A COMPARISON OF INEQUALITY IN THE DISTRIBUTION OF INCOME AMONGST AUSTRALIAN OWNERS AND RENTERS

B.F. Reece

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B.P. Reece
University of New England
and
Visiting Fellow, A.N.U.

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SUMMARY

This paper examines the distribution of incomes of owners and renters of dwellings. It finds that while the mean income of renters is lower than for owners, nevertheless the degree of inequality in income distribution was similar in 1974-1975. It does this in a new way by calculating Gini coefficients to measure the income inequality of owners and renters. The falsity of the stereotype that renters are all poor is revealed by the finding that renters include those who are well-off. Consequently, the paper concludes that any policy which fails to direct aid to particular groups of renters will also aid those renters not in poverty. In particular, the exploration of income inequality undertaken by means of Gini coefficients will be relevant to debating whether the lowering of rents consequent upon a failure to tax capital gains on rental housing has benefited the poor exclusively.
A COMPARISON OF INEQUALITY IN THE DISTRIBUTION OF INCOME AMONGST AUSTRALIAN OWNERS AND RENTERS

B.F. Reece*

The topic of inequality in income distribution is one of perennial general interest. That interest has been stimulated in Australia by a number of studies of household income and expenditure conducted by the A.B.S., which have provided a base for extensive empirical investigation of aspects of income distribution.¹ But to date the topic has not been approached by examining income distributions when households are classified as owners or renters, that is, by their tenure choice in housing markets. This paper reports such an investigation. The topic is subject to pre-conceptions, as Kemeny (1981, xi) noted. "My British values (and sociological training) told me that tenure was essentially a class phenomenon and that by and large the only people who rented were the poor". The topic also has policy implications, for housing policy directed towards renters generally assumes them to be poor, and deserving of special consideration, relative to owners. This examination of the degree of inequality present in each group's income distribution finds that whilst renters were poorer than owners in terms of mean income, nevertheless

*Senior Lecturer, Economics Department, U.N.E. I am grateful to Professor Kakvani for calculations of Gini coefficients from the 1974-75 ABS data, to Dr D. Murray and Dr. J. Pigott for discussion, as well as to participants in seminars at the Division of Building Research, C.S.I.R.O. and the Victorian Ministry of Housing. Acknowledgment of financial assistance from the ARGS is also made. The paper was written and revised during visits to A.N.U., Monash University and The Ohio State University and the assistance received at those universities is gratefully acknowledged.

¹These include the Household Income and Expenditures Surveys of 1974-75 (ABS, 1977) and 1975-76 (ABS, 1978), as well as studies of Australian income distributions. Murray (1978) is an example of one such empirical investigation.
the degree of inequality within each group was similar for the sample of Australian households surveyed in 1974-75 by the ABS. This unexpected finding of similar income inequality prompts certain questions. First, what does it mean? Second, what can explain it? Third, can examination of the income inequality of groups classified by tenure choice contribute positively towards understanding the differences between tenants and owners and how those differences affect housing markets? Finally, do the household income distributional inequalities reported here have implications for housing policy? To answer these questions, the paper is organised as follows. Section I discusses the nature of the data. Section II reports aspects of the data in terms of average income, quintiles, Gini coefficients and Paglin-type Gini coefficients based on family type. Section III examines inequality when data from the same survey is further sub-divided into two types of owners and four types of renters. The usefulness of examining the degree of income inequality of renters and owners is assessed in the final Section.

I. THE DATA

The source of the data used in this study was the Australian Bureau of Statistics' Household Expenditure Survey of 1974-75. The sample was drawn from private occupied dwellings used for the purpose of residence in the six state capitals and Canberra. 9,095 responses were obtained from the 12,600 households comprising the sample. In this survey, household income was defined as gross income from all sources before tax. Household expenditure was defined as all payments for goods and services for private use. Information about household income and expenditure was collected over a 12 month period, together with demographic and housing occupancy information. Only grouped data from the Survey was released by the Australian Bureau of Statistics. This
traditional policy, aimed at preserving household privacy, necessitated the use of aggregate, as opposed to individual, household data.

The income and expenditure classes selected for grouping households in this study numbered twelve, the last of which was an open-ended class. Family types were classified, along life-cycle lines, in the following way: family type (hereafter FT) 1, head married, aged 15 and under 30 years; FT2, head married and aged 30 and under 45 years; FT3, head married and aged 45 and under 65 years; FT4, head married aged 65 years and over; FT5, non-married head without children and non-married head with children; FT6, head only, aged less than 45 years; FT7, head only, aged 45 years or more. For each family type and income group the number of households owning or renting in that group was obtained from the ABS. Those households obtaining accommodation rent free were treated as renting by the ABS. That convention was followed in this study.

