049	1.0025	1.0041	1.0057	1.0051	1.0025	1.0071	1.0088
Opening inventory at current value	7,771	32	8,694	11	8,783	20	10,114	49	9,829	24	9,365
	38	10,204	57	12,153	61	21,035	52	22,303	157	22,530	196
Adjusted Net Profit before taxation	985	1,605	2,089	1,982	2,212	2,833	3,216	4,295	3,315	2,149	4,230

APPENDIX 8.2 (CONTD.)

COMPANY 5 - J. GADSDEN AUSTRALIA LIMITED

	1962-63 \$000	1963-64 \$000	1964-65 \$000	1965-66 \$000	1966-67 \$000	1967-68 \$000	1968-69 \$000	1969-70 \$000	1970-71 \$000	1971-72 \$000	1972-73 \$000
Net Profit before taxation	1,780	2,662	3,408	3,735	3,782	3,655	3,375	5,514	7,354	6,189	7,681
Less Depreciation adjustment											
Current Depreciation	881	1,038	1,063	1,094	1,210	1,318	1,445	1,530	1,984	2,233	2,913
less conventional depreciation	798	82	956	81	1,067	(3)	1,087	6	1,186	24	1,276
	41	1,357	87	1,440	89	1,806	178	1,953	280	2,562	350
	1,697	2,581	3,411	3,728	3,758	3,613	3,287	5,424	7,176	5,909	7,330
Less Inventory adjustment											
Opening Inventory	6,224	8,291	6,783	8,172	7,615	8,586	9,264	10,179	10,930	14,195	16,652
Inventory index	1.0042	1.0013	1.0023	1.0049	1.0025	1.0041	1.0057	1.0051	1.0025	1.0071	1.0088
Opening inventory at current value	6,250	26	8,301	10	6,798	15	8,212	40	7,634	19	8,621
	35	9,317	52	10,231	51	10,957	27	14,296	100	16,799	146
Adjusted Net Profit before taxation	1,671	2,570	3,395	3,688	3,739	3,578	3,235	5,372	7,149	5,808	7,183

APPENDIX 8.2 (CONTD.)

COMPANY 6 - BONDS COATS PATONS LIMITED

	1962-63 \$000	1963-64 \$000	1964-65 \$000	1965-66 \$000	1966-67 \$000	1967-68 \$000	1968-69 \$000	1969-70 \$000	1970-71 \$000	1971-72 \$000	1972-73 \$000
Net Profit before taxation	1,882	1,879	1,494	2,029	2,652	2,630	2,669	2,743	8,014	8,851	10,443
Less Depreciation adjustment											
Current depreciation	719	764	877	962	1,018	1,378	1,187	1,114	2,089	2,943	3,138
less conventional depreciation	652	67	710	53	822	54	900	62	971	47	1,140
	238	1,047	140	977	136	1,887	202	2,038	905	2,139	998
	1,814	1,826	1,439	1,967	2,605	2,391	2,529	2,606	7,812	7,946	9,444
Less Inventory adjustment											
Opening inventory	4,396	4,669	4,722	5,433	5,365	6,946	7,811	8,457	9,699	23,299	27,571
Inventory index	1.0042	1.0013	1.0023	1.0049	1.0025	1.0041	1.0057	1.0051	1.0025	1.0071	1.0088
Opening inventory at current value	4,415	18	4,675	6	4,733	10	5,460	26	5,379	13	6,975
	28	7,856	44	8,500	43	9,723	24	23,464	165	27,813	242
Adjusted Net Profit before taxation	1,796	1,820	1,428	1,940	2,592	2,363	2,484	2,563	7,788	7,780	9,202



APPENDIX 8.2 (CONTD.)

