

The Distribution of Wealth in Australia — A Survey*

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This paper surveys and analyzes the available evidence on the distribution of wealth in Australia. On the basis of this evidence, it is argued that the cross-section distribution of personal wealth reveals considerable concentration in the top tail, with the top 1 per cent of adult individuals holding around 25 per cent of private wealth. The inequality of wealth revealed in the cross-section distribution among the top 10 per cent of wealth holders is not significantly reduced when adjustments are made to correct for life-cycle influences. Although the proportion of wealth held by the top 1 per cent of adult individuals has decreased sharply since World War I, the second to tenth percentiles have almost the same proportion in the 1960s and 1970s as in 1915.

I Introduction

The purpose of this paper is to survey and analyze the available evidence on the distribution of wealth in Australia. Australian attempts to estimate both the distribution of wealth and aggregate wealth have a long history. A number of government statisticians of the 19th and early 20th centuries were concerned to promote the colonies (and later the Commonwealth) as communities of rapid growth and equitable distribution by European norms, and this somewhat evangelistic fervour was buttressed by

technical competence of world standard. Names such as T. A. Coghlan (NSW Statistician, 1886-1905) and G. W. Knibbs (the first Commonwealth Statistician) regularly appear in the international literature on wealth distribution. The War Census of 1915, undertaken while Knibbs was Statistician and thoroughly discussed in Knibbs (1918), asked detailed questions on both income and wealth, and remains a unique document worldwide in wealth distribution statistics of this century.

This early interest and expertise flagged somewhat as World War II approached, and it was not until the 70s that new studies began to appear on Australian wealth distribution. The motivation that underlay this new research was rather different. A concern with promoting the colonies to European authorities as relative havens of equity was replaced by concern with the *inequality* of wealth distribution, and was accompanied by calls for government intervention to reduce the perceived concentration of wealth. As we shall see, this change of attitude was due more to changing perceptions about acceptable levels of wealth concentration than to an increase in wealth

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inequality through time. Unfortunately, these more recent studies are somewhat less authoritative than their earlier counterparts, largely because of lack of official interest and the resulting paucity of data. There remains room for considerable debate about the nature of the distribution of Australian wealth in the 1960s and 70s.

In these circumstances, it seemed worthwhile to examine the research which has been done, and to attempt to relate the various studies to one another.¹ This may be seen as a first step towards overcoming what the Taxation Review Committee (1975) saw as a major problem:

The effective discussion of taxation policy in this country is hampered at every turn by the lack of reliable data about the distribution of income and wealth. Without information about the latter, neither the effect of the widened estate duty base nor what a wealth tax could produce can be at all accurately estimated. For these and many other purposes a merely statistical inquiry into the distribution of wealth, quite divorced from any immediate tax liability for those providing data, would be valuable [p. 509].

In the debate about equity, wealth plays only a part, and some would say only a small part, in the total story. The distribution of income, and particularly of earned income, is ignored here. The dispersion of earned income is clearly a very important issue and a survey, or indeed several surveys, could profitably be devoted to it. The distribution of wealth, however, has separate estimation and policy problems associated with it, and it is to these that this paper is addressed.

More narrowly, we avoid detailed consideration of theories of wealth distribution. These theories may be thought of as falling into two categories. Some theories focus on the determinants of individual wealth-holding and then use some aggregation procedure to obtain an overall distribution. The second type of theory formulates the problem directly in terms of the distribution and makes predictions about its stability under alternative scenarios. While we do not examine theories of either type, we naturally rely on theoretical formulations, particularly of the first

type, in interpreting the evidence on patterns of wealth-holding which is at the heart of the paper.

The plan of the paper is as follows. Section II defines 'personal wealth' operationally and outlines alternative approaches to estimating its distribution. Section III surveys the Australian evidence, currently and historically, and examines the issues surrounding the interpretation of this evidence, while Section IV offers some concluding remarks about the possibilities for future research and policy initiatives.

II Concepts and Methods²

The Nature of Personal Wealth

It is first necessary to say what is meant by personal wealth. It consists of physical assets, such as houses and consumer durables, and of claims on other sectors net of liabilities to other sectors. This raises the question of the definitions of assets and liabilities to be included. Truly comprehensive valuation is impractical because of data and conceptual difficulties. Important exclusions include 'social property', or the rights to benefits from the State—access to communal assets such as schools and State pension rights, for example. If social property were included, it would significantly change the perceived distribution of wealth. I return to this issue in a later section. The second major exclusion is 'human wealth'. As has been indicated earlier, this topic raises rather different methodological, empirical, and policy issues. I therefore confine my attention to private, non-human wealth.

A question related to the definition of wealth is the basis for valuation. Two well-known possibilities exist: the 'realization' basis (or the value obtained in a sale on the open market at the date in question) and the 'going concern' basis (or the value to a person or household on the assumption that the asset is retained). These valuations may be different for at least two reasons. First, the value of an asset to an intra-marginal holder may exceed its market price, even in a perfect market. Second, markets may not be perfect: an example is occupational pension rights, where realization value may be zero.

Unit and time-period considerations are also important. The appropriate unit is ideally dictated by the use for which data is intended, but here we will for convenience focus largely on adult

¹ Two bibliographic documents which the reader may find helpful are Maddock *et al.* (1984) and Inglis (1981). After this paper was substantially complete, a survey of evidence on the distribution of Australian wealth by Nevile and Warner (1984) was brought to my attention. They report the results of sample surveys in more detail than I do.