A feature of the ABS survey was their use of a post-sample weighting for household types. This method adjusts the sample for under-representation of certain types of households.

Amongst other information obtained was the migrant status of the household head, here defined in relation to birth outside Australia, or residence for less than 5 years in Australia. This classification reflects a common view (Duloy 1967, Reece 1967, Nightingale 1978, Department of Social Security 1982) that the ownership of housing by migrants approaches that of non-migrants within 5 years. However, this latter classification yielded many cells with only a small number of observations, which reduced its usefulness. A tabulation of household characteristics, in terms of the All Cities averages, is presented in Table I for information.

2The type of problem such data creates for statistical analysis is discussed in Murray (1976, p.162).
II. ANALYSIS OF THE INCOME DISTRIBUTION

In discussing how the income distribution of owners and renters differ one starting point is to note that the distribution of income is not functionally related to tenure choice. That is, to study the distribution of income by, say, occupation, age, or sex, is implicitly to see these later variables as affecting earning power. Now tenure class is an aspect of consumption, not earning. In that sense, the distribution being examined is not functionally related to earning ability.\(^3\) Rather, the interest lies in asking if those

\(^3\)An exception to this observation would be created if the definition of income was extended to include an imputed rental income. Owners, by electing that tenure class, would then influence their level of income. A further objection is that if a deposit is needed to become an owner and a deposit requires saving, then, since saving is a positive function of income, ownership and income are related functionally. This objection appears well taken but depends for its apparent force on the web of relationships that can be found between most, if not all, economic phenomena. At the empirical level, Reece and Griffith (1980) found only a weak relationship between ownership and income whilst Yates (1981) and Flood (1983) report low income elasticities of demand for housing.
electing one tenure form have an income distribution which is more or less unequal than the other.\textsuperscript{4} Obtaining the answer to that question could be justified as contributing to knowledge of the characteristics of housing market participants. Indeed, many have presented such distributions (Neutz (1980) and Butler et al. (1980) are Australian examples), though not using the summary measure employed later.

\textbf{TABLE 2}

\begin{tabular}{lccc}
 & Owners & Renters & Renters' Income as % of Owners \\
\hline
All Cities & 213.28 & 182.00 & 85.3 \\
Adelaide & 197.57 & 164.18 & 83.1 \\
Brisbane & 200.30 & 174.92 & 87.3 \\
Canberra & 292.73 & 254.20 & 86.8 \\
Hobart & 193.81 & 161.70 & 83.4 \\
Melbourne & 218.57 & 188.79 & 86.4 \\
Perth & 206.98 & 153.47 & 74.1 \\
\hline
\end{tabular}

[Source:] 1974-75 ABS Household Survey

The first aspect of the 1974-75 income distribution noted is that owners comprise 69.42% of all households but receive 72.5% of reported weekly household income. This disproportionate share for owners is reflected in the fact that the average weekly income reported in all capital cities for owners

\textsuperscript{4}Households which cannot save a deposit have no freedom to elect a tenure form. This does not detract from the question's worth because the inability to save a deposit may reflect wide choices affecting the distribution of income. In a neo-classical framework, the choices include those between work and leisure, saving or consumption, and the degree of risk undertaken.
is $213.28 whereas renters received $182.00. The relative income levels in
the various cities are shown in Table 2. Hence it cannot be denied that an
average renters receive less income than owners. It is commonplace to observe
that the mean income of renters is lower than that of owners, then to deduce
the difference in mean income accounts for the tenure choice of the poor
group. That conclusion is satisfactory as far as it goes. However, by
stopping there the opportunity to show the further complexity of tenure choice
is foregone. When only the mean income in each group is considered, the
phenomenon that households with high incomes may elect to rent is ignored.5

Table 3 shows the quintile distribution of income for renters, owners,
and all households combined, in the All Cities case. The distribution of
income by quintiles is remarkably similar for both renters and owners. The
percentage of all renters in the highest 20% of the income distribution scale
is exactly equal to that for owners, whilst those in the lower quintiles vary
only slightly. These differences are, however, very slight and may not be
statistically significant. What the comparison in Table 3 establishes is that
the renters and owners are distributed over the quintiles of their respective
income distributions in a very similar way.

