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Housing wealth as retirement saving: Does the Australian model lead to over-consumption of housing?

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Abstract
Owner-occupied housing has long been seen as a key pillar of retirement saving in Australia. The Australian elderly receive a relatively small amount of their income from occupational pensions, have high home ownership and private saving, and Australia is particularly unusual in that the majority of the aged population receive an income and assets-tested aged pension (which excludes the owner-occupied home).

Does this model contribute to making the Australian elderly asset rich but income poor? How does pattern of housing wealth accumulation in Australia compare with that in other countries? This paper examines these questions using data from eight countries in the Luxembourg Wealth Study together with comparable Australian household survey data.

Australian income and housing wealth patterns in retirement are very different to those of the other eight countries. After retirement, incomes fall more steeply and housing wealth is higher. Even though housing consumption as a share of total consumption increases after retirement in all countries, this increase is particularly steep in Australia (and possibly the US).

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1. Introduction

For the last half-century, home ownership has been considered a central pillar of Australian retirement planning. This has been reinforced by tax and benefit subsidies for owner-occupation. Has this pattern led to an excessive proportion of the wealth of Australia's aged being locked up in housing?

Castles (1998) has described the high home ownership rates in Australia (and the other new-world English-speaking countries) as complementary to the relatively weak retirement income-transfer programs of those countries. Several causal relationships have been advanced to explain the association between high ownership and low levels of welfare state expenditure. The high costs of home purchase during the working years might reduce public support for higher taxation, home ownership in retirement might reduce the need for pension income, or low pension levels for the average older person might provide an incentive for home ownership (Kemeny, 1980, Jones, 1990, Castles, 1998).

However, there are potential problems with using housing to save for retirement. High levels of home ownership investment can distort consumption in retirement towards housing consumption and away from non-housing consumption. In addition, although the service flows from housing wealth contribute to the consumption of the aged, the wealth itself is often passed on to children and so does not directly finance aged consumption. Unlike social insurance (or privately purchased annuities) there is no inbuilt longevity insurance associated with housing wealth, and so the wealth is retained as a form of precautionary saving rather than being used to finance consumption.

AHURI (2004), echo an often-stated view that

> the majority of the [Australian] elderly are asset rich but income poor. They have few means of using their assets to generate income and the present treatment of assets in pension policy is a disincentive to doing so.

The objective of this paper is to compare Australian housing wealth patterns across the lifecycle with those in North America and Western Europe. Do the Australian elderly hold particularly high levels of housing wealth? Does this lead to a relative over-consumption of housing? Does the Australian experience provide guidance for housing and social insurance policy in other countries whose home ownership rates are now increasing?

Australian housing policy has a number of features that set it apart. Ellis and Andrews (2001) show that aggregate housing wealth (relative to income) is particularly high in Australia. From levels comparable to those of other countries in the 1980s, total housing wealth (including rented housing owned by other households and corporations) as a proportion of disposable income rose substantially in Australia in the wake of financial market deregulation.

Ellis and Andrews focus on the role of urban structure to explain the high share of wealth held in the form of housing in Australia. Australia has more large cities and fewer medium size cities than other comparable countries. They argue that this pattern will lead to an increase in average housing prices, and that this pattern could explain

around one-third to one-half of the gap between Australia and the USA in the housing/income ratio.

Though there are substantial tax concessions for owner-occupied housing in Australia (particularly capital gains tax exemption), similar or greater concessions are common in most other rich nations. For example, France, Germany, Italy, the UK, the USA and Sweden all permit some mortgage interest to be tax deductable (Ellis and Andrews, 2001, Table 3). However, one policy area where Australian policy is atypical is among the elderly, where wealth held in owner-occupied housing is exempt from the Age Pension means test. Though the owner-occupied home is often exempted from means tests in social assistance programs, only in Australia is a means-tested pension such an important part of the retirement income package.

Over 75 per cent of Australians of pension age receive an Age or a (war) Service Pension.[1] These are subject to both an income and an assets tests. (Some assets are subject to both tests, with a deemed rate of return applied to the asset). The definition of assets is very comprehensive, but with an exception for own-occupied homes. For people with a moderate level of non-housing wealth, moving wealth from housing to non-housing form (eg by moving to a lower-valued house) will decrease pension income significantly. The effect varies depending on the investment decisions made, but for a single Age Pensioner at around age 70, moving to a cheaper dwelling and thus shifting $100,000 of their wealth from home ownership into a concessionally-treated investment stream will reduce their pension by about a quarter.[2]

Though their total income will increase due to the investment return, this assets test amounts to a very large additional tax to be paid on the income from this investment stream. In this example, the pension is reduced by $3,650, while the annuity income is only $10,000 (which includes both interest and balance draw-down). Compared to the situation under social insurance-type schemes where the pension is unaffected by asset allocations, this provides a substantial incentive to keep wealth in own-home in retirement.

The exemption of owner-occupied homes from the assets and income tests could thus discourage trading down to less valuable houses and might also increase the magnitude of bequests.[3] It could also encourage pre-retirement households in Australia to direct a larger fraction of their saving to housing rather than to more liquid assets.

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[1] See Whiteford and Angenent (2002) Figure 13 for data up to 1999.

[2] Calculation is made for January 2007, where the asset test had the same structure as for the data shown in this paper. The asset test taper rate was reduced in mid 2007, but the outcome is similar. The following assumptions are made. The pensioner is a home owner, with total wealth of $700,000 initially all held in their own home. The $100,000 is assumed invested in a concessionally-treated complying annuity providing an annual annuity income of 10% of the wealth transferred to the annuity with a 15 year life expectancy. She has no other income and no transaction costs are included. For reference, the mean household net worth of people aged 65-74 in 2003-04 was around $630,000, and the base pension rate in 2007 was $13,300 per annum. See Bradbury (forthcoming) for more details. See also Piggott and Sane (2008) who show the incentive effects associated with a different set of investment assumptions.

[3] Of the countries considered in this paper, only Australia and Canada have no estate or inheritance taxes (Luxembourg Wealth Study, 2008).

However, there are many other reasons why people might wish to maintain an investment in housing. Housing is a familiar asset and also provides significant consumption value. Retaining the 'family home' provides stability and precautionary saving against future expenditure requirements such as for nursing care.[4] More generally, the existence of policies such as the assets test exemption might itself have arisen from long-standing community attitudes towards the role of housing in maintaining retirement living standards.

Previous research in this area has pointed to the income-equalising nature of this housing wealth among the retired population. Whiteford and Kennedy (1995) examined the living standards of the aged in a number of OECD countries, taking into account both cash and non-cash (education, health and housing) income sources. Imputed income from housing had a strongly equalising effect among the aged, particularly in Australia and the USA (and to some extent Canada), but not in European countries.[5] This reflects the relatively high levels of home ownership among the elderly in Australia and the USA. Similarly, Ritakallio (2003), concluded that taking housing costs into account substantially narrowed the gap in aged poverty between Australia and Finland.

Matching this high level of home ownership however, is the relatively low disposable income of the average Australian older person. In the mid-1990s, the Australian elderly had the lowest relative incomes (compared to the national average) across 19 OECD countries (Förster and Pellizzari, 2000, Table 2.3). This paper provides similar evidence for the early 2000s. Including housing increases the resources of the Australian elderly up to a more internationally typical level, but this potentially implies an unbalanced pattern of consumption (when compared to the international norm). Does this suggest a greater role in Australia for policies and procedures that can better finance non-housing consumption in old age, such as home equity withdrawal products or a greater facilitation of trade-downs to smaller dwellings?

Though home equity withdrawal products have only recently started to appear, the question of the extent to which the elderly do draw-down their housing wealth has attracted considerable research interest. In the USA, there is mixed evidence. Haider et al (2000) find some evidence that retirees do tend to move their wealth into non-housing forms. Fisher et al (2007), on the other hand, conclude that home equity increases after retirement with few retirees leaving home ownership or increasing their housing debt.

Churi and Jappelli (2006) compare home ownership rates across different age groups in several countries and find that home ownership rates decline after retirement in most countries – but are relatively flat in Australia and the US. In many countries, however, this is mainly a cohort effect, with cohort-adjusted ownership rates in most countries being much flatter over time (though generally still declining). They were not able to test for 'trading down' (while still remaining a homeowner) and, like most of the studies in this area, their data is confined to private households. This means that

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[4] See Davison et al (1993) for more information on older people's attitudes to housing.

[5] See also (Yates, 1991, 1994) for more Australian evidence.

they do not examine the transition into nursing homes or similar non-private dwellings. This limitation is shared by the data presented later in this paper.

Overall, it seems that in some countries there is evidence that some elderly release housing equity by moving house, but that this only applies to a minority of households, with most elderly people reluctant to leave their long-term family home. Disney and Whitehouse (2002) summarise these results as

> The evidence that pensioner households use house moves to release equity is strong, but many elderly households are reluctant to move at all, even when they have high potential values of housing equity. Large houses (relative to income) are both a blessing and a curse (p32).

To date, there has been little internationally-comparable information on the quantum of wealth held in owner-occupied housing and how this varies across the lifecycle. This paper presents new data on these housing wealth patterns for nine rich nations (Australia, Canada, the UK, the US, Germany, Italy, Finland, Norway and Sweden). These data is drawn from the Luxembourg Wealth Study (LWS), together with comparable Australian data – and are described in the next section.

Section 3 then describes aggregate wealth holding patterns and introduces the measurement concepts used here. Despite very high levels of home-ownership, the Australian elderly maintain a relatively small proportion of their assets in owner-occupation. However, such comparisons based on measured wealth stocks can be misleading, because they do not include rights to future pensions – which are higher in most other countries. To address this issue, this paper compares the flow of consumption of services from the owner-occupied dwelling with disposable income and non-housing consumption.

Section 4 contains the main results. Australian income and housing wealth patterns in retirement are very different to those of the other eight countries. After retirement, incomes fall more steeply and housing wealth is higher. Even though housing consumption as a share of total consumption increases after retirement in all countries, this increase is particularly steep in Australia (and possibly the US). The story for low-income households is broadly the same (Section 5). The paper concludes with a discussion of the policy implications of these unusual wealth-holding patterns.

2. The Luxembourg Wealth Study

The Luxembourg Wealth Study (LWS) seeks to provide a harmonised household-level database containing information household wealth, income and demographic characteristics. The initial release includes data from eight countries, Canada, the USA, the UK, Finland, Norway, Sweden, Germany and Italy.[6] To this is added data from two Australian household surveys conducted by the Australian Bureau of Statistics (it is anticipated that some of this data will be added to a future release of the LWS)

The data sources for these countries are shown in Table 1. The LWS surveys are mainly household surveys like the Australian data, but in the Scandinavian countries they are based on a combination of interview and administrative register data. The LWS surveys provide income on wealth for various years between 1998 and 2002 (ie roughly between the two Australian surveys). Two surveys from the USA are included. The Survey of Consumer Finances (SCF) is believed to have better coverage of wealth data than the PSID, but has a smaller sample size.

[6] The data presented here were extracted from the LWS in February 2008. I am grateful to Markus Jäntti for extracting data from the beta version of the LWS which was used in an earlier version of this paper.