² This section draws freely on the Introduction to Atkinson and Harrison (1978).

individuals. (Some reference is also made to households.) The appropriate time period should, once again, ideally be determined by intended use. In particular, broad equity issues would seem to be more usefully addressed by some concept of lifetime wealth than by wealth at one point in time. Data limitations, however, largely confine us to consideration of cross-sectional distributions.

Alternative Estimation Methods

Three main methods have been employed to estimate the size distribution of wealth. These are the estate method, the investment income method, and the survey method, of which a census is a special case. They will be discussed in turn.

The estate method is built upon the circumstance that in a country with estate taxes but no wealth tax, the only occasion when a person's total assets and liabilities are revealed to the fiscal authorities is when he dies. Although many people are not wealthy enough for their estates to be liable for tax, estate tax returns are an important source of information about the distribution of wealth. Taxation Office records of estates, classified by size of estate and age and sex of the deceased, provide in turn the foundation for estimation of the distribution of wealth. The basic method begins by assuming that those of a particular age and sex dying in a given year are representative of the living population. On the further assumption that the estate valuation is an accurate reflection of the wealth of the deceased, the overall distribution may be obtained by 'blowing up' the estate data by a mortality multiplier equal to the reciprocal of the mortality rate. In other words, if the mortality rate for a particular male age-group is one in 1000, we assume that for every man who died at this age in a given year, there are 999 alive in similar circumstances and multiply the numbers and values of estates in this age-group by 1000. In effect, the dead are used as a random sample of the living.

The estate approach has a long history, and Australia and Australians figure prominently in its early development. In the earliest studies, a single multiplier was applied to all capital wealth. When Baxter (1869) estimated UK total personal wealth from Probate Duties, he used a multiplier of 30, which he took to be 'the cycle for each devolution of property'. In 1906, T. A. Coghlan, the NSW Statistician, suggested in a discussion of a paper by Harris and Lake (1906) that multipliers should be related to age at death. This method was at once accepted as clearly more accurate. It was first

employed by Mallet (1908). It was then realized that still greater accuracy could be obtained by specifying multipliers in terms of 'social class', to take account of the impact on the estimated wealth distribution of the greater longevity of the rich. Social class-age multipliers have since been used in nearly all subsequent studies in the UK and the US. In Australia, lack of mortality data by social class has hindered adequate development of this refinement.

So far we have ignored 'missing wealth', either through evasion and avoidance of estate duty, or because of exemption of small estates. On the former problem, more or less *ad hoc* adjustments are made. For the latter, combination with sample survey information has been employed (e.g., Lydall and Tipping, 1961), as has the use of balance sheet totals derived from other sources to obtain a residual estimate of missing wealth.

The investment income (Giffen) method has been applied only once to the question of the distribution of Australian wealth, and then only on an 'experimental' basis (see Ablett, 1983). A brief description will therefore suffice. The essence of the approach is to apply a 'yield multiplier' to work back from the distribution of investment income to the distribution of wealth: if, for example, the yield is thought to be 5 per cent, the multiplier is 20, so that an investment income of \$5000 would be assumed to correspond to wealth of \$100 000. The yield multiplier varies with the form in which wealth is held; it is necessary to allow for the fact that the composition of wealth varies with the size of the holding, and for assets which yield no money income. The investment income approach has been employed mainly to prepare estimates of total personal wealth, and only a few authors have used it to estimate the distribution of property among persons. The most authoritative recent attempt is that of Atkinson and Harrison (1978).

Both the estate and investment income methods are open to the objection that they provide only indirect evidence about wealth-holding and cover only the upper part of the distribution. The attraction of surveys is that they provide direct information on wealth among the living population and that they can potentially cover the whole population. One very valuable historical source is the Australian War Census of 1915 (Knibbs, 1918) which is, so far as I am aware, unique in this century in its coverage of wealth. (All the original returns have since been destroyed, so that the only record we have of these data is contained in contemporary publications.)

Census responses need not of course be accurate but at least coverage is nearly complete. With a sample survey, for example the Macquarie Survey of Consumer Finances and Expenditures 1966-68 (SCFE), response rates themselves are likely to differ with wealth. It has been estimated that the total wealth implied by the Macquarie survey is only about two-thirds the actual value of total personal wealth at that time. It is not, however, just a question of total capital being understated but one of the distribution being misrepresented, partially as a result of differential non-response, that leads many investigators to conclude that surveys are unlikely to provide by themselves an adequate picture of wealth concentration among top wealth holders.

III The Distribution of Wealth in Australia: Evidence

In this section I discuss the available evidence on the distribution of personal wealth in Australia. The first subsection considers the current distribution of wealth by value of wealth-holdings. The second subsection discusses trends in the distribution of wealth through time, while the final subsection reports on attempts to relate wealth to income.