<table>
<thead>
<tr>
<th>TABLE 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All Cities, Quintile Income Distribution (%)</strong></td>
</tr>
<tr>
<td>Quintile</td>
</tr>
<tr>
<td>1st</td>
</tr>
<tr>
<td>2nd</td>
</tr>
<tr>
<td>3rd</td>
</tr>
<tr>
<td>4th</td>
</tr>
<tr>
<td>5th</td>
</tr>
</tbody>
</table>

5Theories of tenure choice are summarised and discussed in Reese and Griffiths (1980), Ch. 2.
This point can be demonstrated in a more precise way by considering the Gini coefficient, one of the measures most widely used to represent the extent of inequality of income distribution. The Gini coefficient is a measure of the extent to which an actual income distribution differs from one in which all households receive the same income. The Gini coefficient may be interpreted in two ways. The geometrical interpretation is that, if a Lorenz curve is drawn linking the points showing the cumulative percentage of total income received by the cumulative percentage of the population being considered, then the area between the Lorenz curve and the diagonal, divided by the total area under the diagonal, determines the Gini coefficient. Hence complete income equality would be represented by a coefficient of 0 whilst complete inequality would be represented by a coefficient of 1. A second interpretation is given by Atkinson (1983, p. 53), "Suppose we chose two people at random from the income distribution, and express the difference between their incomes as a proportion of the average income, then the difference turns out to be on average twice the Gini coefficient: a coefficient of 0.4 means that the expected difference between two people chosen at random is 80 percent of the average income". The second of these interpretations is most relevant to this paper. Table 4 shows these coefficients for the separate capital cities (excluding Darwin). The degree of similarity in the income distributions of renters and owners is seen best in Melbourne where the Gini coefficient for owners and renters is identical. Referring to Table 2, and using the mean incomes for Melbourne shown there of

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6 The Gini coefficient, and a method for calculating it from grouped data, is described by Morgan (1962). Other measures of inequality available are those devised by Theil (1967) and Atkinson (1979). The Gini coefficient emphasises the distribution around the mean, and gives little weight to the tail of the distribution.
$218.57 and $161.70 for owners and renters respectively, the value of the Gini coefficient of .325 for both renters and owners implies that the expected difference between any two randomly selected households would be $142.07 for owners and $105.1 for renters. This calculation illustrates, and strikingly so for renters, the degree of diversity found in the household incomes of each group. The calculation also illustrates how a dissimilarity in mean income can affect the interpretation of identical Gini coefficient. In the other cities, the remaining differences in the calculated Gini's are less than plus or minus 0.02, except in the case of Brisbane, where the difference is 0.033. In the case of the aggregation of all capital cities, the difference is 0.004, or approximately 1.25% of the renters' Gini. In examining these figures, it can be seen there is less inequality in income distribution amongst owners than renters in three out of the seven cities (Canberra, Hobart, Perth), that there is the same degree of inequality in Melbourne, whilst in Brisbane, Adelaide and Sydney there is more inequality amongst owners than renters. Furthermore, in the case of Canberra, there is a marked reduction in income inequality by comparison with the All Cities case, which the predominance of government employment in Canberra might explain.

Given that these Gini coefficients are drawn from sample data, it is unlikely that the minor differences observed are significant statistically. However, this point has not been tested.

The exploration of Gini coefficients undertaken in 1974-75 shows

\footnote{The relationship between the Gini (G), the mean income (M) and the expected difference between any two randomly selected household incomes (X) can be represented by \(2G = XM\). Using subscripts O for owners, and R for renters, we can ask if \(X_O\) could equal \(X_R\)? This will occur if \(G_O/G_R = M_O/M_R\). From Table 2, it is known that \(M_O/M_R > 1\). Hence it is necessary that \(G_O\) be greater than \(G_R\) if \(X_O\) is to equal \(X_R\). Table 4 shows this necessary condition holds for 3 cities: Perth, Hobart and Canberra. However, as \(M_O/M_R\) does not equal \(G_O/G_R\) in any of these three cities, there is no case where \(X_O = X_R\).}
similarity between the degree of inequality of income distributions for owners and renters at the aggregated level of seven capital cities. Individual city analysis confirms this, though it shows the group with the greater inequality is not the same in all cities, nor is the absolute difference between the Gini's for renters and owners constant.