Table 1 Data sources

Country		Year[a]	Source (all except Australia via Luxembourg Wealth study)	Approx sample size (households)	Special features
AU98	Australia	1998-99	ABS: Household Expenditure Survey	7,000	
AU03	Australia	2003-04	ABS: Household Income and Expenditure Survey	11,000	
CA99	Canada	1999	Survey of Financial Security	16,000	Family unit. Over-sample of high-income areas
UK00	UK	2000	British Household Panel Survey	5,000	
USP01	USA (PSID)	2001	Panel Study of Income Dynamics	7,000	
USS01	USA (SCF)	2001	Survey of Consumer Finances	4,000	Over-sample of high-income
FI98	Finland	1998	Household Wealth Survey	4,000	Interview and register data
NO02	Norway	2002	Statistics Norway: Income Distribution Survey	23,000	Interview and register data
SE02	Sweden	2002	Statistics Sweden: Wealth Survey	18,000	Interview and register data
GE02	Germany	2002	Socio-Economic Panel	12,000	Over-sample of high-income
IT02	Italy	2002	Bank of Italy: Survey of Household Income and Wealth	8,000	

Note: a) The year indicated is the year in which the survey was conducted. The value of the stock variables such as household wealth and demographic composition apply to this year. In most countries, the flow variables such as income refer to a previous time period, such as the previous financial year. This difference has been ignored in the analysis here.

Some key reference indicators for these countries and years are shown in Table 2. The PPP (Purchasing Power Parity) index is an index of the number of units of the national currency (in the specified country and year) that would be needed to buy the same quantity of goods from a given basket as would be purchased by one US dollar in the USA in 2002.

Column 6 uses this index to calculate GDP per capita on a common currency basis. Norway and the US have the highest living standard when calculated on this basis, followed by Sweden and then Australia in 2003-04. Australian real incomes in 1998-99 were 11.4 per cent lower than in 2003-04 when calculated on this basis. We should

not place too much weight on these precise values. If GDP is deflated by the CPI, the real income gap between the two years is somewhat less at 9.4 per cent.[7]

Column 7 presents an alternative indicator of national living standards, disposable income per household as recorded in the different surveys. Here the USA has a higher income than Norway, followed by Canada and then the two Australian surveys. These different rankings represent the different size of the state in different countries (eg low taxes and services in the USA means a relatively higher disposable income), but also might reflect differences between the survey coverage of household incomes and the GDP concept.

Table 2 Key reference indicators

LWS code	Country	Year	GDP/capita ('000, national currency, current prices)	PPP index (US 2002)	GDP/capita ('000 USD 2002)	Disposable income/ household ('000 USD 2002)	House price to rent ratio relative to long-term average	Cohort effect on home ownership (%pt per year)
1	2	3	4	5	6 (=4/5)	7	8	9
AU98	Australia	1998-99	32.1	1.215	26.4	30.5	1.06	0.00
AU03	Australia	2003-04	41.7	1.401	29.8	32.5	1.68	0.00
CA99	Canada	1999	32.3	1.119	28.9	35.7	1.08	0.07
UK00	UK	2000	16.3	0.607	26.8	30.2	1.00	0.98
USP01	USA (PSID)	2001	35.5	0.983	36.1	50.4	1.04	0.15
USS01	USA (SCF)	2001	35.5	0.983	36.1	46.2	1.04	0.15
GE02	Germany	2002	26.0	0.959	27.1	28.3	0.96	0.33
IT02	Italy	2002	22.7	0.825	27.5	28.0	1.06	1.13
FI98	Finland	1998	23.8	0.923	25.8	24.9	1.08	0.59
NO02	Norway	2002	337.6	9.142	36.9	37.5	1.34	na
SE02	Sweden	2002	265.7	9.365	28.4	25.5	1.20	0.53

Notes: Source; columns 4 to 6, SourceOECD, extracted 26/10/07. Australian data are based on averages of the two calendar years. Finland data are in 1999 Euros. The PPP (purchasing power parity) price index is calculated as the multiple of the PPP index (relative to $US) for the given year and the US implicit price deflator for GDP (relative to 2002).
column 7, LWS and ABS, see Table 1;
column 8 (OECD, 2005);
column 9, calculated from Churi and Jappelli (2006), Figure 2.

The 8th column of the table presents information on the cyclical state of the housing market in the given year in each country. This shows the mean dwelling sale price relative to mean dwelling rent, compared to the long term average of this ratio. The largest divergence is apparent for Australia in 2003-04, where prices compared to rents were almost 70 per cent above their long-term trend. This reflects the housing

[7] The 1998-99 CPI is 0.849 of the 2003-04 value whereas the PPP ratio is 0.867. This difference reflects the difference between price indices for GNP vs price indices for households and the indirect method of calculating the PPP indices (via the US GDP deflator).

boom of the preceding years. In no other countries were house prices so much at variance with their long-term averages. Norway is closest, at 34% above the average. (The strong growth in US house prices came after 2001).

Finally, column 9 is a summary of the work of Churi and Jappelli (2006). They compare cross-sectional with cohort-adjusted patterns of home-ownership rates between age 50 and 80. In most countries, cross-sectional data shows a significant drop in home ownership rates across this age range. When they take account of cohort differences in home ownership, however, this drop is generally smaller. Column 9 is calculated as 1/30 of the gap between the cross-sectional and cohort-adjusted home ownership change across this age range. For example, they find that home ownership rates for the UK elderly fall by about 30 percentage points between age 50 and age 80. Once they adjust for cohort effects, they find essentially no drop in home ownership with age. The story in Italy is similar, though with smaller cohort effects in the other countries. These estimates of the impact of cohort effects should not be considered precise.[8] Churi and Jappelli do not have data for Australia, but in the light of the very stable patterns of home ownership over time (Bradbury, forthcoming), it is assumed that there is no cohort effect in Australia. This reflects the fact that home ownership rates in Australia (and other countries such as the USA and Canada) have been high for many years, whereas in the other countries they have been increasing.

In Section 4 these results are used to make an approximate adjustment to the cross-sectional data to estimate what the pattern might be like if we could control for cohort patterns in ownership rates. Note, however, that we have no data to control for cohort differences in housing wealth among home-owners.

[8] Note also, that this summary of their results assumes a linear trend. They actually estimate a quadratic trend with the differences generally concave downwards – implying that the effect of cohort changes on intermediate ages might not be as large as the estimates we use here.

3. Describing cross-national patterns of housing wealth

We begin this comparison with an overview of the wealth portfolio allocation of the elderly in eight countries (excluding Norway). Table 3 presents some initial results published from the LWS. This table suggests that the share of wealth held in the form of owner-occupied housing is not particularly high in Australia (only 56%).[9] Finland, Germany, Italy and the UK all have higher housing wealth shares and only the USA and Sweden have significantly lower shares. On the other hand, the percentage of the population living in owner-occupied housing is very high in Australia (83% – equal-highest with the USA).

Table 3 Wealth portfolio allocation of the elderly in 8 countries

	Australia	USA	Canada	Finland	Germany	Italy	Sweden	UK
Principal residence	56	35	55	60	66	65	47	69
(% home owners)	(83)	(83)	(74)	(77)	(52)	(77)	(58)	(69)
Investment real estate	13	21	12	23	20	18	12	5
Financial assets (excl. trusts)	32	44	33	17	14	17	41	26
Total assets	100	100	100	100	100	100	100	100
Total debt	2	6	5	1	6	1	11	2
Home-secured	0	5	4	1	4	0	na	1
Net worth	98	94	95	99	94	99	89	98

Notes: Source: Australia, 2003-04: (Australian Bureau of Statistics, 2006) Tables 20 and 21. Other countries, 1998 – 2002: (Sierminska, Brandolini and Smeeding, 2006), Tables 1 and 3, using the beta version of the Luxembourg Wealth Study (LWS).
For Australia, the population is households where the reference person is aged 65 or over. For other countries, the population is households where either the head or spouse is aged 65 or over. Excluded from the LWS data are life insurance and unrealised pension assets, business assets and debt, vehicles, household durables and collectibles. Some of the latter items are available in the ABS data, but are not included here for comparability. In Australia, superannuation account balances are included but not entitlements to defined benefit plans or other income streams.

However, a focus on wealth allocations of this type can be misleading. If we take a broader view of wealth as including all rights to future consumption, we should also include the value of future pension entitlements.[10] These entitlements include both

[9] This wealth share drops even further to 48.5% if we include wealth held in businesses, trusts, vehicles and household effects, and would drop even further if we controlled for the high housing prices in 2003-04. See (Headey, Marks and Wooden, 2005) and (Harding, King and Kelly, 2002) for earlier estimates of Australian wealth holdings by age.

[10] It is arguable whether one should follow this approach as a general principle. Future entitlements are different from current holdings in several ways. For example, you cannot pass on future pension

public pension entitlements as well as private pensions that deliver income streams. These income streams are relatively small in Australia where the Age Pension is paid at a flat rate and occupational pensions are often paid out as lump sums rather than as income streams. If entitlements to income streams were included as part of wealth, the share of owner-occupied housing in total wealth would be substantially smaller in the other countries.

An alternative approach is to focus on the corresponding consumption patterns of the elderly. If the Australian elderly are keeping too large a share of their wealth in housing, this is potentially a problem mainly because of its impact on their consumption patterns – it prevents them using the wealth for other forms of consumption.

An accounting framework for the examination of the relationship between housing and consumption is illustrated in Figure 1. This describes the relationships between the economic concepts of disposable income, imputed rent, full income, saving, consumption and expenditure. The first column shows the allocation of household *disposable income* to non-housing consumption (purchases of goods and services other than housing), rent, mortgage repayments (interest and principal) and non-housing saving (the increase in value of other assets). Cash saving can be negative if people are drawing down on their non-housing assets, in which case the sum of non-housing consumption, rent and mortgage repayments will be greater than disposable income.

Unlike most other assets, housing also provides consumption services as well as being an investment. *Imputed rent* is the income that the household could be receiving if it were renting its home to itself. It is defined here as the gross rent that would be obtained for the dwelling, minus the maintenance costs and (inflation-adjusted) interest costs of financing the dwelling. One way of estimating gross rent is as a function of the value of the house and land.[11] In Australia, 5 per cent of the gross house value has commonly been used as an estimate of the likely rental value of a dwelling (at least in periods with 'normal' house prices). Here, we assume that this fixed fraction of dwelling value (adjusted for the house price cycle) is a reasonable estimate of rental value in all the countries. Davis et al, 2008, estimate a similar value for the US but we do not have evidence for the other countries. In discussing these results we focus mainly on the differences across age groups in each country rather than placing too much emphasis on the absolute level of housing wealth or imputed rent.

The '*full income*' concept shown in the figure adds capital gains to disposable income and imputed rent. (It does not include the other non-housing elements that some might include in such a concept, see note to the table). *Saving* is defined as those flows that add to the stock of the household's wealth. Here this includes (real) mortgage principal repayments, non-housing saving and capital gains.