COMPANY 7 - CONTAINERS' LIMITED

	1962-63 \$000	1963-64 \$000	1964-65 \$000	1965-66 \$000	1966-67 \$000	1967-68 \$000	1968-69 \$000	1969-70 \$000	1970-71 \$000	1971-72 \$000	1972-73 \$000
Net Profit before taxation	2,279	2,348	2,456	3,033	3,325	3,736	3,927	4,418	6,064	6,341	6,792
Less Depreciation adjustment											
Current depreciation	1,285	1,284	1,300	1,283	1,401	1,505	1,643	1,857	2,362	2,887	3,663
less conventional depreciation	1,165	120	1,174	109	1,174	109	1,274	127	1,364	140	1,467
	2,159	2,239	2,348	2,923	3,197	3,595	3,751	4,215	5,737	5,856	6,198
Less Inventory adjustment											
Opening inventory	7,339	10,559	9,459	11,504	10,143	12,656	13,914	15,467	14,279	19,127	23,863
Inventory index	1.0042	1.0013	1.0023	1.0049	1.0025	1.0041	1.0057	1.0051	1.0025	1.0071	1.0088
Opening inventory at current value	7,370	30	10,573	13	9,481	21	11,561	56	10,168	25	12,708
	51	13,994	79	15,545	78	14,315	35	19,263	135	24,073	210
Adjusted Net Profit before taxation	2,128	2,225	2,326	2,867	3,172	3,543	3,671	4,136	5,701	5,721	5,988

APPENDIX 8.2 (CONTD.)

COMPANY 8 - ASSOCIATED PULP AND PAPER MILLS LIMITED

	1962-63 \$000	1963-64 \$000	1964-65 \$000	1965-66 \$000	1966-67 \$000	1967-68 \$000	1968-69 \$000	1969-70 \$000	1970-71 \$000	1971-72 \$000	1972-73 \$000
Net Profit before taxation	4,605	3,931	3,642	5,354	3,800	6,815	7,310	6,570	8,957	5,285	9,575
Less Depreciation adjustment											
Current depreciation	3,079	3,538	3,890	4,256	4,428	3,496	3,220	3,199	5,136	6,722	7,731
less conventional depreciation	2,790	288	3,229	309	3,509	380	3,819	436	3,925	502	3,091
	4,317	3,622	3,262	4,917	3,298	6,410	6,878	6,138	8,157	3,673	7,620
Less Inventory adjustment											
Opening inventory	8,302	9,935	9,842	11,025	12,442	12,130	12,860	14,264	14,912	26,037	25,284
Inventory index	1.0042	1.0013	1.0023	1.0049	1.0025	1.0041	1.0057	1.0051	1.0025	1.0071	1.0088
Opening inventory at current value	8,337	34	9,948	12	9,864	22	11,079	54	12,473	31	12,180
	4,282	3,609	3,239	4,863	3,267	6,360	6,805	6,065	8,120	3,488	7,397
Adjusted Net Profit before taxation	4,282	3,609	3,239	4,863	3,267	6,360	6,805	6,065	8,120	3,488	7,397

APPENDIX 8 RESTATEMENT OF COMPANY DATA FOR COMPARISON WITH ADJUSTED RESERVE BANK GUIDEPOST SERIES. (CONTD.)

8.3 CALCULATION OF ADJUSTED NET PROFIT BEFORE TAX/ADJUSTED TOTAL ASSETS

	1962-63 \$000	1963-64 \$000	1964-65 \$000	1965-66 \$000	1966-67 \$000	1967-68 \$000	1968-69 \$000	1969-70 \$000	1970-71 \$000	1971-72 \$000	1972-73 \$000
COMPANY 1 - AUSTRALIAN PAPER MANUFACTURERS LIMITED											
Adjusted Net Fixed Assets (at current value)	75,281	71,995	76,669	88,105	121,451	132,900	141,901	154,725	166,366	188,869	197,486
Other Assets	31,573	40,956	45,541	49,758	51,712	53,476	58,738	78,262	84,282	90,571	94,430
Adjusted Total Assets (at current value)	106,855	112,952	122,210	137,864	173,164	186,376	200,639	232,987	250,648	279,440	291,916
Adjusted Net Profit before tax Adjusted Total Assets	$\frac{7,668}{106,855} = 7.18\%$	$\frac{8,103}{112,952} = 7.17\%$	$\frac{8,535}{122,210} = 6.98\%$	$\frac{8,599}{137,864} = 6.24\%$	$\frac{8,859}{173,164} = 5.12\%$	$\frac{7,927}{186,376} = 4.25\%$	$\frac{10,193}{200,639} = 5.08\%$	$\frac{14,254}{232,987} = 6.12\%$	$\frac{12,411}{250,648} = 4.95\%$	$\frac{12,539}{279,440} = 4.49\%$	$\frac{13,390}{291,916} = 4.59\%$
COMPANY 2 - S.A. BREWING HOLDINGS LIMITED											
Adjusted Net Fixed Assets (at current value)			19,361	20,872	23,389	24,467	25,536	27,568	30,440	33,102	34,871
Other Assets			5,040	5,650	5,195	6,421	6,479	6,788	9,314	22,183	24,872
Adjusted Total Assets (at current value)			24,401	26,523	28,585	30,888	32,015	34,356	39,754	55,285	59,744
Adjusted Net Profit before tax Adjusted Total Assets			$\frac{2,461}{24,401} = 10.09\%$	$\frac{3,088}{26,523} = 11.64\%$	$\frac{3,013}{28,585} = 10.54\%$	$\frac{3,882}{30,888} = 12.57\%$	$\frac{3,839}{32,015} = 11.99\%$	$\frac{4,211}{34,356} = 12.26\%$	$\frac{4,858}{39,754} = 12.22\%$	$\frac{5,485}{55,285} = 9.92\%$	$\frac{6,271}{59,744} = 10.50\%$