This suggests that examination of sub-groups of renters and owners ought to be undertaken to see if the observed similarity still holds. This can be seen as an attempt to decompose a given inequality coefficient. Table 4, Panel B, reports the Gini coefficients for all family types with married heads, classified by age of head. For all households with married heads, the degree of inequality is now much reduced, at 0.275, from the 0.333 observed for total households. Using the age of head to partition the tenure groups, it is seen that the family class aged 45-65 demonstrates a difference in Gini's of -0.07, or some 25.4%, when renters and owners are compared.\footnote{A suggestion for further research would be to compare the differences in mean incomes of these sub-groups of renters and owners.}

The results suggest, first, that as household heads age, the degree of income inequality to be observed between renters and owners increases. Second, by age 45-65 renters as a group experience variations in income which are marked by comparison both with the two younger age groups of renters and with similar-aged owners. Third, a higher Gini coefficient emerges for owners over 65 than in the previous age group, but note the two Gini's are now closer. This could be linked with the emergence of a different pattern of income sources for owners, upon retirement, than that which characterised their working life. In particular, as persons may receive the pension above age 65, social welfare payments may become the predominant type of income received by owners and renters, consequently reducing the measure of inequality at this
<table>
<thead>
<tr>
<th>Col. 1 City or household Type</th>
<th>Col. 2 Family Type</th>
<th>Col. 3 Renters</th>
<th>Col. 4 Owners</th>
<th>Col. 5 All Households (6=4-3)</th>
<th>Col. 6 6 as % of 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Perth</td>
<td>.327</td>
<td>.314</td>
<td>.325</td>
<td>-0.013</td>
<td>-4.1</td>
</tr>
<tr>
<td>Sydney</td>
<td>.332</td>
<td>.338</td>
<td>.339</td>
<td>-0.006</td>
<td>-1.8</td>
</tr>
<tr>
<td>Melbourne</td>
<td>.325</td>
<td>.325</td>
<td>.327</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Brisbane</td>
<td>.320</td>
<td>.353</td>
<td>.346</td>
<td>+0.033</td>
<td>9.3</td>
</tr>
<tr>
<td>Adelaide</td>
<td>.307</td>
<td>.325</td>
<td>.324</td>
<td>+0.018</td>
<td>5.5</td>
</tr>
<tr>
<td>Hobart</td>
<td>.350</td>
<td>.338</td>
<td>.344</td>
<td>-0.012</td>
<td>-3.6</td>
</tr>
<tr>
<td>Canberra</td>
<td>.267</td>
<td>.257</td>
<td>.264</td>
<td>-0.010</td>
<td>-3.9</td>
</tr>
<tr>
<td>All Capital Cities</td>
<td>.328</td>
<td>.332</td>
<td>.333</td>
<td>-0.004</td>
<td>-1.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B. All Households with married heads</th>
<th>1-4</th>
<th>15-30</th>
<th>30-35</th>
<th>45-64</th>
<th>65+</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.258</td>
<td>.213</td>
<td>.228</td>
<td>.345</td>
<td>.358</td>
</tr>
<tr>
<td></td>
<td>.281</td>
<td>.200</td>
<td>.235</td>
<td>.275</td>
<td>.383</td>
</tr>
<tr>
<td></td>
<td>.275</td>
<td>.206</td>
<td>.234</td>
<td>.285</td>
<td>.378</td>
</tr>
<tr>
<td></td>
<td>+0.023</td>
<td>-0.013</td>
<td>+0.007</td>
<td>-0.070</td>
<td>+0.025</td>
</tr>
<tr>
<td></td>
<td>8.2</td>
<td>-6.5</td>
<td>3.0</td>
<td>-25.5</td>
<td>6.5</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>C. Married</th>
<th>1-4</th>
<th>6,7</th>
<th>5</th>
<th>.258</th>
<th>.365</th>
<th>.314</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.281</td>
<td>.440</td>
<td>.290</td>
<td>.275</td>
<td>.411</td>
<td>.302</td>
</tr>
<tr>
<td></td>
<td>.275</td>
<td>.411</td>
<td>.302</td>
<td>+0.023</td>
<td>+0.074</td>
<td>-0.024</td>
</tr>
<tr>
<td></td>
<td>8.2</td>
<td>16.8</td>
<td>-8.3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| D. Migrants | .316 | .230 | .287 | -0.086 | -37.4 |
| Non-Migrants | .328 | .335 | .336 | +0.007 | 2.1 |
life-cycle stage. This disaggregated approach using age of married household heads to examine whether similarity in income inequality still displays itself shows the similarity breaks down most for the age group 45-65, somewhat less for the group aged over 65, but maintains itself in regard to the two lower age groups.