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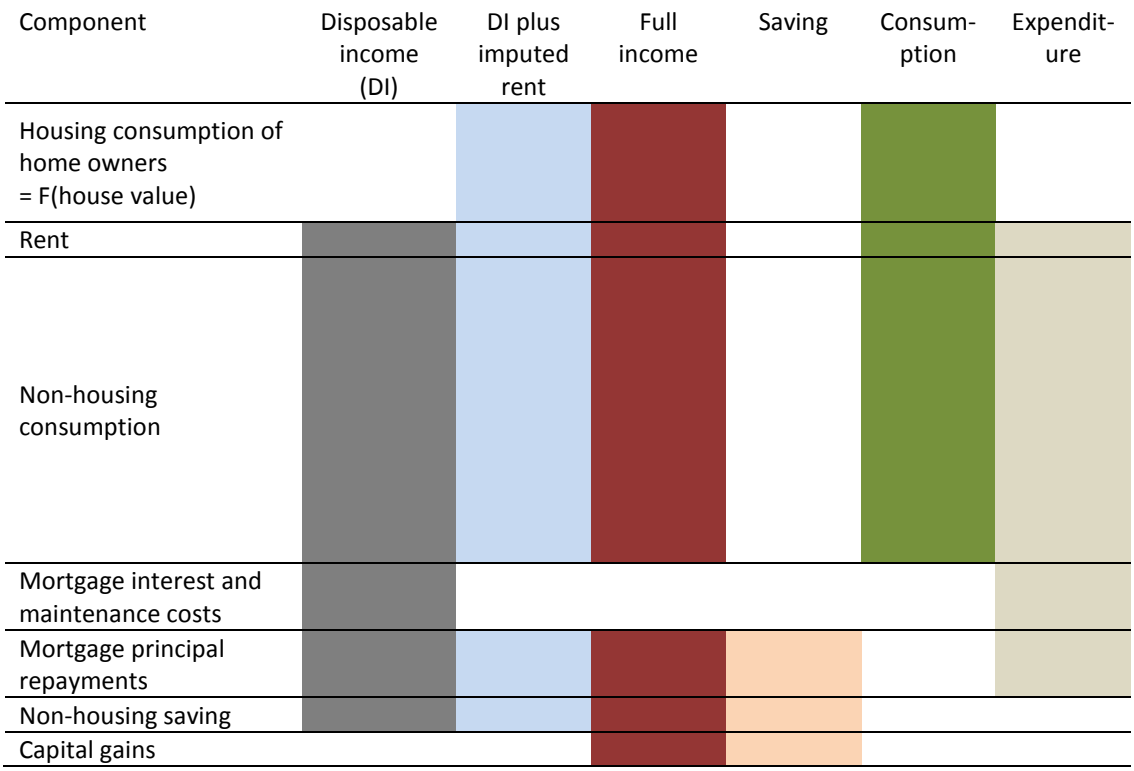
entitlements to heirs (except for spouses in some cases). Nonetheless, from the perspective of the financing of living standards in retirement, it makes sense to include entitlements such as future pension rights in a symmetrical way to wealth holdings.

[11] Other approaches have also been used. See Yates (1991, 1994) and Saunders and Siminski (2005).

Consumption, which is the focus here, is full income minus saving. It has two components, housing and non-housing consumption. As shown in the final column, this is different from *expenditure*.

Figure 1 Housing-related income and consumption concepts



Notes: Excludes non-housing durables, state and employer-provided non-cash income, value of home production and the value of leisure. Mortgage components assumed be on an inflation-adjusted basis.

It can be seen from this figure that non-housing consumption can be estimated from several sources. One approach is to subtract rent, mortgage interest, maintenance, mortgage repayments and non-housing saving from disposable income. Another is to collect data on non-housing expenditure. We do not have suitable expenditure data, but we can approximate the first approach by deducting rent and mortgage payments from disposable income. This omits the deduction of household maintenance and non-housing saving (which might be negative for the elderly).[12]

The key variables used in this paper are thus defined as follows

Disposable income This is total household cash income, minus income tax and compulsory employee social security contributions. Negative incomes are set to zero.

Equivalent disposable income quintile within age group Equivalent income is calculated as disposable income divided by the square root of the number of people in the household (top-coded to 6 to match the Australian data). Households are sorted by

[12] Some forms of asset draw-down, such as income from annuities, are generally included in disposable income, and so would be included in this measure of non-housing consumption.

equivalent income within each five-year age group and then the lowest fifth in each age group is placed in the first quintile group.

Age of female household head Because of data limitations, we are unable to categorise people according to their individual age. We therefore use the ages of the household head and the spouse of the head to classify households. Where the household head does not have a spouse, we use the head's age. Where the head is partnered, we use the age of the female partner. This approach is used to maximise household continuity as the members age (because the male partner is more likely to die first). *Exception*: In Canada the age is the age of the household head (probably mainly male in couples, but we do not have information on this).

Rent Annual rent paid for the dwelling. In the UK this is gross rent paid before reductions due to housing benefit.[13]

Housing costs Rent plus mortgage principal and interest payments (ideally, maintenance expenditures should also be included).[14] *Exceptions*: In Canada, Finland and Sweden, mortgage principal payments are not included. Not available for USS01, Norway and Germany.[15]

Owner-occupied housing wealth This is the market value of the dwelling (usually as estimated by the respondent). Set to zero where the dwelling is not owned by any household members. For farms, only the value of the dwelling and immediate surrounding land area is included. *Exception*: In the Norwegian file this variable is the taxable value of the residence and is considered to substantially under-estimate the market value.

Home ownership Households with positive owner-occupied housing wealth are defined as home-owners.

Own-housing consumption: 5 per cent of *owner-occupied housing wealth* adjusted for the house price to rent ratio (ie divided by column 8 of Table 2).

Housing consumption: Own-housing consumption plus *rent*.

Non-housing consumption: *Disposable income* minus *housing costs.* NB the definitional exceptions for housing costs in some countries. Only Australia, the UK, the USA (USP01), and Italy include mortgage principal repayments in housing costs. In Canada, Finland and Sweden, calculated non-housing consumption will thus be too high.

Total consumption: *Housing consumption* plus *non-housing consumption*.

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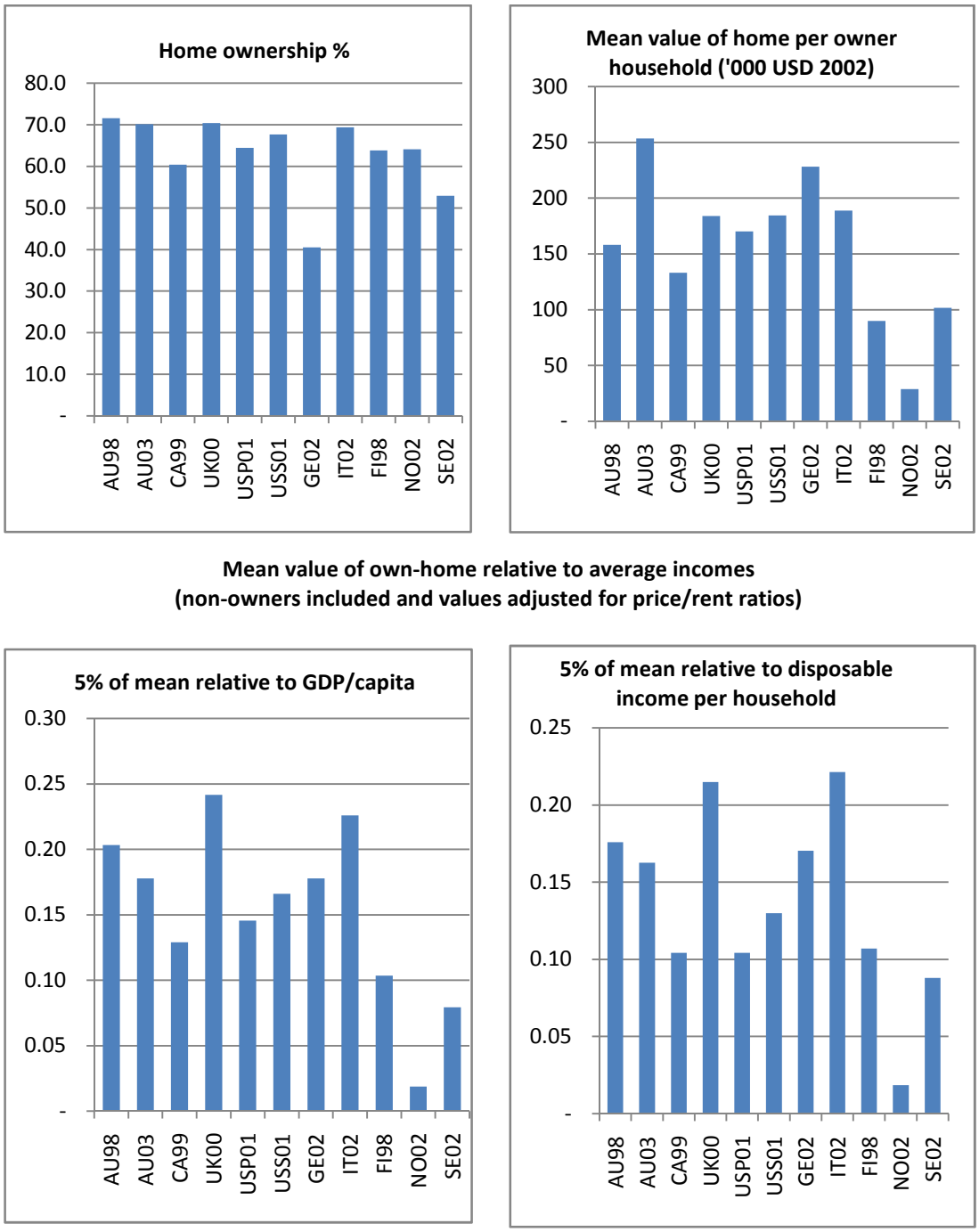
[13] The LWS variable RIXP is used (plus NRCBEN for the UK). Rent is set to zero for home-owners (because RIXP also includes mortgage payments).

[14] LWS variable RIXP (plus NRCBEN for the UK).

[15] German data is nominally available in the data, but has been excluded because of high fraction of missing data.

Figure 2 begins by presenting several different indicators of home ownership wealth (for all ages) across the different countries. In most countries, home-ownership rates are between 60 and 70 per cent. Australia, the UK, Italy and the US are at the upper end of this range. Home ownership rates are much lower in Sweden and especially Germany, where only 40 per cent of households own their own home.

Figure 2 Home ownership and own-home values



Notes: See Table 1 for data sources. See Table 2 for PPP adjustment factors and GDP/capita. The lower two panels adjust for cyclical variation in price/rent ratios by dividing by column 8 in Table 2. Renters are included with zero own-home value.

The second panel of the figure shows the mean house value, averaged across home-owning households only. The high value of Australian homes in 2003-04 stands out. German homes are also expensive, suggesting that the small fraction of the population who are home-owners live in high quality dwellings. The Nordic countries have low home ownership values, though for Norway this probably represents measurement error.

Income levels across these countries vary, as does their place in the house price cycle. The bottom two panels in the table thus show home ownership wealth relative to two different measures of average national incomes and adjusted for the price/rent ratios. In order to summarise the overall propensity to have own-home wealth, these averages are calculated across all households (with non-home owners having zero housing wealth). The 5 per cent of the mean own-home wealth can be interpreted either as an estimate of own-home consumption, or simply as an adjustment to put the stock of housing wealth on approximately the same basis as the flow of income.