Evidence on the Current Distribution of Australian Wealth

Several attempts to estimate the distribution of wealth in Australia have been made over the last 15 years. In most cases the data reference point lies in the few years leading up to 1970, although Gunton (1975) has provided a continuous series from 1953 to 1969 and Ablett (1983) reports estimates for 1976-77. The first published estimates are those of Groenewegen (1972,³ Table 11, p. 104) who used the distribution of net value of estates (from estate duty statistics) to provide some indication of wealth distribution. No mortality multiplier analysis was employed. He concluded from these estimates that 'about 11 per cent of the population owns nearly 40 per cent of the wealth, while . . . more than 15 per cent of the population owns less than 5 per cent of the wealth' (p. 105). He suggests that his estimates would tend to understate inequality because of exempt estates of small value and avoidance practices.

The first Australian estate duty multiplier study in modern times was undertaken by Gunton (1971).

In an unpublished paper presented to the ANZAAS meetings in that year, he provides us with estimates of the distribution of wealth by wealth holder. His widely quoted results (from Table 13 of his paper) suggest that the top 1 per cent of wealth holders own about 20 per cent of the nation's wealth. It should be emphasized that the population is of wealth holders, not adults, which is the convention more frequently encountered in studies of other countries.⁴ Comparisons of Australia's wealth concentration with those of other countries using his figures therefore tend to be misleading. Harrison (1979) has recalculated Gunton's percentage estimates for the adult population, and finds that the top 1 per cent of the adult (over 20) population holds 28 per cent of personal wealth.

At first sight this new estimate changes the perception of Australia's concentration of wealth, which is often seen as being lower than that of countries such as the US and Britain.⁵ According to Lampman (1959), the top 1 per cent of US adults held 23.6 per cent of personal wealth in 1953; Atkinson and Harrison (1978) suggest that in Britain the top 1 per cent hold around 30 per cent of personal wealth. The re-interpretation of Gunton's data suggests that we do not have a concentration of wealth much below that of these reference countries.

There are, however, other problems with the Gunton estimates. We outline the most important here.⁶ Firstly, there is no allowance made for 'missing' wealth, which is why the top 50 per cent of the adult population is assumed to hold all the

⁴ See Raskall (1977, p. 29), Saunders (1983, p. 404) and Ablett (1983, p. 11) for examples of misinterpretations of Gunton's statistics based on this distinction.

⁵ This perception of lower concentration is often accounted for by referring to the unusually widespread ownership of homes in Australia. Stammer (1980, Table 4, p. 52) offers a comparison of Australia's owner-occupation rate with eight major countries, which shows Australia's rate to be the highest by an appreciable margin, at 66.7 per cent in 1976. Further research is required to discover the extent to which this difference translates into differences in wealth distribution. An important point to be borne in mind is that in countries with large public sector housing stocks rented with tenure at subsidized rates, tenure is an asset with a value equal to the capitalized value of the subsidy. A similar argument can be made in countries imposing rent control on the private rental market. In neither case is the value of these assets included in estimates of wealth distribution.

⁶ For a detailed critique of Gunton's work, see Harrison (1979).

³ The chapter was written in October 1970.

wealth. Allowance for this will decrease the proportion of total wealth held by the wealthiest 50 per cent of the population, although its effect in the top tail is less clear. Wealth may go 'missing' because of evasion or avoidance practices, which are presumably concentrated in the top tail, as well as low wealth exemptions.

To gain some idea of the amount of wealth that is missing, we use balance sheet totals for Australian personal wealth reported by Williams (1983),⁷ as well as Gunton's own estimates of total wealth. (Use of balance sheet totals to check the coverage of estate duty multiplier estimates has been more or less standard practice since Lampman, 1962.)⁸ Gunton's estate duty multiplier approach suggests a total wealth figure of \$56.5 billion, which he increases to \$60.9 billion by making allowance for the value of life insurance, pension schemes, etc. He makes no attempts to allocate the 'missing' \$4.4 billion. Williams estimates total personal wealth to be \$60.7 billion at 1967(4).⁹ We are still unable to determine the direction of the error in the top tail, however, because it is not known from where in the estimated distribution the wealth has gone missing.

Two other points about Gunton's method should be briefly mentioned. Firstly, instead of using Australian mortality multipliers, Gunton uses multipliers from a number of overseas countries which report their mortality statistics in greater detail than we do, to adjust the Australian statistics. Since wealth and longevity are correlated, this probably increases the estimated holdings of the top tail. Secondly, Gunton extends the wealth coverage of the Australian (Commonwealth) estate duty statistics downward by making use of Queensland succession duty statistics. It is in this way that he achieves coverage of around half the population without worrying about estates not taxable under Commonwealth legislation.

⁷ A number of estimates of total private Australian wealth now exist. Williams' method most directly estimates 'personal' wealth, although his estimates explicitly exclude the value of rural land and the value of assets of unincorporated enterprises. The calculations of Helliwell and Boxall (1978) and Norton *et al.* (1982) should also be mentioned. The total wealth implied by the Macquarie SFCE data used by Podder and Kakwani (1973) is estimated by Raskall (1977, p. 8) to be \$50.2 billion in 1968.

⁸ See Atkinson and Harrison (1978) for a discussion.

⁹ Helliwell and Boxall (1978) calculate private sector wealth at \$73.5 billion for the same quarter. For later years, the Gunton estimates fall well below Williams'.

Gunton developed his early work into a Ph.D. thesis (Gunton, 1975) in which he uses exclusively Australian data for mortality multipliers (not differentiated by social class), and makes a number of other changes. The basic strategy, however, remains much the same. Much more detail has been reported there, including trends through time and wealth by industry. We return to these below.