Switching attention from age to marital status, the Gini coefficients for married household heads, single heads only (FT6 and FT7) and non-married heads or separated heads with children (FT5) are reported in Panel C of Table 4. In general, greater diversity between renter and owner groups is observed in regard to the degree of income inequality. In particular, the highest Gini coefficient value, 0.440, is found for head only households who are owners. For single parent households (FT5) the degree of inequality of income is greater for renters than for owners. The observation seems warranted that the similarity first observed in regard to the Gini coefficients for owners and renters diminishes if other attributes of the household are used to categorise them. However, it is interesting to note the greatest degree of inequality in income occurs amongst owners in two out of the three classes considered.

Finally, we turn to a classification based on migrant versus non-migrant status. Whilst the non-migrant renters and owners have similar Gini coefficients, there is a 37.4% difference between those for migrant households. There is also a large absolute difference between the Gini coefficient for migrant and non-migrant owners (0.105), though this feature is not repeated for renters. Again, the initial similarity in degrees of income inequality between owners and renters is diminished when a further subdivision of tenure groups is introduced.

A further exercise with this data is to examine whether the Gini coefficient for household expenditure is similar for renting and owning
households. In the ALL Cities case the coefficients were .318 for owners and .323 for renters. The figures for both household types differ by 1.6%. Given these are coefficients from sample data, the measure of inequality of expenditure by both renters and owners is remarkably similar. The interest in this finding is that expenditure is frequently argued to serve as a proxy for permanent income. If so, then renters are not those with permanent incomes which are both low and have little variation; rather, renting is a tenure choice diffused across the spectrum of permanent income in a way similar to ownership.9

 Paglin (1975) has advanced the idea that the degree of inequality in an income distribution can be decomposed into a part due to differences between household types, while the remaining part is due to intra-household type differences (where the households are all of the same type). The first part (which represents inter-family type difference) can be found by calculating a Gini coefficient based on family type, which, when subtracted from the conventional Gini, gives the Paglin-type Gini.10 Paglin's procedure can be thought of as a way of removing household life cycle influences in order to isolate the degree of inequality that can be ascribed to the remaining individual attributes of the household. Table 5 presents these values.

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9To test this argument, further research ought to examine the percentage of renters whose income (or expenditure) exceeds the median or average of owners.

10Murray (1978, p.160) provides a summary of Paglin's work.
TABLE 5
Paglin Gini Coefficients

<table>
<thead>
<tr>
<th></th>
<th>Lorenz Gini</th>
<th>Family Type Gini</th>
<th>Paglin Gini</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renters</td>
<td>.328</td>
<td>.141</td>
<td>.185</td>
</tr>
<tr>
<td>Owners</td>
<td>.332</td>
<td>.152</td>
<td>.180</td>
</tr>
</tbody>
</table>

Again the classification of households as being either renters or owners produces a Paglin Gini which has much the same value. Put differently, when we consider family types, the inequality in the distribution of income for renters and owners is much the same. Furthermore, the intra-family type distribution of income is only slightly less unequal for owners than for renters. This constitutes evidence that, if the influence of family type is eliminated, a similar degree of inequality in income distribution remains between renters and owners in 1974-75.

III. INEQUALITY OF TENURE SUB TYPES

Further exploration of inequality amongst owners and renters is possible by examining income distributions by sub-types of these two tenure groups. Owners can be divided into those who are in the process of purchasing their dwelling or those who own their dwelling outright. Tenants can be divided into those renting furnished or unfurnished dwellings, whilst the tenants of unfurnished dwellings can be further classified as having government landlords or other landlords. The tenure sub-types for renters recognise that different sub-markets for rental accommodation exist, though entry into government unfurnished accommodation may depend on non-price rationing criteria. The tenure sub-type for owners is based only on the one criterion, full equity, and is therefore in part a reflection of stage in the life-cycle, and
associated wealth accumulation.

Gini coefficients can be calculated for these tenure sub-types from the data published in the ABS 1974-75 Household Expenditure Survey, Bulletin 4, Table 4.1. It should be noted that this published data gives a smaller number of income classes, six, as compared with the data discussed in Section II. For the purpose of calculation, it was assumed the open-ended income class had a mean income which was 25% greater than the lower value of the open-ended income class. The class of rent free housing occupancy distinguished as "free rent" is ignored in Table 6, which shows the Gini coefficients calculated for All Capital Cities. Mean weekly household income, calculated from the grouped data, is also reported in Table 6.