The picture is similar irrespective of the income measure used as a comparison. Averaged across the whole population, relative to income and controlling for the housing price cycle, Australia is by no means exceptional in terms of its own-home housing wealth patterns. Both the UK and Italy have higher levels of relative own-home wealth. Australian relative housing wealth is a similar percentage of income in Germany (despite Germany having a low home-ownership rate), and higher than in the remaining countries.

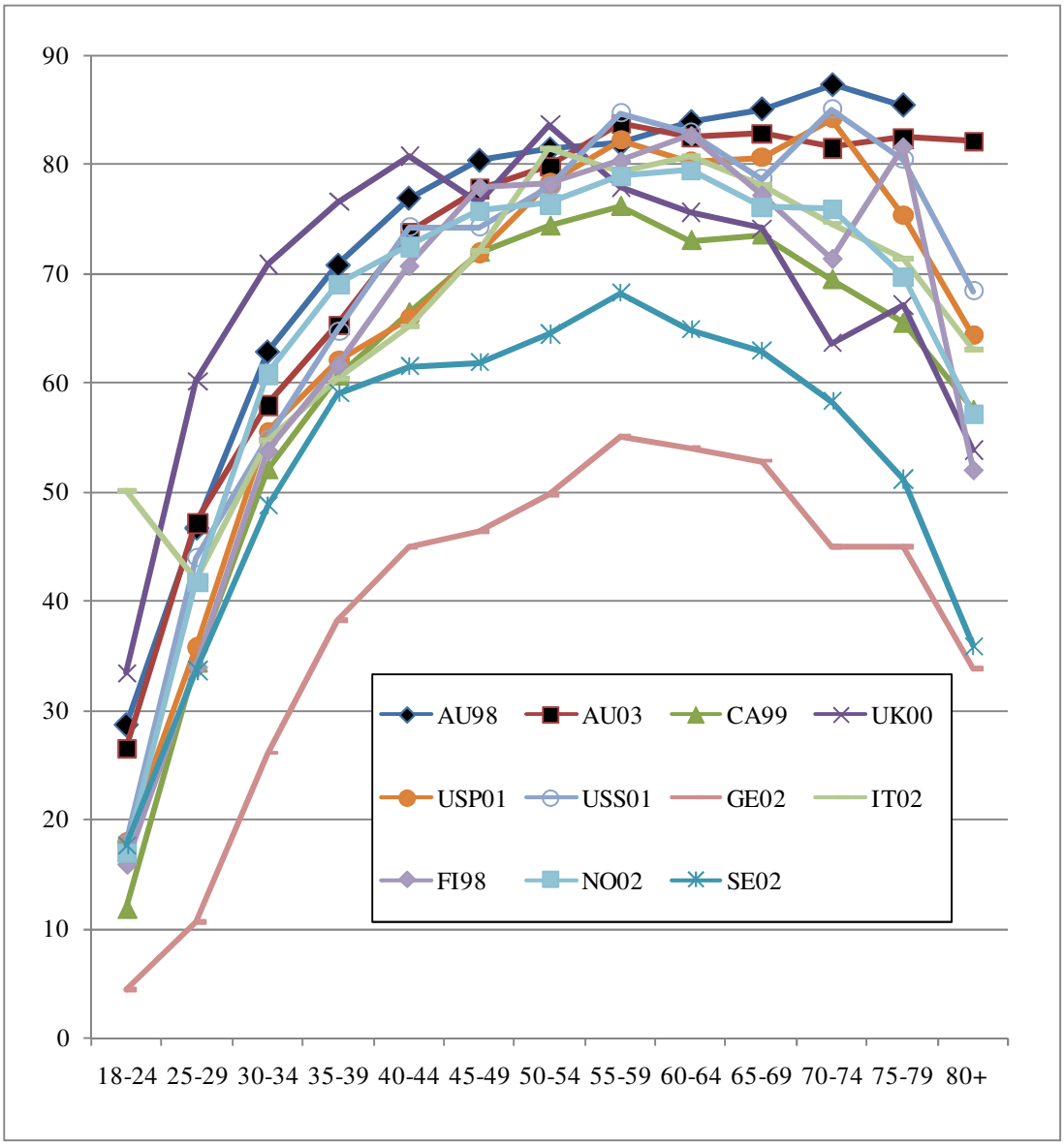
On this adjusted basis, Australian housing wealth is slightly lower in 2003-04 than in 1998-99. This is because the adjustment for house price/rent ratio cancels out all of the real house price gain between these two years. At the same time, however, real incomes grew significantly over this period (6 or 13 per cent, depending on which measure of income is used), which leaves housing wealth smaller relative to income. It is possible that this adjustment over-compensates for the housing boom of the early 2000s, as some of the factors that led to the housing boom (eg changes in capital gains tax rules) also encouraged investment in rental housing – and thus deflated rents from the level that they would otherwise have had. This suggests that the 1998-99 estimates might be a better description of the long-term pattern in Australia compared to other countries.

4. The age-profile of housing wealth holdings in different countries

Though the overall pattern of home ownership wealth in Australia is not unusual in the cross-national context, the pattern across the lifecycle is quite different.

Figure 3 shows home-ownership rates by age in each of the nine countries. Sweden and particularly Germany have low home ownership rates at all ages. For the other countries, ownership rates for the middle-age groups are all similar. At age 50-54, for example, home ownership rates range from 74 to 82 per cent. In the retirement years, however, the picture changes. Australian home ownership rates remain high, but those for most other countries decline substantially. For the 70-74 age group, Australian home ownership rates are 87 or 81 per cent and the USA rate is similar, but all other countries have rates below 76 per cent (though Finns aged 75-79 have high ownership rates).

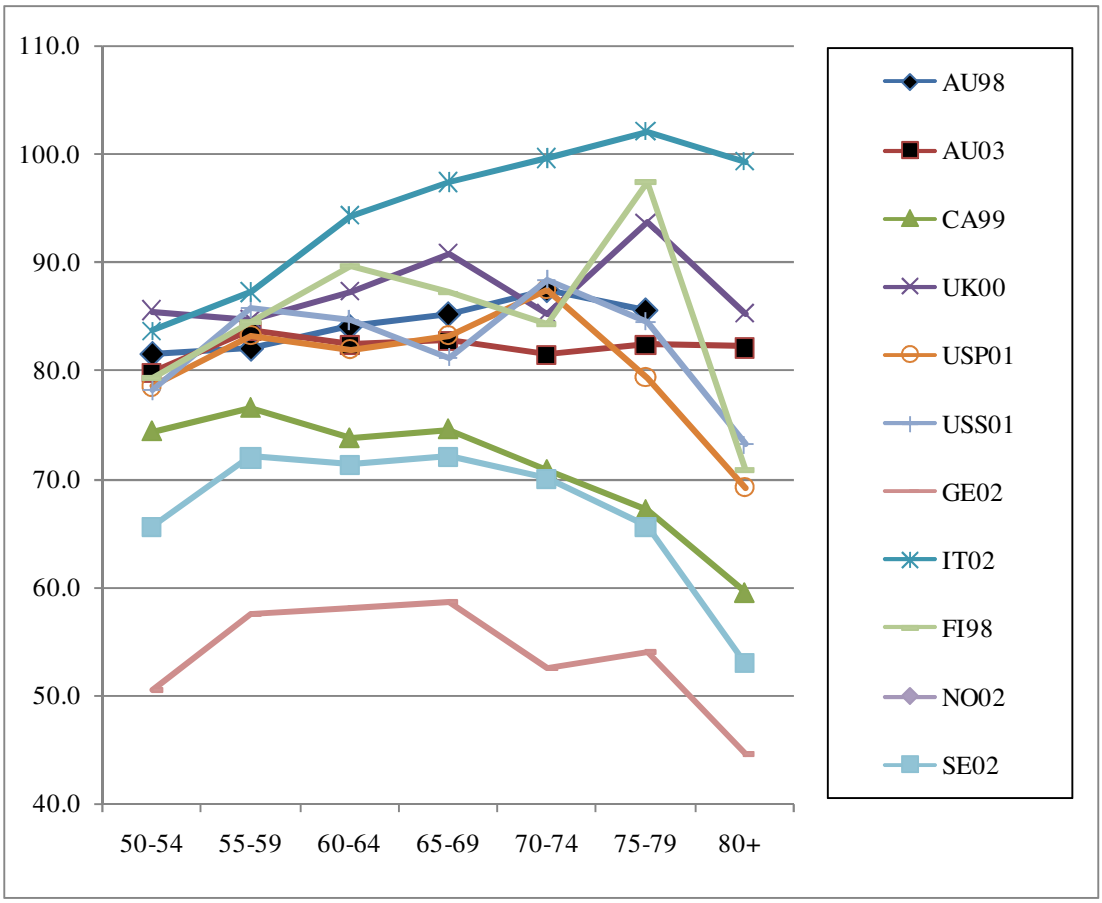
Figure 3 Home-ownership rates by age of female head



Source: LWS and ABS data. See Table 1.

The research of Churi and Jappelli suggests that much of this fall in home ownership rates with age is actually a cohort rather than a lifecycle effect. Their estimate of the magnitude of the difference between unadjusted home ownership rates and rates holding cohort effects constant was summarised in the last column of Table 2. In Figure 4 this difference is added to the previous figure in order to obtain an estimate of home ownership rates that might occur in the absence of cohort effects. That is, an upward linear trend is added to the lines in Figure 3, with the slope given by the last column of Table 2. Zero cohort effect is assumed for Australia.

Figure 4 Estimated home-ownership rates holding constant cohort effects (age 45+)



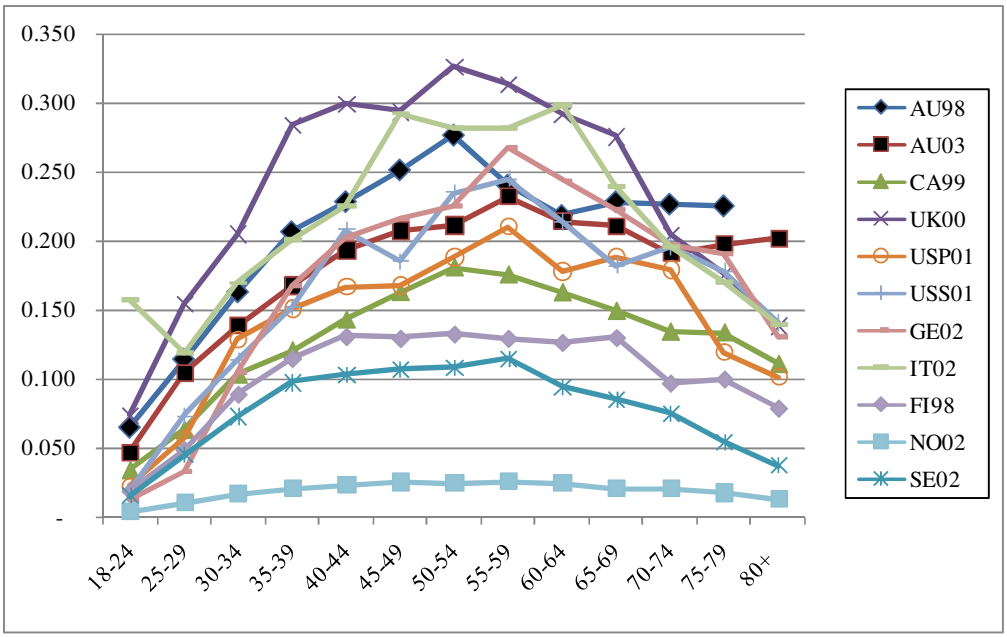
Source: LWS and ABS data and calculations based on Churi and Jappelli (2006). See Table 1. Data not available for Norway.