APPENDIX 8.3 (CONTD.)

	1962-63 \$000	1963-64 \$000	1964-65 \$000\$	1965-66 \$000	1966-67 \$000	1967-68 \$000	1968-69 \$000	1969-70 \$000	1970-71 \$000	1971-72 \$000	1972-73 \$000
<b>COMPANY 3 - CASCADE BREWERY LIMITED</b>											
Adjusted Net Fixed Assets (at current value)	7,671	8,125	8,760	9,219	9,663	11,365	12,569	13,660	14,724	17,257	19,723
Other Assets	2,579	2,492	3,046	3,358	4,727	3,672	3,265	3,755	4,287	5,510	5,666
Adjusted Total Assets (at current value)	10,250	10,617	11,806	12,577	14,454	15,038	15,835	17,416	19,012	22,768	25,389
Adjusted Net Profit before tax Adjusted Total Assets	$\frac{789}{10,250} = 7.70\%$	$\frac{890}{10,617} = 8.39\%$	$\frac{965}{11,806} = 8.18\%$	$\frac{1,193}{12,577} = 9.49\%$	$\frac{1,278}{14,454} = 8.85\%$	$\frac{1,260}{15,038} = 8.38\%$	$\frac{1,283}{15,835} = 8.11\%$	$\frac{1,499}{17,416} = 8.61\%$	$\frac{1,805}{19,012} = 9.50\%$	$\frac{2,148}{22,768} = 9.44\%$	$\frac{2,464}{25,389} = 9.71\%$
<b>COMPANY 4 - BRADHILL INDUSTRIES LIMITED</b>											
Adjusted Net Fixed Assets (at current value)	21,422	20,652	20,037	19,991	19,514	18,786	19,906	48,095	48,097	47,993	49,205
Other Assets	13,678	14,305	16,382	16,641	16,429	17,137	19,672	34,474	35,941	36,145	37,695
Adjusted Total Assets (at current value)	35,101	34,958	36,420	36,633	35,944	35,924	39,579	82,569	84,039	84,138	86,900
Adjusted Net Profit before tax Adjusted Total Assets	$\frac{985}{35,101} = 2.81\%$	$\frac{1,605}{34,958} = 4.59\%$	$\frac{2,089}{36,420} = 5.74\%$	$\frac{1,982}{36,633} = 5.41\%$	$\frac{2,212}{35,944} = 6.16\%$	$\frac{2,833}{35,924} = 7.89\%$	$\frac{3,216}{39,579} = 8.13\%$	$\frac{4,295}{82,569} = 5.20\%$	$\frac{3,315}{84,039} = 3.95\%$	$\frac{2,149}{84,138} = 2.55\%$	$\frac{4,230}{86,900} = 4.87\%$

APPENDIX 8.3 (CONTD.)