The second major estate multiplier study of the 70s is due to Raskall (1977, 1978). I will focus on Raskall (1977), since it is here that methods are explained and results presented. Raskall's study averaged data for 1966-67 to 1972-73 and employs a methodology more conventional than Gunton's. He independently derives a balance sheet total, relies solely on Commonwealth Estate Duty statistics and Australian mortality multipliers, makes allowance for avoidance and evasion in those estates liable for duty, and uses a log-linear extrapolation (rather than State-specific statistics) to cope with the bottom tail of the distribution. The value of wealth (in 1969-70) implied by the estate duty method is estimated at \$40.4 billion (Table 4, p. 15). His 20 per cent avoidance assumption increases this to \$50.5 billion. The balance sheet total for the same year is estimated at \$85.7 billion (compared with Williams' estimate of \$78.6 billion). By assuming every adult has at least \$10 of wealth, the log-linear extrapolation procedure leads to implied wealth-holding of the estate duty-exempt population of \$34.5 billion, very close to the residual requirement of \$35.1 billion.

The findings of these three studies are summarized in the first three rows of Table 1. The results of Gunton (1971, 1975) have been modified to reflect percentage of adult population, rather than of wealth holders.

A number of points of comparison can be made. Firstly Gunton's 1975 results lead to a concentration of wealth in the top tail somewhat below that in his earlier estimates, a modification accounted for in part by the change in his derivation of multipliers. Secondly, Gunton's 'no missing wealth' assumption leads to the result that the wealthiest half of the adult population own (virtually) all Australian personal wealth. Raskall, on the other hand, has around 8 per cent of wealth held by the poorer half of the population, a result which he says is consistent with the Podder-Kakwani survey results reported in row 4 of the table.¹⁰

¹⁰ These estimates were derived by Raskall from Podder and Kakwani (1973).

TABLE 1
Some Evidence on the 'Present Day' Distribution of Wealth in Australia

	Data Year	Percentage Share of Wealth held by top x per cent of adults (over 20 years)				
		1%	5%	10%	20%	50%
Adult Individual Wealth Units						
Gunton (1971) ¹ Table 12	1967-68	28.7%	56.6%	72.5%	N.A.	100.0% ²
Gunton (1975) ³ Table 7.9	1969	25.5%	50.2%	67.7%	83.4%	99.6%
Raskall (1977) Table 8	1967-72	22.0%	45.5%	58.5%	72.2%	92.1%
Ablett (1983) ⁴ Derived from Table 2, pp. 13-14	1976-77	9.4%	22.1%	36.6%	N.A.	N.A.
Podder/Kakwani (1973) ⁵ (from Raskall, Table 9, p. 29)	1966-68	N.A.	N.A.	54.0%	69.8%	91.9%
Household Wealth Units						
Podder/Kakwani (1976) Tables 14-15, pp. 90-1	1966-68	9.3%	24.6%	36.4%	53.5%	84.5%
Ablett (1983) Table 4, p. 17	1976-77	22.3%	41.5%	49.6%	63.7%	83.9%

N.A.: Not available.

- 1 The estimates reported in Gunton (1971) Table 13 report wealth of the top x per cent holders, not adults. Caution is therefore required in interpreting Table 2 of Saunders (1983) and Table 1 of Neville and Warren (1984). The estimates reproduced here are taken from Harrison (1979), who calculated the corresponding adult series from Gunton (1971), Table 12.
- 2 Gunton (and Harrison) assumed that the top 47.5 per cent of adults held all wealth.
- 3 These estimates have been derived from Gunton (1975), Table 7.9, using linear interpolation. I follow Gunton in using linear rather than the more conventional log-linear interpolation. Calculations by Harrison (1979) based on Gunton's (1971) paper suggest no significant error is introduced by this simplification.
- 4 See text for details of derivation. The data covered only the top of 8.33 per cent of the adult individual population. These estimates were derived by linear interpolation and, in the case of the 10 per cent estimate, linear extrapolation.
- 5 Raskall converted householders in P-K with a net wealth of less than \$15 000 to an individual basis by using the 1971 Census mean of 2.0798 persons aged 20 and over per occupied dwelling (household), and assuming that three quarters of household wealth was owned by one individual and one quarter by the other. I used linear interpolation to standardize the reported estimates.

It will be recalled that Raskall increased all estate duty estimates by 25 per cent to take account of estate duty avoidance and evasion. This would be expected to increase concentration in the top tail relative to Gunton's estimates. Yet both Gunton's studies report a higher degree of concentration in the top tail. There are two reasons for the use of wealth differentiated multipliers by Gunton (1971), and dramatically different total wealth estimates.

As Raskall himself points out, 'the enforced use of a general mortality multiplier is likely to result in an under-estimate of the concentration of wealth'

(p. 10), because of the greater longevity of the wealthy. Although this point is widely recognized, the quantitative importance of even a few years' difference in expected life does not appear to have been generally appreciated. Gunton (1971) attempts to overcome this deficiency by adjusting age-sex specific multipliers applicable to large estates by reference to multipliers derived from other countries where life expectancy at birth is higher than in Australia. These are reported in Table 3 of Gunton (1971, p. 4). The adjustments are very appreciable: for example, for male decedents aged

60-69 leaving estates of more than \$200 000 the ratio is 1.76; the corresponding ratio for the 70-79 age-group is 1.40. It is apparently these adjustments which largely account for the difference between the estimates of Gunton (1971) and Gunton (1975).