This adjustment cannot be considered as anything other than a rough approximation of the cohort effect, but it does provide an indication of the likely importance of this effect. For Italy, this leads to an unrealistic over-compensation, with rates rising above 100 per cent. For the UK, this adjustment cancels out the fall in home ownership with age, suggesting that this fall is largely a cohort effect. Home ownership rates still fall with age in Canada, Sweden and Germany (and the USA at older ages).

Turning to housing wealth, Figure 5 shows the mean own-home wealth (or consumption) by age in each of the countries, scaled by national income levels. (Un-scaled PPP adjusted estimates can be found in appendix Figure 19). These estimates also adjust for the cyclical position of the house/rent ratio but not for any cohort effect. At age 55-59, Australians have similar own-home[16] housing wealth levels to those in the USA and Germany, and lower levels than Italians and particularly those in the UK. By age 70-74, there is substantial convergence (though the USA PSID data records a lower level of housing wealth). The Canadians and the Nordic countries have lower levels of housing wealth at all ages. As noted above, the Norwegian housing wealth data is likely to be very much under-reported, and so is omitted from many of the following figures.

Of more interest than the overall levels of wealth, however, are the patterns across the lifecycle.[17] All countries other than Australia show a large reduction in own-home housing wealth after age 60. This is partly due to the fall in home-ownership rates with age described above, but also due to lower house values among older owners (see Appendix Figure 20). In Australia, on the other hand, the level of own-home wealth is relatively stable after age 60. It drops a little in 2003-04, and is higher for people in their 50s in both years, but the pattern across ages is clearly much flatter than that in the other countries.

Figure 5 Mean own-housing wealth/consumption relative to GDP/capita (5% of mean adjusted own-home wealth, non-owners included)



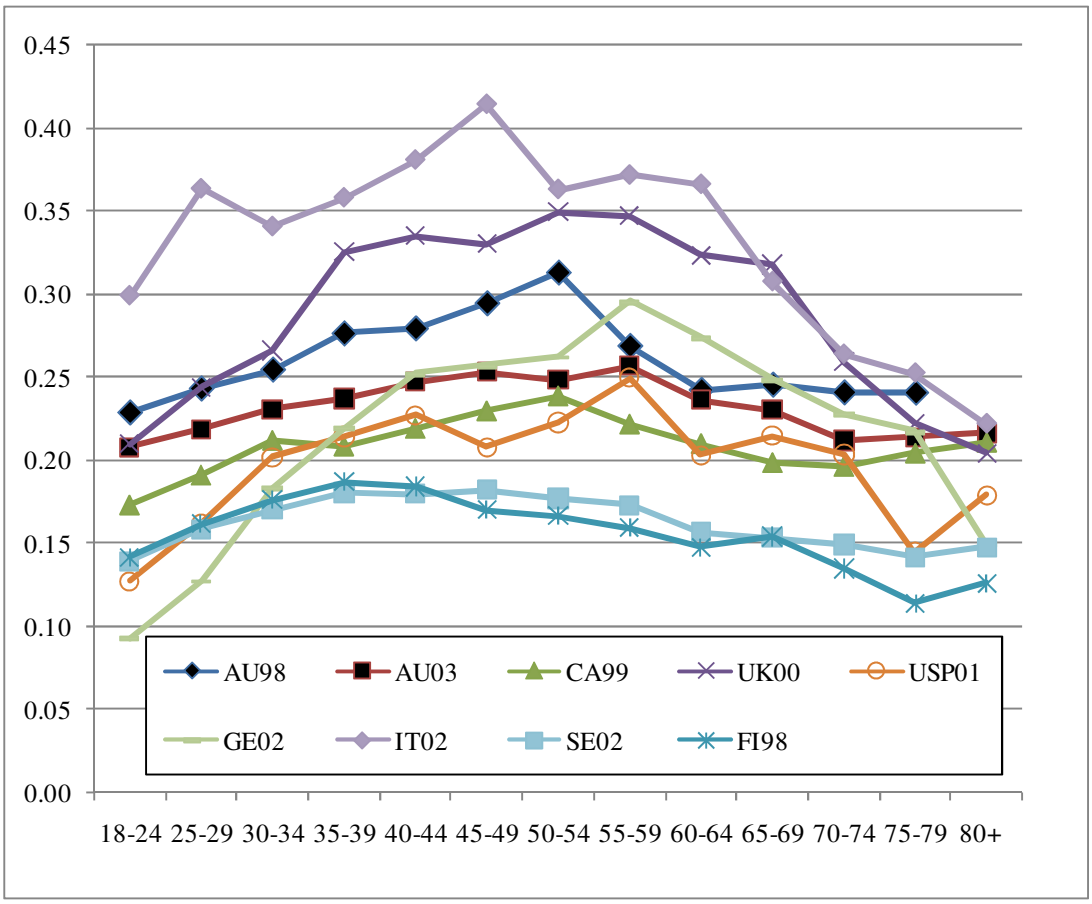
Source: LWS and ABS data. See Table 1. Adjusted own-home wealth is own-home value deflated by column 8 in Table 2.

[16] For data on housing wealth held by households in the form of rental investments or second dwellings (holiday houses) see Table 3.

[17] As noted earlier, the 5% gross rental rate might not be cross-nationally comparable because of variations in the housing markets.

This pattern does not necessarily mean that the elderly in most countries are living in smaller or poorer quality houses. Greater rental housing expenditure could conceivably compensate for the lower level of own-home housing consumption among the elderly. Figure 6 provides estimates of total housing consumption – including both the consumption of owner-occupied housing and the consumption of rented housing. The total of these is expressed relative to GDP/capita.

Figure 6 Mean housing consumption relative to GDP/capita (5% of mean adjusted own-home wealth plus annual rent, divided by GDP/capita)



Source: LWS and ABS data. See Table 1.

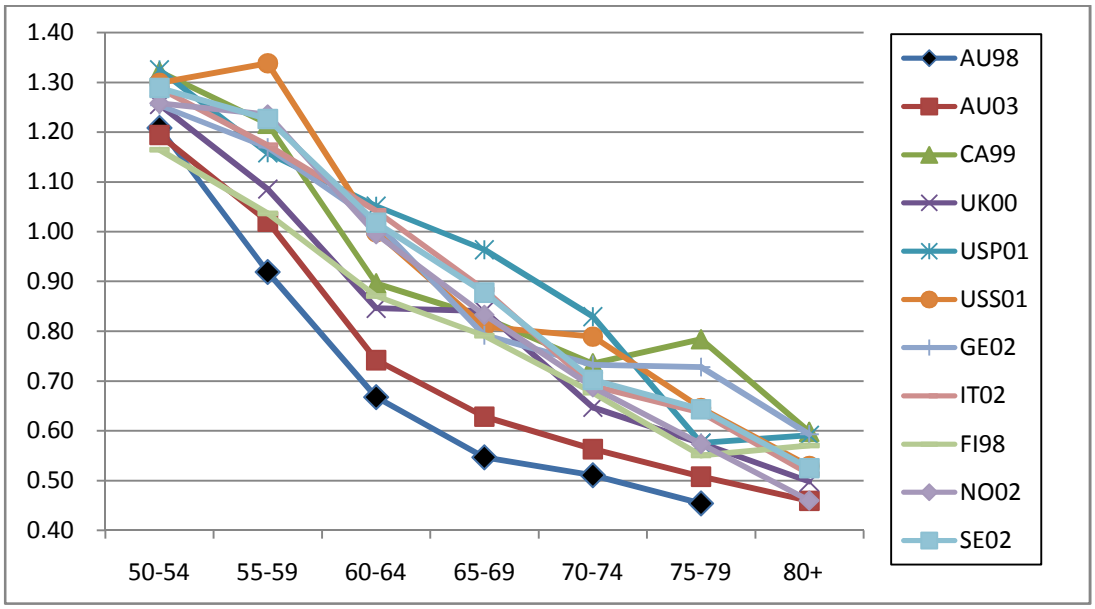
The inclusion of rental expenditure means that across-lifecycle curves are now much flatter than in Figure 5. Though housing consumption is still higher in the middle years, this could be due to the different numbers of people living in the household (no adjustment for household size is made in these calculations). Average housing consumption relative to GDP/capita varies quite a bit across countries, with consumption particularly high in Italy and the UK, and low in Sweden and Finland.

The UK and Italy are also the two countries that have very dramatic falls in total housing consumption after age 60. The Australian total housing consumption curves remain relatively flat after this age, but once rental expenditures are included, several other countries also have relatively flat housing consumption profiles. Canada and Sweden are flat after age 60, Finland falls by a relatively small amount, and there appear to be falls in the USA and Germany though the patterns are volatile.

These estimates of total housing consumption are based on quite strong assumptions – gross rental returns from owner-occupied housing is assumed constant across countries (and ages) and the price of rental housing is assumed comparable in the different countries (and across ages). For example, if a country had rental subsidies for housing occupied by the aged (for either public or private rental) then this would appear here as a fall in housing consumption with age.[18] Nonetheless, the Australian pattern of total housing consumption across age groups, though relatively beneficial to the aged, is not the dramatic outlier that it might appear on the basis of own-home consumption. In terms of life-cycle patterns of housing consumption, the UK and Italy appear the more unusual cases, with quite strong falls in housing consumption among the older groups.

However, household income also decreases in retirement. Moreover, this income fall is greatest in Australia. Figure 8 shows the ratio between the mean household income of people in different age groups, relative to the mean disposable income across all ages. Between age 50-54 and age 70-74, household income drops by around 56 per cent in Australia, compared to around 43 per cent for the other countries.[19]

Figure 7 Household disposable income of age group, relative to overall household disposable income



Note: Mean household income of individuals. See Appendix Figure 21 for income values.
Source: LWS and ABS data. See Table 1.