<table>
<thead>
<tr>
<th>Tenure Sub Type</th>
<th>Gini</th>
<th>Mean Weekly Household Income ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner</td>
<td>.315</td>
<td>210</td>
</tr>
<tr>
<td>In process of purchase</td>
<td>.249</td>
<td>237</td>
</tr>
<tr>
<td>Owned outright</td>
<td>.504</td>
<td>171</td>
</tr>
<tr>
<td>Renter</td>
<td>.306</td>
<td>186</td>
</tr>
<tr>
<td>Furnished</td>
<td>.319</td>
<td>183</td>
</tr>
<tr>
<td>Unfurnished</td>
<td>.301</td>
<td>187</td>
</tr>
<tr>
<td>Government</td>
<td>.355</td>
<td>165</td>
</tr>
<tr>
<td>Other Landlord</td>
<td>.283</td>
<td>194</td>
</tr>
</tbody>
</table>

The following features of Table 6 are noteworthy. The average incomes of owners and renters, and the Gini coefficients, are different from the All Capital Cities values reported in Table 4. This may cause surprise, given the
data comes from the same survey. However, it reflects the fact that there are only six income classes from which to calculate the values shown and that the 'rent free' category has not been included in the calculations, whereas it was in Section II. The results are therefore not strictly comparable. However, the purpose of the analysis is to reveal the pattern of inequality in the context of this finer division of tenure types. Renters' income, with a Gini of .305, is revealed to be slightly more equal than owners, with a Gini of .315. The difference in Gini coefficients is 2.8%. The owning group as now seen to be not homogeneous. The Gini coefficients for outright owners are substantially different, being approximately twice that of those in the process of purchase. This result is as expected. Those who own outright include the aged, many of whom receive pensions as their sole income source. Hence the distribution of income amongst the outright owners is markedly unequal. Since those in the process of purchasing will have satisfied the minimum requirements of mortgage lenders as to their ability to repay the housing loan, this relative homogeneity is reflected in a lower Gini coefficient. Turning to renters, furnished renters have a Gini higher than unfurnished renters, indicating relatively greater inequality in the income distribution. Within the unfurnished group, there is a reflection of the well known fact that household incomes of tenants in government accommodation varies markedly. The Gini coefficient for this group is the second largest reported. The Gini for the tenants of other landlords, by comparison, indicates this sub-tenure type has a lesser degree of inequality, and a higher mean income.

The results reported in Table 6 show the feasibility of breaking down the original Gini coefficients for owners and renters by sub-tenure classes. The most important finding is that the similarity to be observed at the aggregate
level of the renter-owner dichotomy is reduced once the sub-types of tenure are distinguished. In regard to owners, the differences are greater, and it was hypothesised this occurs because life-cycle influences are at work. In regard to renters, the range of the calculated Gini calculated was less, being 0.283 to 0.355. It was conjectured that market and institutional factors, as well as life cycle factors, may explain that reduced range.

IV. CONCLUSION

The prime concern of this paper has been the observation that ABS survey data showed a surprisingly similar degree of household income inequality for renters and owners as measured by Gini coefficients. The result was obtained using data aggregated over seven capital cities and, to a lesser degree, using data for the capital cities separately. The question now posed is the meaning of this finding, for it is undeniable that a number of interpretations are possible. One simple interpretation is that the result obtained was a chance one, and that the observed similarity would be unlikely to occur again. Until more evidence accumulates, that possibility cannot be ruled out. Another interpretation, with more substance, is that the similarity in inequality is more likely a statistical artifact, connected with the fact that all the income distributions obtained from the ABS survey contained open-ended income classes. The arbitrary assumptions made, first, concerning what mean to use for the open-ended class and, second, that the selected mean was the same for owners and renters, could have contributed to the similar Gini coefficients obtained. Another assumption possibly contributing to the similarity in inequality observed in Section II was that households in the "rent free" group were treated as renters. An alternative procedure would have been to recognise them as a separate tenure group. Both factors are
mentioned, in case further evidence of similar Gini coefficients is found, as being worth investigation to decide if the similarity is due to the statistical procedures used.