The second reason for Gunton's higher concentration result is that his total wealth estimate is much lower than Raskall's. This holds for both his 1971 and 1975 studies. Raskall estimated total wealth in 1970 at \$85.7 billion, while Gunton (1975) used a figure of \$61.9 billion. This accounts for all of the difference between the top tail estimates of Raskall and Gunton (1975).

The fourth row of Table 1 reports estate method estimates derived from Table 2 of Ablett (1983) from 1976-77 data. These estimates are the most recent for Australia and, according to the author, 'hopefully the most reliable guide to the top tail of the distribution' (p. 4).

Ablett does not present his results in a form which allows immediate comparison with other Australian estate method studies. The series reported in Table 1 was derived from Ablett's Table 2 by assuming total personal wealth in 1976-77 was equal to Williams' (1983) estimate for 1976(4) of \$205 billion and using the ABS estimate of the population of adult individuals on 31 December 1976. Linear interpolation was used where necessary.

Ablett's results differ markedly from previous estimates. There are a number of reasons for this. Firstly, no attempt was made to allow for the effects of avoidance and evasion, even though by 1975 estate tax avoidance was a thriving industry.¹¹ Since, with a progressive estate tax, the incentive to avoid increases with the size of the estate, a lower degree of concentration might be expected to result from this omission. Secondly, no attempt was made to use social class mortality multipliers. Therefore the impact of the increased longevity of the rich on unadjusted estate method results is not corrected for. As was mentioned above, Raskall undertook a correction for the first of these difficulties and Gunton made adjustments for the second. It is therefore not surprising that Ablett's series shows a much lower concentration of wealth than the Gunton and Raskall estimates.¹²

The fifth and sixth rows of Table 1 report

estimates of the distribution of wealth by individual and household derived from Podder and Kakwani (P-K) (1973, 1976). These authors analyze the raw data in the Macquarie survey of consumer finances and expenditure in 1966-68 (SCFE). This survey suffers from all the drawbacks of survey methods as they apply to estimating wealth distributions which were discussed in the previous section. Further, correction techniques, such as oversampling of the very rich, were not employed.¹³ On this basis, Harrison (1979) concludes that 'the survey has really not advanced our knowledge very much'.

The fifth row partly reproduces Table 9 of Raskall (1977, p. 29). For those households with a net wealth of less than \$15 000 Raskall has derived an individual adult series from the Macquarie household SCFE data. While the assumptions made for this conversion are somewhat *ad hoc* (Raskall, p. 28), the series does provide some basis of comparison with the individual based estimates of Gunton and Raskall. Row 6 uses percentages of households, reported by P-K (1976) and, not surprisingly, shows a quite different wealth distribution. The estimates in row 6 are reported for completeness and as a point of comparison with Ablett's household estimates.

Ablett's results, reported in the last row of Table 1, come from the only attempt to estimate the distribution of wealth in Australia using the investment income approach. They differ from most other such attempts (e.g. Atkinson and Harrison, 1978, Chapter 7) in that they rely on sample survey data rather than tax data. Two potentially serious sources of error are thus introduced: differential survey response and under-reporting, and error in the chosen yield multipliers. Further, the survey provides little disaggregation by asset type. Ablett himself calls his estimates 'experimental', and acknowledges that 'the estimates . . . are . . . highly dependent on both the data and assumptions used. The sample survey statistics probably understate true interest and dividend income significantly . . . In addition, the "yield multipliers" assumed are probably even more at variance with reality' (p. 18). The data difficulties confronted by Ablett suggest that his results should not at this stage be given much weight.

The remaining evidence on Australia's current

¹¹ See Hill (1975).

¹² It should also be noted that Berry (1977, Table 7, p. 30) estimated the concentration of wealth for Australia in 1972-73 using the estate method with a single multiplier.

¹³ Correction was made for differential response between the first and second stages of the survey, but not for under-response to the survey as a whole.

wealth distribution comes from the recent publication of Australia's wealthiest 'One Hundred' by *Business Review Weekly*.¹⁴ Their article is summarized in Table 2. Relative to similarly casual empiricism about the US and UK, Australia has, proportional to population, far fewer very rich — only seven centimillionaires and no billionaires. This table should be regarded as indicative rather than precise. BRW sometimes grouped families into one entry; the authors estimate that 'there are as many fortunes again in the \$10 million plus bracket' (p. 25); and it is in the nature of the exercise that numbers will be very approximate. The table ignores the family fortunes in BRW's 'family dress circle' section.

As I pointed out in the introduction, modern studies of the distribution of wealth are usually motivated by a concern with equity, and are concerned to inform redistributive policy formulation. The interpretation of the evidence assembled above is subject to a major caveat if it is to be used for this purpose. It relates to the distribution of current wealth among all people alive at a particular date, including the wealth that people have accumulated for life-cycle purposes, particularly saving for retirement. Cross-section wealth inequality will be observed even in a perfectly egalitarian society because different people will be at different stages in the life cycle; this holds with even greater force in the presence of equal inheritance.