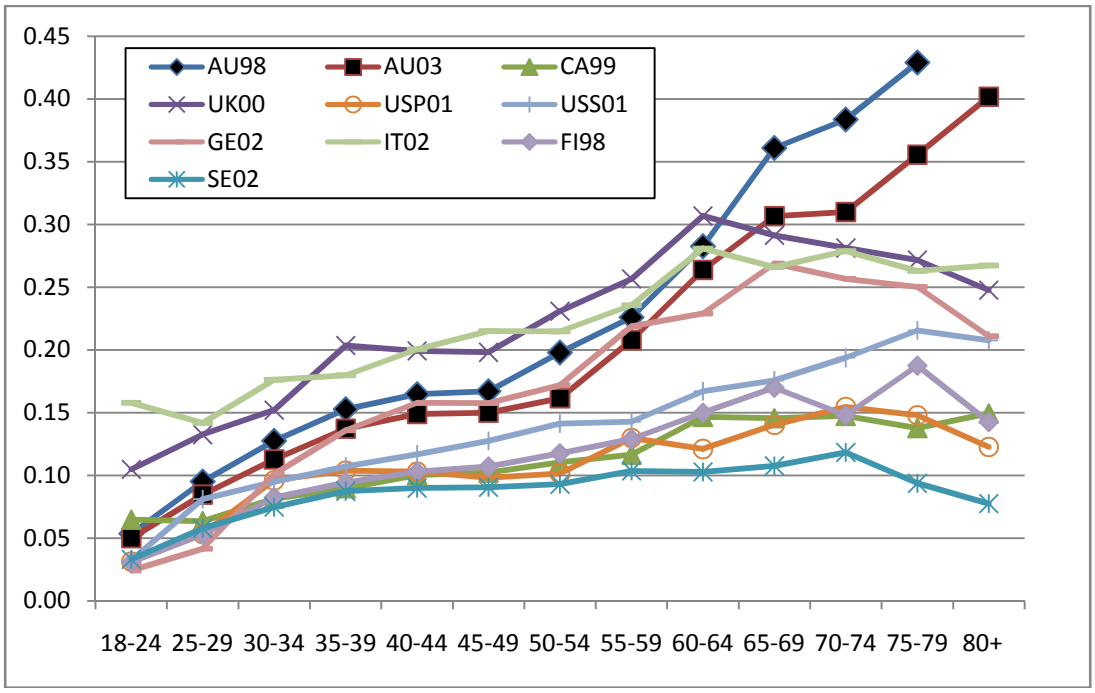
Figure 8 compares own-home wealth with this income measure. This shows the ratio of own-home ownership consumption to disposable income in each age group. (That is, the numerator in Figure 5 divided by that of Figure 7).

[18] The impact of the UK housing benefit is removed, but similar data for other countries was not available. See footnote 13.

[19] See Whiteford and Kennedy (1995) for similar patterns in earlier years.

Australia has a distinct across-age pattern in each of these figures and this is magnified in their ratio. In Australia, the consumption flows from own-home ownership in the 70-74 year old group are around 31 to 37 per cent of disposable income, with even higher levels for the older age group. All other countries have lower values, though the UK, Italy and Germany are not far behind.

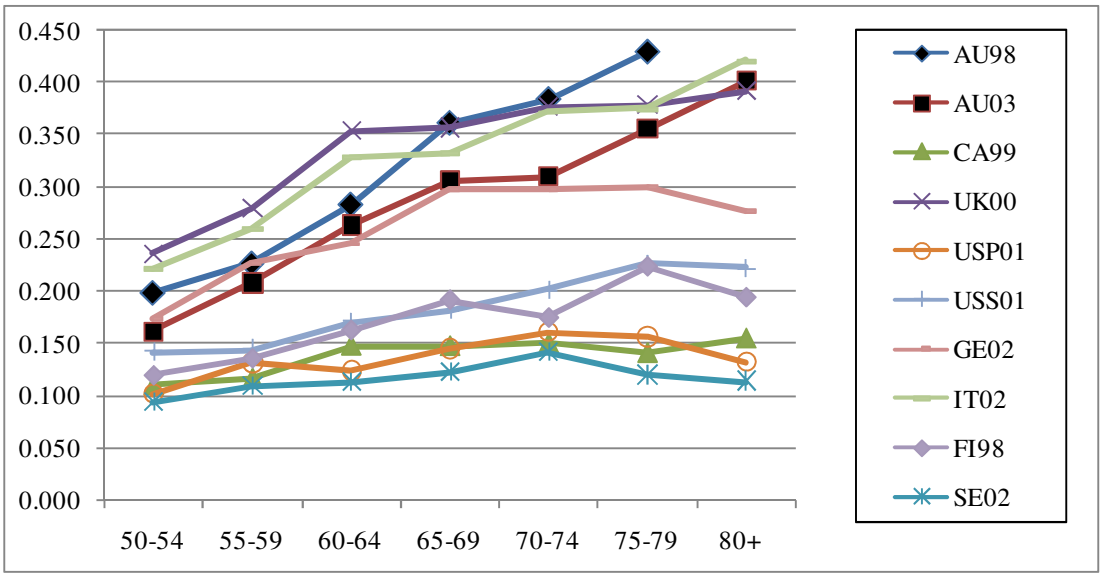
Figure 8 Mean own-home consumption relative to disposable income (5% of adjusted own-home wealth relative to the disposable income of the age group)



Note: Calculated as 5% of the ratio of Appendix Figure 19 to Appendix Figure 21.

Part of this Australian distinctiveness arises from the cohort effect in home ownership rates discussed above. In Figure 9 we estimate what home wealth patterns might look like if there had not been the cohort effects of home ownership rates described by Churi and Jappelli. With this (albeit crude) adjustment the Australian pattern of aged housing consumption is now similar to those of Italy and the UK. Hence, we might expect these countries to catch up to the Australian patterns over the next decades.

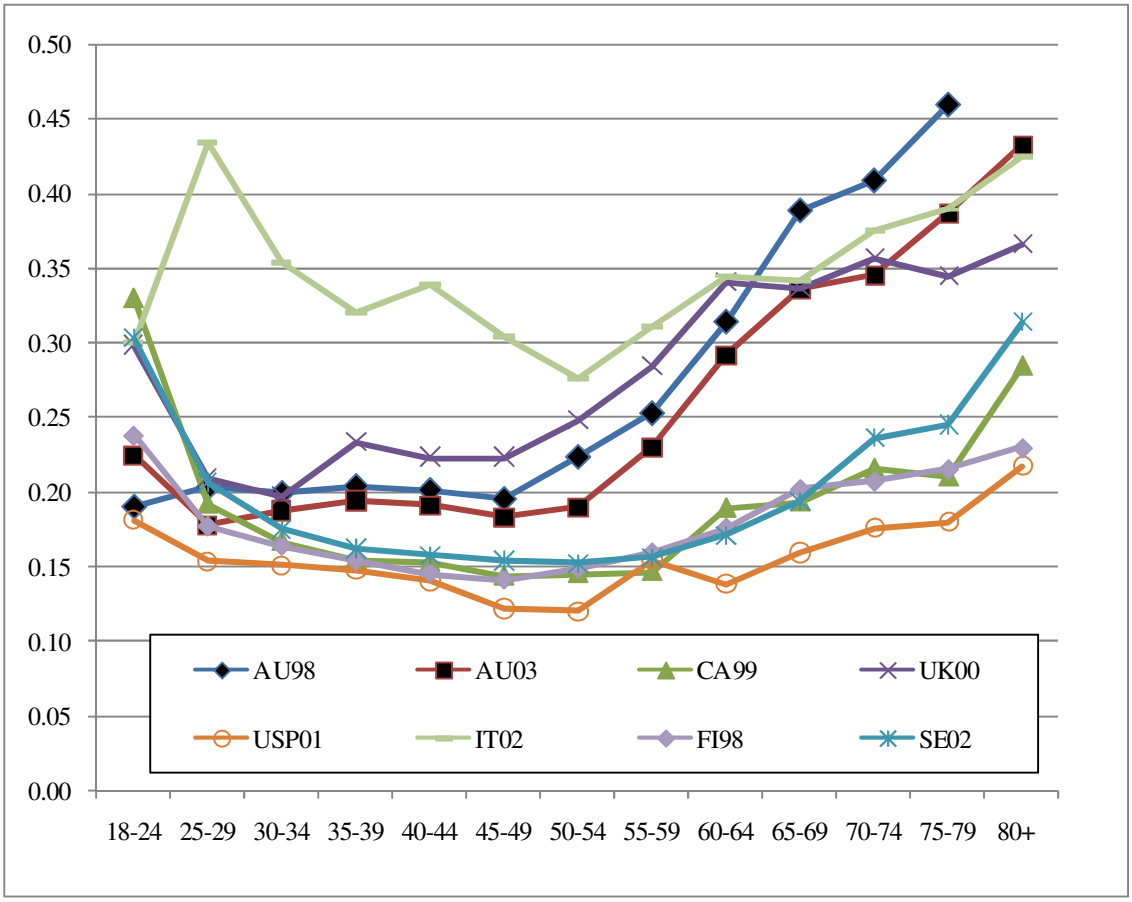
Figure 9 5% of adjusted own-home wealth relative to disposable income of age group, adjusting for cohort effects



Note: Calculated as Figure 8 times the ratio of Figure 4 to Figure 3.

Returning to total housing consumption (rather than just consumption of own-home housing services), Figure 10 shows housing consumption relative to disposable income across the lifecycle. In most countries, housing consumption increases relative to income as people age. The Australian elderly continue to have a relatively high level of housing consumption compared to income (compared to both the Australian non-elderly and to the elderly in other countries). The UK pattern is now closer to that of Australia, though the difference between the elderly and non-elderly is still greater in Australia. Italian households appear to have high housing consumption levels across all age groups, possibly pointing to problems with the Italian income data.

Figure 10 Total housing consumption relative to disposable income (5% of adjusted housing wealth plus rent paid divided by disposable income of age group)



Source: LWS and ABS data. See Table 1.

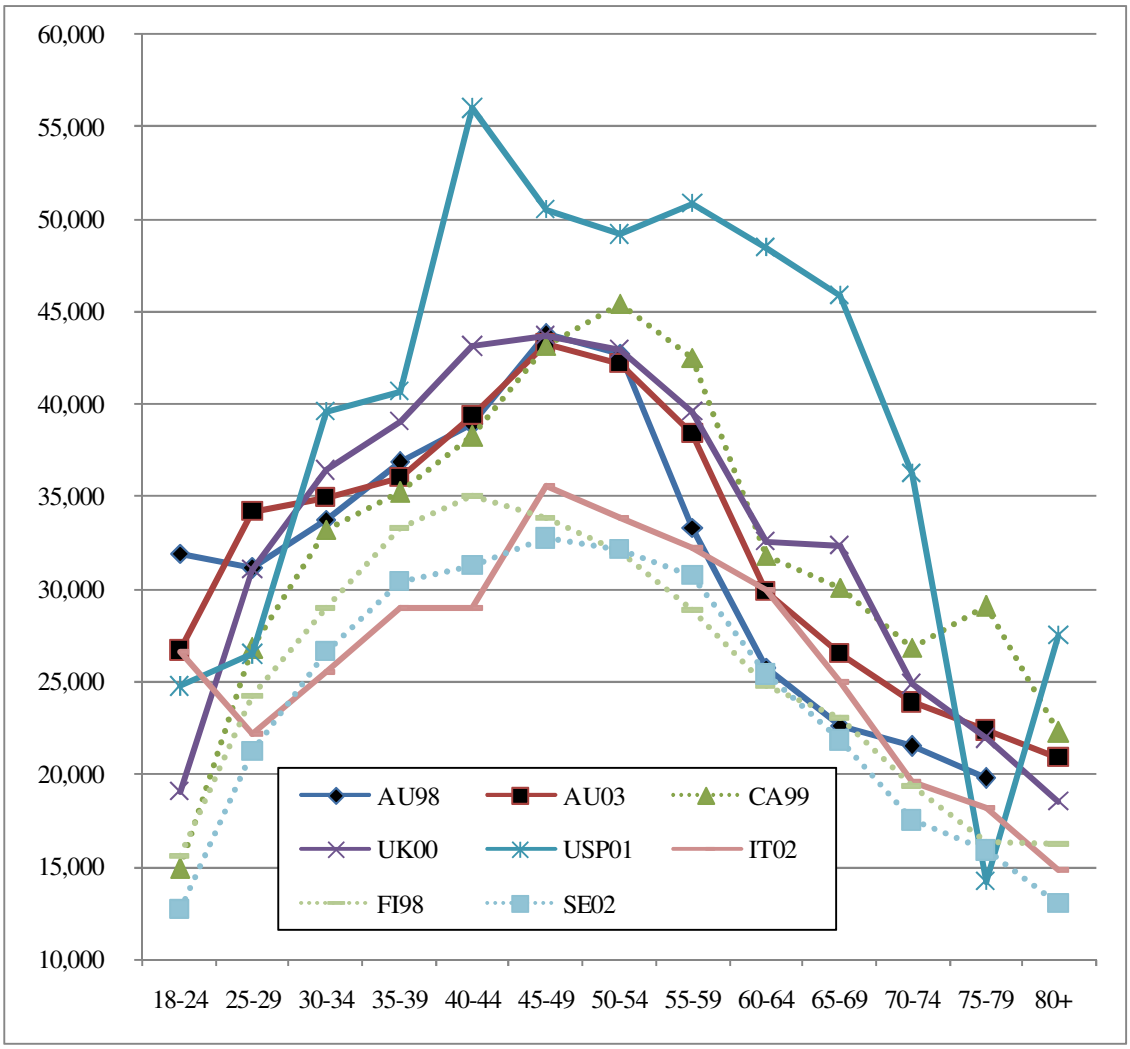
However even if the measurement assumptions associated with housing consumption estimation are appropriate, the presentation shown in Figure 10 is not the most appropriate way to show the relative importance of housing in consumption patterns. More appropriate would be to compare housing consumption with non-housing consumption (or total consumption).