The third explanation possible is that the similarity in income inequality is predominately the result of data aggregation, since the dichotomy of owner versus renter the highest possible order of aggregation that could be chosen. It was shown that the inequality observed increased when various family type sub-divisions of owners and renters were examined. For increases in the age of the household head amongst married households the degree of inequality observed rose, both for owners and renters, but more so for renters in the age range 45-65. Additionally, with categorisation of the two tenure groups by marital type, there was revealed a greater difference, especially for one person households. An examination by migrant status showed the Gini coefficients to diverge. This suggests that age of the household head in married households, the marital status of the household head, and also the household's migrant status are associated with the degree of household income inequality to be observed, but in a way which remains to be quantified. The second approach to inequality decomposition through the use of tenure types (in Part III) also showed that the observed similarity tended to dissipate. The most spectacular case occurred with outright owners, where the Gini coefficient for purchasers and owners differed by a factor of 2. It is concluded that grounds exist to argue that the similarity in Gini coefficients is a product of aggregation and that data disaggregation, by either family type or tenure type, removes the spurious similarity. How much of the inequality remains after disaggregation was investigated by calculating a Paglin type Gini. The calculation showed, if Paglin's interpretation is accepted as valid, that slightly more than half of the inequality was due to
intra-family type variation.

One final complication in interpreting the Gini coefficients needs to be recognised, however briefly, at this stage. This is the problem that exists if the Lorenz curves of the household income distributions being compared cross. In that circumstance, the Gini coefficient is not a value judgement free measure of inequality. The problem arises as follows. Suppose the Lorenz curve for owners cuts that for renters from above. The cutting implies the income share of the bottom portion of the distribution for renters, for any point to the left of the crossing, will be lower than for owners. However, above the cross-over point, the reverse situation holds, for the income distribution becomes more unequal amongst owners. Consequently, in such a case, the "Gini coefficients are not purely 'statistical' and they embody explicit judgements about the weights to be attached to the inequality at different points on the income scale" (Atkinson, 1983, p. 56). Thus Gini coefficients have a limitation for discussing inequality, which this paper does not explore in any depth.\footnote{The frequency of a crossing of the Lorenz curves was examined in regard to the 1974-75 tenure groups discussed in Section III. Given that there are eight groups, it is possible to make 28 pair-wise comparisons of the Lorenz curves. Of these, 15 did not cross. However, the remaining 13 comparisons would be subject to Atkinson's qualification.}

Supposing we were to accept the similarity in income inequality at its face value, setting aside momentarily the various interpretations just discussed which question that similarity, and ask what could account for it. One answer would be as follows. Murray (1978) has shown that a large proportion of the variation in earnings in Australia can be ascribed to four factors: age, for income rises with age; sex, for males earn more than females; education, for earnings rise with the level of education; and work...
effort, for earnings rise with the number of hours worked. Now, if upon
dividing an income distribution into tenure groups, a similarity in Gini
coefficients is found, the most plausible explanation lies in the tenure
groups both being equally composed in regard to these four factors. If so,
then the result reported in this paper is not exceptional. Put differently,
the similar degree of inequality observed is hypothesised to be caused by the
operation of these four factors on the income of owners and renters in a like
fashion. It should be noted the hypothesis predicts that if the renter and
owner groups formed for examination differ from the population as a whole,
then Murray's four factors will act so as to make the respective household
income distribution received either more or less unequal. In such a
circumstance, different Gini coefficients would be predicted for renting and
owning groups. Furthermore, the difference between the estimated Gini
coefficients will be greater the more the age, the sex, the education, and the
hours worked of the respective tenure groups depart from the mean for the
population. It is clear a basis for forming an a priori view about
differences between the income distribution of owners and renters exists in
this argument. However, to test the conjecture would require cross
tabulations for the two tenure groups which are unavailable currently.

The question begged by the preceding explanation of why much the same
Gini coefficients were obtained is how could the tenure choice of individuals
be different, yet each tenure group still be representative of the overall
population in 1974-75? The answer to that may be found, first, in the
operation of housing markets in Australia which have afforded opportunities to
households across a wide income range to become home owners. These incentives

12Those who believe analyses should proceed from the initial statement of a
theory may transpose this discussion to the beginning of Section III.
to home ownership have ranged from government provided capital subsidies to first time owners to the relative abundance, and hence cheapness, of land in Australia (Neutze, 1981). This first explanation stresses the ease of access to home ownership in Australia in order to explain the paradox. Second, renters include sub-groups such as employees supplied with company housing or well-off persons who value living near to the city centre but who, despite their income, cannot afford to own housing so close to the city centre. The effect of such sub-groups is to create substantial diversity amongst renters, including many households on higher incomes.\textsuperscript{13} This second explanation stresses occupational and locational reasons why well-off households may elect to rent. Taking both explanations into account goes some way to explaining the paradox that the 1974-75 Gini coefficients of income inequality are similar for groups who choose different tenure forms, viz, owning or renting.