From a policy perspective, therefore, we should perhaps be more interested in the distribution of inherited wealth than in current wealth. This lifetime approach would appear to be conceptually more appropriate if the initial concern with equity is with unequal 'life chances'. Inequality would then ideally be measured in terms of the value of wealth that a person receives over the course of his or her life in the form of bequests, gifts and other capital receipts.

The problem of distinguishing between wealth differences attributable to life-cycle and related effects, and those attributable to unequal life chances, can be addressed in two ways. Firstly, it is possible to follow Atkinson (1971; 1983, pp. 174-77) and generate a cross-section distribution implied by a perfectly egalitarian society. This requires the assumption of plausible parameters for individual behaviour with respect to accumulation, plausible life events, etc. Secondly it is possible to examine the distribution of wealth within each age-cohort, in the manner of Wedgwood (1929, Chap. VII) and Atkinson (1971). Estimates reported in Raskall (1977, Tables 3, 4 and 13) permit a rough exercise of this kind to be undertaken in Australia for the 10 per cent or so of the population sampled by the estate method. I carried out these calculations, and the results are reported in Table 3.1 assumed that the mean wealth estimates by wealth class reported in Raskall's Table 4 were constant across all age-cohorts, and adjusted them

TABLE 2
The Top Tail of the Wealth Distribution:
A Summary of Business Review Weekly's Top 100

Net Wealth Range	Number of Entries	Mean Wealth (\$million)	Median Wealth (\$million)	Major Source
> \$100 million	7	141.4	150.0	Media
\$50-100 million	11	60.0	60.0	Property Investment, construction
\$10-50 million	100	21.3	20.0	Property investment, mining, distributive trades, financial investment

¹⁴ *Business Review Weekly*, Vol. 5, 45, 12-18 November, 1983, pp. 23-82.

in line with his avoidance assumption. 'Missing wealth' owned by small wealth holders was allocated in accordance with the population not covered by estate estimates for each age-cohort.

TABLE 3

Wealth Inequality by Age-Group: Australia 1967-72

Age Cohort	Percentage Share of Wealth by Age Cohort Held by Top x per cent of Adult Individuals		
	Top 1%	Top 5%	Top 10%
20-29	14.2%	29.0%	41.2%
50-59	20.6%	45.9%	60.7%
80-89	24.3%	50.6%	64.9%

Source: Raskall (1977, Tables 3 and 4). Linear interpolation was used where necessary.

Although the results are of the very roughest kind, they nevertheless support Atkinson's (1971) finding for the UK that the distribution of wealth by age-cohort is not greatly different from the overall distribution for those whose wealth is liable for estate duty, i.e., the upper range of wealth holders. A possible reason for cohort inequality other than 'unequal life chances' is that inheritance may occur at different times in individual's lives. If this were the case to a marked degree, however, inequality would decline as cohorts become older, and there is no clear tendency for this to be the case. In fact, the opposite holds. We are probably justified, therefore, in interpreting the concentration and distribution of wealth among the top 10 per cent or so of the population primarily as a reflection of unequal life chances.¹⁵

If this degree of concentration of inherited wealth is viewed as unacceptable, then the results suggest that some form of redistributive policy should be introduced. This survey is not primarily concerned with redistributive policies themselves;

¹⁵ The lack of importance of the life cycle in explaining the distribution of wealth as estimated by the estate method should not be interpreted as evidence against the importance of life-cycle effects as such. If reliable data were obtainable for the whole population, significant life-cycle effects from retirement and bequest-related accumulation could no doubt be identified. The results do suggest, however, that inequality of inheritance dominates life-cycle effects in the top tail.

Section IV, however, contains a brief discussion.

Trends Over Time

It was pointed out in Section II that Australia was fortunate in having officials in the late 19th and early 20th centuries who were at the forefront of methodological innovation in estimating wealth and its distribution. The upshot of this expertise is that over this period, Australia's wealth and its distribution is better documented than that of any other country, except perhaps the UK. The first commentary supported by statistics appears in Coghlan (1900, pp. 724-5). He reports the proportion of estates per 100 deaths of the total population which were large enough to be the objects of specific bequests. For Australia this proportion was 11.1 per cent in 1880-84 and 12.0 per cent in 1885-89; it increased to 14.1 per cent in 1890-94 and to 16.0 per cent in 1898-99. He reports the comparable UK figure for 1890-94 to be 8.9 per cent. Coghlan comments:

These figures show a distribution of wealth not to be paralleled in any other part of the world; and in a country where so much is said about the poor growing poorer and rich richer, it is pleasing to find that in the whole population one in six is the possessor of property [p.725]. Official interest was also responsible for the 1915 War Census which, as I pointed out earlier, is a unique document for any nation in this century on income, wealth and its distribution. Table 4 gives results from this census which have been tabulated to provide easy comparison with the estimates in Table 1.¹⁶ (The 'Adult males' series might be thought of as providing a proximate series for 'household' wealth units.) This comparison suggests that between 1915 and the late 60s there was a dramatic decrease in the proportion of wealth held by the top 1 per cent of the individual adult population. This observation has also been made for the US (Lampman, 1959) and the UK (Atkinson and Harrison, 1978, chap. 6).

¹⁶ It should be noted that there are a number of drawbacks to the War Census wealth data. Coverage was incomplete since, owing to the constraints of war, the onus of obtaining the forms and posting them was placed on the individual filing the returns. Nevertheless, overall response exceeded 90 per cent. Secondly, it is possible that serious under-reporting took place because of fear that the Census return would be used to levy a new Commonwealth income tax. See Ingles (1981, pp. 12-13) and Lancaster-Jones (1975) for more detailed treatment of this issue.