This requires the deduction of housing costs from disposable income. Ideally, this should include rent, mortgage interest and principal together with maintenance expenditures. Maintenance expenditures are not available in any of the countries. Rent, mortgage interest and principal payments can be deducted in Australia, the UK, the USA (in USP01) and Italy. In Canada, Finland and Sweden mortgage principal repayments are not included. This means that for these countries, non-housing consumption is estimated as too high, and hence housing consumption relative to total consumption as too low.

Figure 11 shows an estimate of average total consumption by age for each of the countries. Total consumption is defined following Figure 1, as the sum of services from home ownership (5% of the home value), plus rent, plus disposable income

minus housing costs. Here, the Australian patterns are not that different from the other countries, though they appear to have a steeper drop in consumption between age 60 and 69. This is consistent with the previous research discussed in the introduction which has argued that the consumption value of own-home ownership in Australia tends to offset the lower incomes in retirement – at least with respect to total consumption. The outlier here appears to be the US, where the 75-79 age group has a particularly low total consumption level (due to low disposable incomes and high housing costs for this group). However, if this result is treated as a statistical aberration, then the cross-lifecycle pattern of US consumption is not that different from the other countries (though at a higher level).

Figure 11 Total consumption (USD 2002)
(5% of own-home value + rent + disposable income – housing costs)



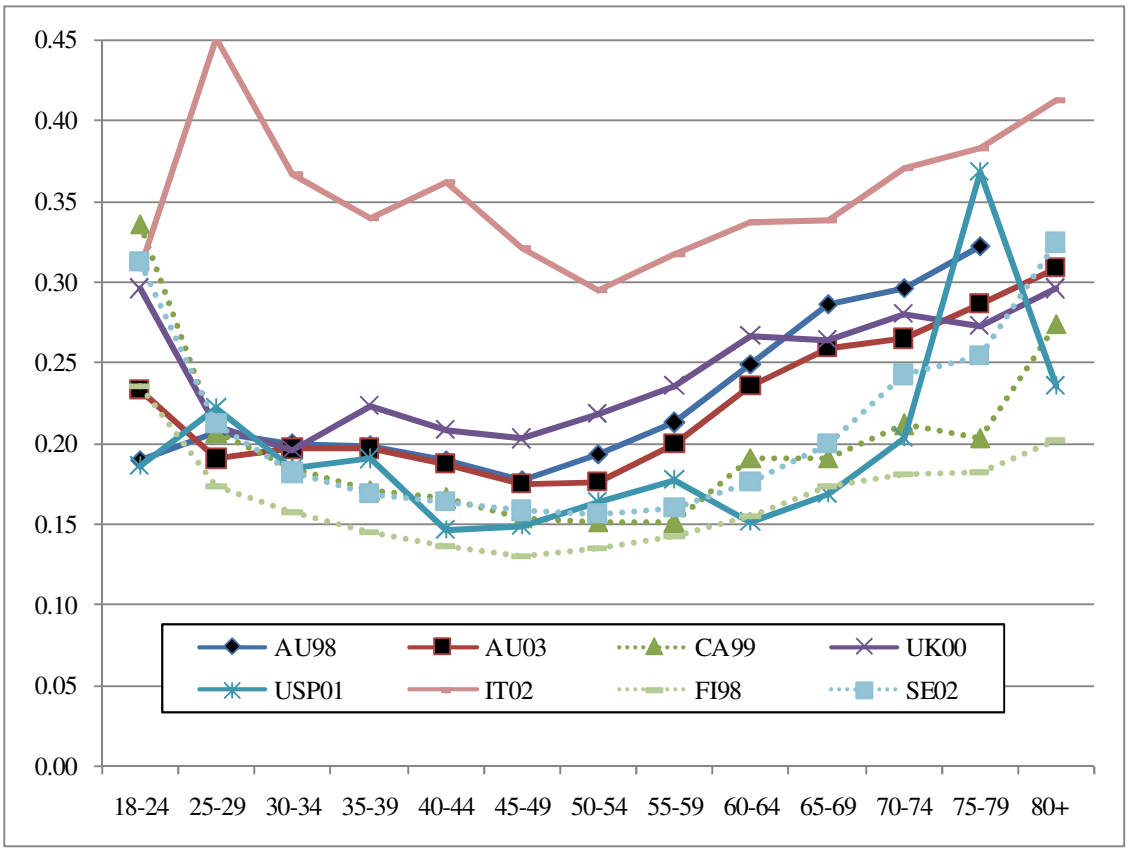
Note: Housing costs include rent, mortgage principal and interest except in Canada, Sweden and Finland, where mortgage principal is not included. The (dotted) lines for these three countries are thus too high.

Source: LWS and ABS data. See Table 1.

The share of total consumption arising from housing services is shown in Figure 12. The high apparent housing consumption level for Italy across all ages is quite apparent. The US pattern is volatile (due to the volatility of total consumption discussed above), but also appears to exhibit an upward trend. On average, however, housing has a relatively low share of total consumption in the US.

On this basis, the UK elderly have a very similar housing share of consumption to the Australian elderly. However, Australia is still distinctive in that the consumption patterns of the Australian elderly are quite different to the non-elderly. Comparing those aged 50-54 with those aged 65-69, the UK housing share of consumption increases from 0.22 to 0.26, an increase of 18 per cent. The Australian housing shares increase by 44 or 53 per cent, depending upon the year.

Figure 12 Housing consumption (H) relative to total consumption (T)
(H = 5% of own-home value + rent
T = H + disposable income – housing costs)

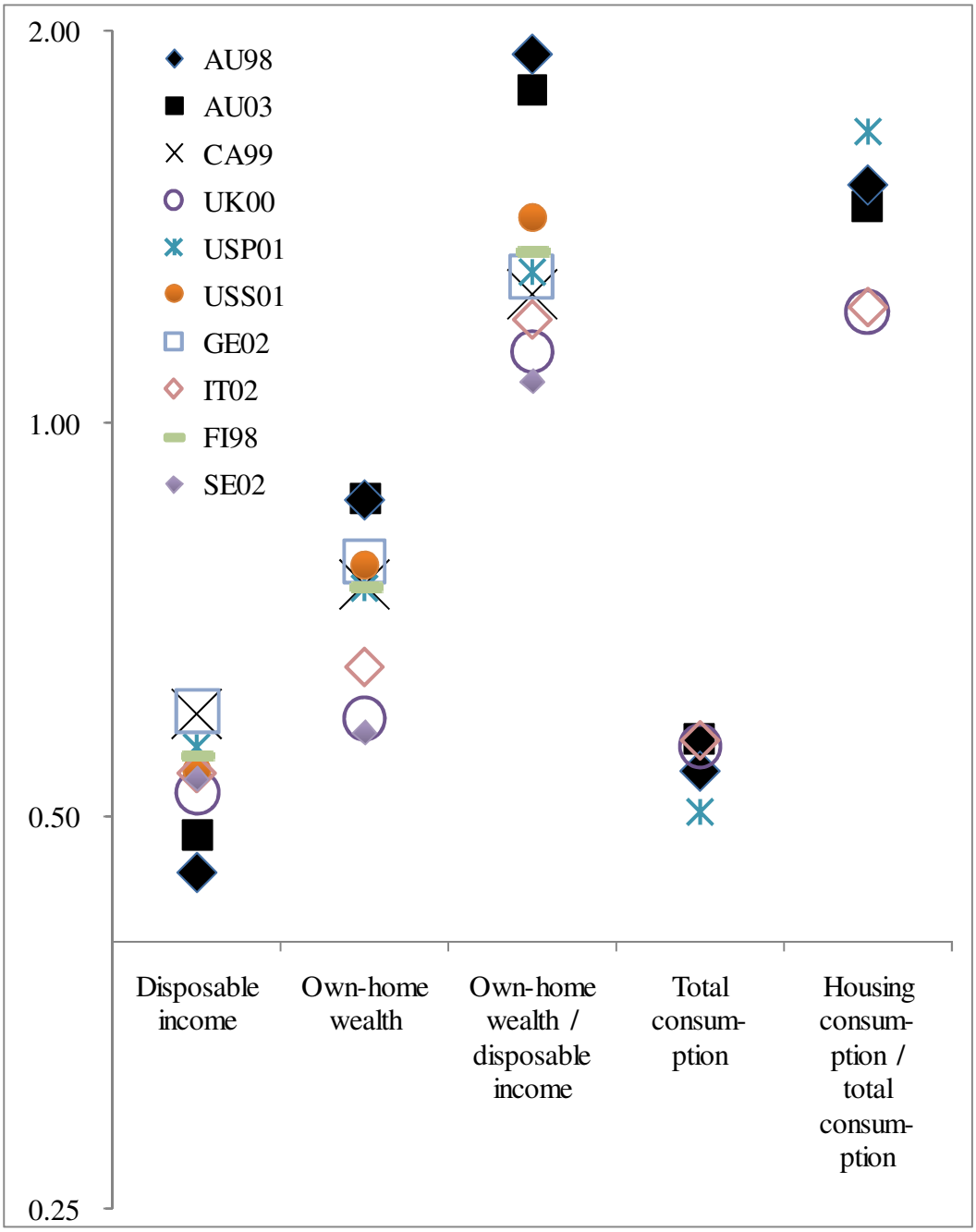


Note: Housing costs include rent, mortgage principal and interest except in Canada, Sweden and Finland, where mortgage principal is not included. The (dotted) lines for these three countries are thus too low.
Source: LWS and ABS data. See Table 1.