Is the examination of the income distribution of owners and renters via Gini coefficients justifiable in the light of this discussion? The chief advantage resides in the ability of the Gini to summarise in a single measure a given income distribution. Having said this, Part II showed it would be unwise to regard a single comparison of Gini coefficients as fully revealing. Consequently, disaggregation of data by family type and tenure type, where the data permits, has much to commend it. Furthermore, when the Gini coefficients were analysed in this manner, they were found to be consistent, first, in terms of their interrelationships, and, second, with the

\textsuperscript{13}The interaction between these well-off renters and those outright owners on low incomes derived wholly, or mainly, from the uniform aged pension produces a low estimate of the income elasticity of the probability of home ownership (Reece and Griffiths, 1981). Estimates of the income elasticity of demand for housing in Australia (Yates, 1981, Flood 1983) have also shown low income elasticities. These findings support the view advanced that there has been widespread access to home ownership in Australia.
existing literature on Australian housing markets. This consistency and compatibility with prior research favours their use. But having said that, it must be conceded that Gini coefficients remain a descriptive, not an analytical, technique. It will not solve the problem of where to direct housing assistance within the existing income distribution. Additionally, a disadvantage of using the Gini coefficient stems from the distinct possibility that its technical nature may not be fully understood, particularly by policymakers, though this could be expected to diminish with increased usage over time. Another disadvantage is that it is also not a value free statistic for comparative purposes, if the Lorenz curves cross over. The alternative would then be to use some other statistic, such as, for example, the coefficient of variation. However, a Gini coefficient is far more capable, if we recall the second of its two interpretations, in serving the purpose of establishing how wide is the expected range of renters' income. A statistic which links the mean of the distribution to the expected difference between any two randomly selected incomes conveys a reminder that the income of renters is varied and challenges the stereotype that renters are uniformly 'poor'. Hence the further strength of the case for using the Gini coefficients is that it can effectively remind us of the diverse incomes of households which rent. If these arguments are accepted, researchers presenting income distributions for owner and renters ought to go a step further and summarise that information in terms of Gini coefficients. Computer aided calculation facilitates such a step. As suitable Australian data is now available from both the Census, and from the irregularly held ABS Household Surveys, the opportunity exists to accumulate evidence about the income distribution of owners and renters. Furthermore, the evidence could be utilised to observe trends, over time, or between regions, in inequality, though interpretation of any detected trends would be
a complex and demanding task.\textsuperscript{14} On balance, the topic of the income
distributions of renters and owners ought to be pursued on academic grounds.
This conclusion is strengthened because income distributions have a broad, but
nevertheless important, implication for housing policy.

Household income surveys, including the 1974-75 ABS Survey analysed here,
demonstrate that renting is not confined to low income households. The
finding of similar Gini coefficients for renters and owners in this pilot
study highlights that point. Thus any housing policy that postulates renters,
as a group, constitute the lower end of the overall income distribution is
clearly inappropriate because attempts to benefit poor renters will benefit
simultaneously those who are well off. The findings reported here support the
argument that a public policy of assistance towards renters, which gives
benefits to them as a class, should be means tested.\textsuperscript{15} Furthermore, policy
which deals with tenancy matters, for example, legislative provisions
governing the respective rights of tenants and landlords, and which seeks to
benefit tenants, needs careful scrutiny when renters and landlords as groups
may have similar income distributions. The reason for so arguing is that the
possibility cannot be ruled out that the tenant who benefits from such
legislation may have a higher income than the landlord he rents from.

\textsuperscript{14} A recent Victorian survey (ABS, 1983, Table 3) of nature of occupancy by
annual household income for Melbourne allows comparison with the results in
Table 4. The Gini coefficients for 1983, with the 1974-75 Gini coefficients
being shown in brackets are: owners .325 (.325); renters .354 (.325); all
households .337 (.325). More inequality in the household income of renters is
observed in 1983. The difference in household weekly income for any two ran-
domly selected households would be $157 (owners) and $130 (renters) in 1983.

\textsuperscript{15} For example, the Taxation Review Committee (1975, 7.58) proposed that to
eliminate the inequity imposed upon renters by failing to tax the imputed
rental income of owners, renters be allowed a tax deduction for rental
expenditure. Clearly, if all rental expenditure was made deductible, and
particularly if the rate scale was progressive, then rich renters would
benefit more than poor renters under such a proposal.
REFERENCES


Australian Bureau of Statistics (1983), *Housing Victoria*, No. 8790.2, Canberra, AGPS.


Department of Social Security (1982), *Housing Characteristics of Migrants*, Canberra, AGPS.