TABLE 4

Estimate of the Size Distribution of Wealth in Australia, 1915

Percentage Share of Wealth Held			
		Adult Males	Adult Persons
Top	1%	39.3%	37.8%
	5%	66.3%	64.2%
	10%	78.1%	78.1%
	20%	85.5%	89.1%
	50%	95.3%	98.0%

Source: Knibbs (1918, pp. 30-1). Linear interpolation was used where necessary.

Redistribution over time becomes much less marked, however, as we move away from the top tail. Comparing row 1 of Table 1 with the War Census estimates, for example, reveals that the 2nd to 5th percentiles actually hold a larger proportion of wealth in 1967-68 (27.9 per cent) than in 1915 (26.4 per cent), and that the same is true for the 6th to 10th percentiles (15.9 per cent in 1967-68 vs. 13.9 per cent in 1915). Other Table 1 estimates indicate the same tendency, which has also been observed in the UK (see Atkinson and Harrison, 1978, p.170). It is likely that this observation can be at least partly accounted for by estate duty avoidance practices.

War Census estimates will be referred to again in a later section on the relationship between wealth and income. We now turn our attention to studies which focus on temporal comparisons of wealth distribution.

The first attempts to make temporal comparisons of the Australian wealth distribution were those by P-K (1976, Table 14, p. 90) and Broom and Jones (1976, pp. 46-8). Both used 1915 as their base year and the mid-60s as their 'recent year'. P-K compared estimates derived from the 1915 War Census for adult males with results from Macquarie SCFE data for households and found wealth inequality to be greatly reduced. The Gini coefficient moved from 0.86 to 0.52. Broom and Jones compared Victorian probate statistics in 1915 and 1965 without applying the estate method but after making some allowance for unreported small estates in 1915. The Gini coefficient values for these series were 0.87 in 1915 and 0.69 in 1965. Although the two approaches give quite different results for each distribution, the direction of change in

concentration is unambiguous and substantial in both studies.

The idea that over the period since World War I there has been a secular decline in the inequality of wealth distribution is one on which there is fairly general agreement across developed countries. The direction of change over the 19th century is more controversial. Many economic historians argue that the industrial revolution and the accompanying rapid economic growth led to increased inequality, and that this trend was not reversed until the early part of the 20th century. This view is by no means unanimous, however: there is also a school of thought which argues that wealth inequality remained constant or declined throughout the 19th century. For Australian evidence on this latter question, a longer time period than that since 1915 must be covered. Table 5 gives a summary of statistics on Victorian estates over the period 1860-1974, drawn from Rubinstein (1979). The Gini coefficients clearly indicate a secular decline in the inequality of wealth.

Wealth Distribution and its Relationship to Income and Other Variables

There has been relatively little analysis of the relationship between income and wealth in Australia. There is the early and pathbreaking work in Knibbs (1918); the analysis of the Macquarie SFCE data by P-K (1976, pp. 84-5) and Podder (1978, pp. 40-52); and the study by Yates (1981). The most comprehensive of these studies is, of course, that of Knibbs since he was analyzing census data. Since wealth questions have not even been asked in any Australian census since 1915, the more recent studies, on which we focus here, all rely on surveys. As Yates (1981, p. 1) points out, estate and investment income methods are for various reasons unsuitable for estimating the relationship between income and wealth distribution.

There can be no doubt that survey information in this area is seriously deficient, as any attempt to 'blow up' sample statistics to national aggregates will show. This is likely to be a particularly serious problem towards the upper end of the wealth (and income) distribution. There are, however, three surveys which have been carried out: the Macquarie survey already mentioned, an ANU survey based on households moving house to or within Adelaide in 1978, and a survey commissioned by the Campbell Inquiry and carried out by McNair-Anderson in 1980. I draw on Yates (1981), who reports detailed statistics from all three, to

TABLE 5
*Summary Statistics of Historic Trends in Wealth Distribution
 Victorian Estates 1860-1974*

	Gini		Median Wealth (£ at 1911 prices)		Mean Wealth (£ at 1911 prices)	
	Men	Women	Men	Women	Men	Women
1860	.972	.984	0	0	169	11
1880	.957	.979	0	0	472	74
1880-89	.904	.915	0	0	900	291
1923-24	.871	.832	9	0	833	377
1938-39	.867	.826	39	0	956	512
1953-54	.816	.803	110	46	789	440
1962-63	.769	.741	232	134	976	608
1973-74	.746	.738	200	394	879	660

Source: Rubinstein (1979, Tables 2 and 3).

TABLE 6
Distribution of Assets Held by all Households by Household Income

Household Gross Income	Macquarie June 1968		ANU June 1976	
	Mean Net Worth	Sample Size	Mean Net Worth	Sample Size
\$(1980)	\$(1980)		\$(1980)	
0- 4 999	23 201	496	10 518	63
5 000- 9 999	25 000	964	9 842	97
10 000-14 999	33 071	631	9 839	123
15 000-19 999	45 308	380	16 486	127
20 000-24 999	59 267	158	14 729	111
25 000+	116 959	117	30 614	141

Source: Yates (1981, Tables 3.4 and 3.7). All estimates are expressed in 1980 prices. Linear interpolation was used where necessary.

construct Table 6, which reports the estimated distribution of value of assets of households by household income range. The data reveal, not surprisingly, a strong correlation between household income and household wealth. All estimates are reported in 1980 prices.