	1962-63 \$000	1963-64 \$000	1964-65 \$000	1965-66 \$000	1966-67 \$000	1967-68 \$000	1968-69 \$000	1969-70 \$000	1970-71 \$000	1971-72 \$000	1972-73 \$000
<b>COMPANY 5 - J. GADSDEN AUSTRALIA LIMITED</b>											
Adjusted Net Fixed Assets (at current value)	15,151	15,160	14,935	15,199	15,663	16,456	16,585	18,146	19,592	22,362	25,664
Other Assets	14,333	13,347	14,847	14,886	16,890	19,230	22,254	24,545	31,347	31,155	30,664
Adjusted Total Assets (at current value)	29,484	28,508	29,783	30,086	32,553	35,687	38,840	42,691	50,939	53,518	56,328
Adjusted Net Profit before tax	1,671	2,570	3,395	3,688	3,739	3,578	3,235	5,372	7,149	5,808	7,183
Adjusted Total Assets	29,484	28,508	29,783	30,086	32,553	35,687	38,840	42,691	50,939	53,518	56,328
	= 5.67%	= 9.02%	= 11.40%	= 12.26%	= 11.49%	= 10.03%	= 8.33%	= 12.58%	= 14.03%	= 10.85%	= 12.75%
<b>COMPANY 6 - BONDS COATS PATONS LIMITED</b>											
Adjusted Net Fixed Assets (at current value)	5,559	6,809	7,475	6,876	10,430	9,589	9,710	10,677	27,255	27,619	27,512
Other Assets	8,911	8,186	8,288	9,556	9,863	11,160	11,930	13,048	37,532	41,562	48,259
Adjusted Total Assets (at current value)	14,470	14,994	15,763	16,432	20,294	20,750	21,641	23,726	64,788	69,181	75,772
Adjusted Net Profit before tax	1,796	1,820	1,428	1,940	2,592	2,363	2,484	2,563	7,788	7,780	9,202
Adjusted Total Assets	14,470	14,994	15,763	16,432	20,294	20,750	21,641	23,726	64,788	69,181	75,772
	= 12.41%	= 12.14%	= 9.06%	= 11.81%	= 12.77%	= 11.39%	= 11.48%	= 10.80%	= 12.02%	= 11.25%	= 12.14%

APPENDIX 8.3 (CONTD.)

	1962-63 \$000	1963-64 \$000	1964-65 \$000	1965-66 \$000	1966-67 \$000	1967-68 \$000	1968-69 \$000	1969-70 \$000	1970-71 \$000	1971-72 \$000	1972-73 \$000
<b>COMPANY 7 - CONTAINERS LIMITED</b>											
Adjusted Net Fixed Assets (at current value)	15,893	15,619	16,225	16,973	17,737	18,741	21,808	27,064	32,321	41,346	44,349
Other Assets	15,880	15,374	17,078	16,789	20,729	23,108	24,662	24,598	29,741	33,864	34,235
Adjusted Total Assets (at current value)	31,774	30,994	33,304	33,762	38,467	41,849	46,471	51,663	62,062	75,211	78,584
Adjusted Net Profit before tax Adjusted Total Assets	$\frac{2,124}{31,744} = 6.69\%$	$\frac{2,225}{30,994} = 7.18\%$	$\frac{2,326}{33,304} = 6.99\%$	$\frac{2,867}{33,762} = 8.49\%$	$\frac{3,172}{38,467} = 8.25\%$	$\frac{3,543}{41,849} = 8.47\%$	$\frac{3,671}{46,471} = 7.90\%$	$\frac{4,136}{51,663} = 8.01\%$	$\frac{5,701}{62,062} = 9.19\%$	$\frac{5,721}{75,211} = 7.61\%$	$\frac{5,988}{78,584} = 7.62\%$
<b>COMPANY 8 - ASSOCIATED PULP AND PAPER MILLS LIMITED</b>											
Adjusted Net Fixed Assets (at current value)	35,394	35,420	36,383	35,910	34,497	34,773	40,535	50,942	79,380	84,214	82,870
Other Assets	16,956	16,904	20,455	21,562	22,769	24,428	29,296	28,933	49,571	48,132	58,536
Adjusted Total Assets (at current value)	52,351	52,325	56,839	57,473	57,267	59,201	69,832	79,876	128,952	132,347	141,406
Adjusted Net Profit before tax Adjusted Total Assets	$\frac{4,282}{52,351} = 8.18\%$	$\frac{3,609}{52,325} = 6.90\%$	$\frac{3,239}{56,839} = 5.70\%$	$\frac{4,863}{57,473} = 8.46\%$	$\frac{3,267}{57,267} = 5.71\%$	$\frac{6,360}{59,201} = 10.74\%$	$\frac{6,805}{69,832} = 9.75\%$	$\frac{6,065}{79,876} = 7.59\%$	$\frac{8,120}{128,952} = 6.30\%$	$\frac{3,488}{132,347} = 2.64\%$	$\frac{7,397}{141,406} = 5.23\%$

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