The Macquarie survey has been alluded to earlier. While problems of under-reporting and under-response are apparent (see footnote 5), the

Macquarie study would appear to be far more comprehensive in its coverage than the 1976 ANU 'movers' survey. The most obvious sampling bias introduced by the ANU selection criterion (households moving house to or within Adelaide) is that it is likely that owner-occupiers will be under-represented. The disagreement between the estimates is so large that a bias of this kind must be present, and underscores the difficulty of gaining good information about wealth by survey

techniques.¹⁷

A number of studies report cross-tabulations of wealth and other variables. Podder and Kawani (1976) report composition of wealth by wealth ranges, and Izan and Clements (1983) have analyzed this relationship statistically using SFCE data. They find the wealth elasticity is lowest for cash and bank deposits (0.69) and highest for shares and securities (2.78). The 'own home' wealth elasticity is found to be 0.98. Podder (1978) reports tabulations of wealth distribution by age and by region while Gunton (1983), Knibbs (1918), Podder and Kakwani (1976) and Raskall (1977) all report linkages between wealth and occupation or industry. Knibbs (1918) and Gunton (1975, pp. 282-90) present evidence of wealth inequality by state; Abelson *et al.* (1983) report mean wealth and income estimates for local government areas and statistical subdivisions in Sydney. These estimates are not pursued further in this survey.

IV Concluding Remarks

At the risk of some over-simplification, the following conclusions can be drawn from the research analyzed in this survey. First, the cross-section distribution of personal wealth (that is, the distribution of personal wealth at any point in time) reveals considerable concentration in the top tail, with the top 1 per cent adult individuals holding around 25 per cent of private wealth, the top 5 per cent about 50 per cent, and the top 10 per cent more than 60 per cent. These estimates indicate a slightly greater concentration than revealed in studies of the US, and substantially less than in the UK.¹⁸ Margins of error are, however, very wide, and international comparisons must be made with great caution. Second, the inequality of wealth revealed in the cross-section covering the top 10 per cent of wealth holders is not significantly reduced when

adjustments are made to correct for life-cycle influences. It may, therefore, be interpreted as primarily reflecting 'unequal life chances'. Third, the proportion of wealth held by the top 1 per cent of adult individuals has decreased sharply since World War I. The second to tenth percentiles, however, have almost the same proportion in the 60s and 70s as in 1915 and, according to some estimates, have slightly increased their share. Nevertheless, the share of wealth held by the bottom 90 per cent increased from 22 per cent in 1915 to between 35 and 40 per cent in the late 60s. Fourth, there is a strong correlation between wealth and income.

Further Australian research must rely on the estate method to get at the top tail, supplemented by surveys. In the absence of an estate duty, a sample of estates could be accurately valued for statistical purposes. Probate statistics are probably not adequate for this purpose. More disaggregated analysis of mortality statistics could help with the derivation of more accurate mortality multipliers. A properly constructed survey, perhaps along the lines of Projector and Weiss (1966), would provide valuable information on patterns of wealth among the lower 90 per cent of the adult population, and may enlighten us on some of the issues raised as households form, change, and disintegrate over time.¹⁹

Consideration of further research naturally raises the question of the uses to which it might be put. If evidence of the kind we have been examining leads to a perception that the distribution of wealth is 'too unequal', it provides the basis for advocating policy initiatives designed to reduce wealth inequality.

Evaluation of the initiatives themselves, however, cannot be undertaken on the basis of wealth (or income) distribution statistics alone, however complete and accurate they may be. An understanding of the process of wealth accumulation patterns within a generation, and wealth transmission patterns between generations, is required before the effects of measures such as wealth transfer taxes can be predicted. Such an understanding will only be arrived at by research projects aimed at analyzing savings patterns, retirement provision behaviour, marriage and fertility patterns, and bequests (among other

¹⁷ Calculations were also made to place the McNair-Anderson survey on the same basis as the other two studies, but the comparison turned out to be meaningless. The McNair-Anderson study asked only about financial assets, and only those owned by the individual (not necessarily household head) interviewed.

¹⁸ Atkinson and Harrison (1978, Table 5.4, p. 123) estimate the top 1 per cent of adult individuals in Britain in 1972 hold 31.4-34.7 per cent of private wealth; the top 5 per cent 54.7-58.2 per cent; and the top 10 per cent 68.2-71.2 per cent. Lampman (1959) estimates the top 1 per cent of adults in the US in 1953 held 23.6 per cent of private wealth.

¹⁹ Ideally, a census of income and wealth would be desirable, but such an undertaking appears unlikely in the present political climate.

elements of the determinants of wealth distribution). Research into these matters is at an early stage internationally and empirical work on Australia is almost non-existent.²⁰ Until an intensive research effort into these social and economic processes is undertaken, social scientists in general and economists in particular will be poorly equipped to offer advice on how to reduce wealth inequality effectively and efficiently.

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²⁰ See Broom *et al.* (1980) for a rare example. A start on the analysis of bequest patterns is also being made by Martin Shanahan of Flinders University, using South Australian data.

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