These, and other, differences between people in their pre and post retirement years are summarised in Figure 13. This is calculated from the figures shown above. For each

country, it shows the average value of each key indicator for those aged 70 to 79, relative to the value of the indicator for those aged 50 to 59.[20]

Figure 13 Ratio of values for people in their 70s vs 50s



Note: Vertical axis is on a log scale. USS01, Canada, Sweden, Finland and Germany are not included in the two right-most columns because of missing data.

[20] In this version, this is calculated as the unweighted average of the results for the two 5-year age ranges shown in the figures.

This figure underlines how unusual is the Australian transition to retirement. In countries other than Australia, people post-retirement live in households with incomes around 55 per cent of those pre-retirement. For Australia, this ratio is under one-half in both years. The relative value of wealth held in one's own home, on the other hand, is different in the opposite direction, with the Australian elderly holding almost as much wealth as those prior to the retirement. Even in the US, which has relatively high rates of home-ownership in old age, own-home wealth among those in their 70s is only about three-quarters that of those in their 50s (compared to 88% in Australia).

These differences in opposite directions reinforce each other when we take the ratio of the two measures in the third column of Figure 13. The ratio of own-home value to income almost doubles as people retire in Australia (average ratio of 1.9), whereas in the other countries, the ratio is between 1.1 and 1.4.

In terms of total consumption, however, the Australian transition to retirement is very similar to that found in the other countries. With respect to total consumption, at least, home-ownership works to offset the large fall in income after retirement in Australia.

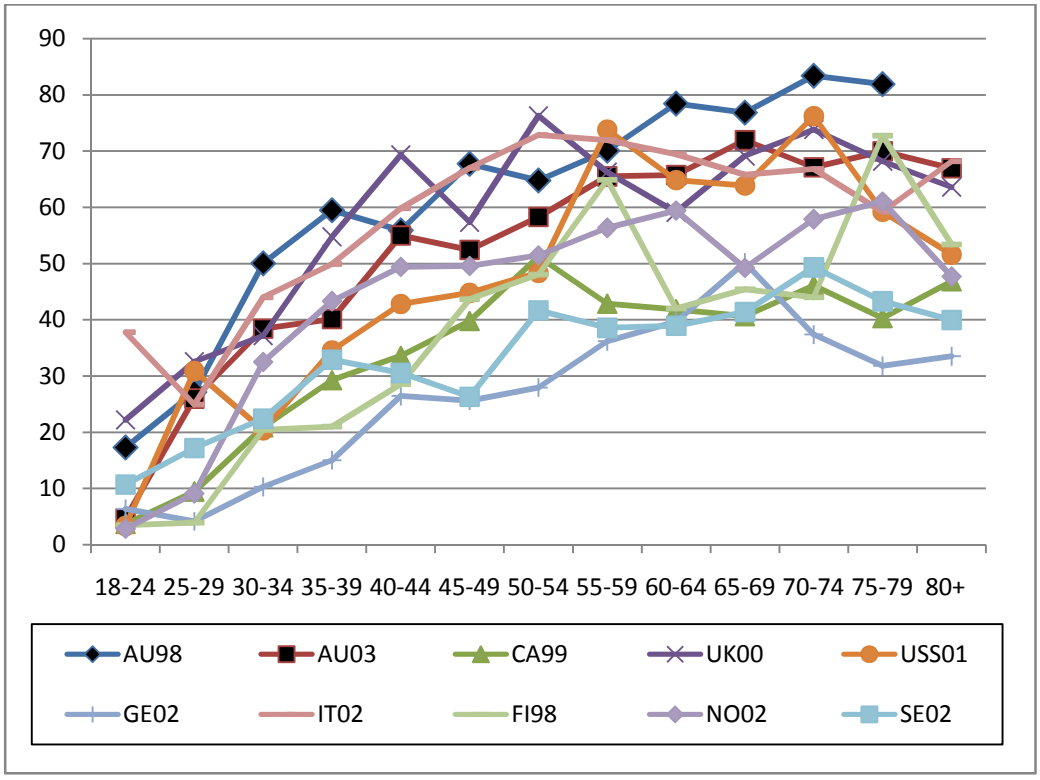
The share of consumption devoted to housing services does, however, consequently increase more in Australia. The housing share of consumption increases by half, whereas in Italy and the UK the increase is just under a quarter. The increase in the housing share is greatest in the US. However, given the extreme volatility shown by the US consumption share in Figure 11 and Figure 12, this result should be interpreted with caution.

5. Housing wealth patterns for low-income households

Do these results for the average older person also apply to low-income households? Here we restrict attention to those households which are in the bottom quintile (20%) of the equivalent income distribution within each age group. In broad terms, we find much the same story.

Figure 14 shows home ownership rates. In general, home ownership rates among low income families are relatively high in Australia at all ages.[21] Note that in Australia, the bottom quintile of the elderly is made up almost entirely of single people rather than couples.[22] The low-income elderly in the UK, Italy, and the US also have relatively high home ownership rates.

Figure 14 Home ownership rates for bottom quintile of each age group



Source: LWS and ABS data. See Table 1.

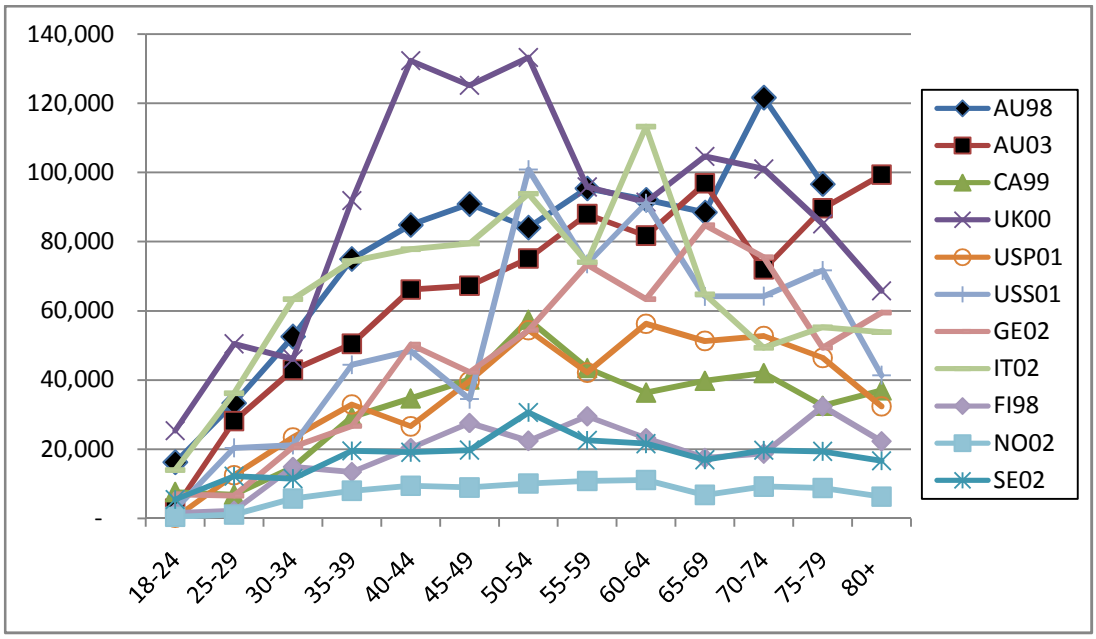
Figure 15 shows the mean own-home wealth for each age group. Again, Australian elderly tend to have particularly high levels of housing wealth. For the UK, this

[21] Note that part of the reason for the high home ownership rate in the bottom quintile of income is because renters receive a higher rate of Age Pension than non-renters.

[22] The square-root equivalence scale implies that single elderly need incomes 71% of couples to have the same living standard. The Age Pension ratio (including pharmaceutical allowance) is 60%. (The ratio is higher for those receiving rent allowance). Most equivalence scales in common use imply that single Age Pensioners are worse off than couples. See Bradbury (1997) for more detailed discussion.

wealth is surprisingly high in the middle of the age distribution. This might reflect problems with the use of income as a classificatory variable. The high housing wealth values might, for example, represent the inclusion of low-income self-employed families who nonetheless have substantial levels of wealth.

Figure 15 Mean own-home wealth for bottom quintile of each age group (USD2002, adjusted for house price/rent ratio, non-owners included)

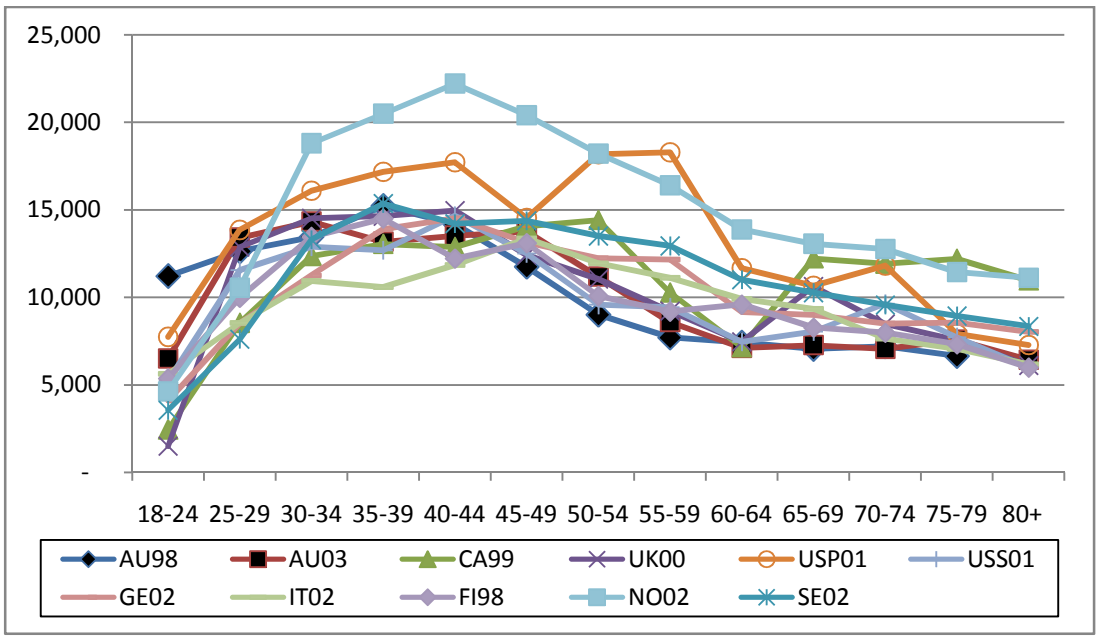


Source: LWS and ABS data. See Table 1. Note, renters are included with home wealth set to zero. The corresponding figure for the whole population is Appendix Figure 19.

The income levels of each age group are shown in Figure 16. Note that the bottom quintile is defined on the basis of equivalent income (income divided by the square root of household size), whereas this figure shows the mean unadjusted disposable income in each group. These income means can be compared with the means for the whole population in Appendix Figure 21. As for the overall population, Australian mean incomes tend to be towards the bottom and they fall significantly with retirement. However, Australia was a more dramatic outlier when we considered the average elderly person (see Figure 7 on page 19) rather than the low-income elderly shown here. This reflects the fact that the other countries have more developed social insurance programs providing higher retirement benefits to the middle-class retired.

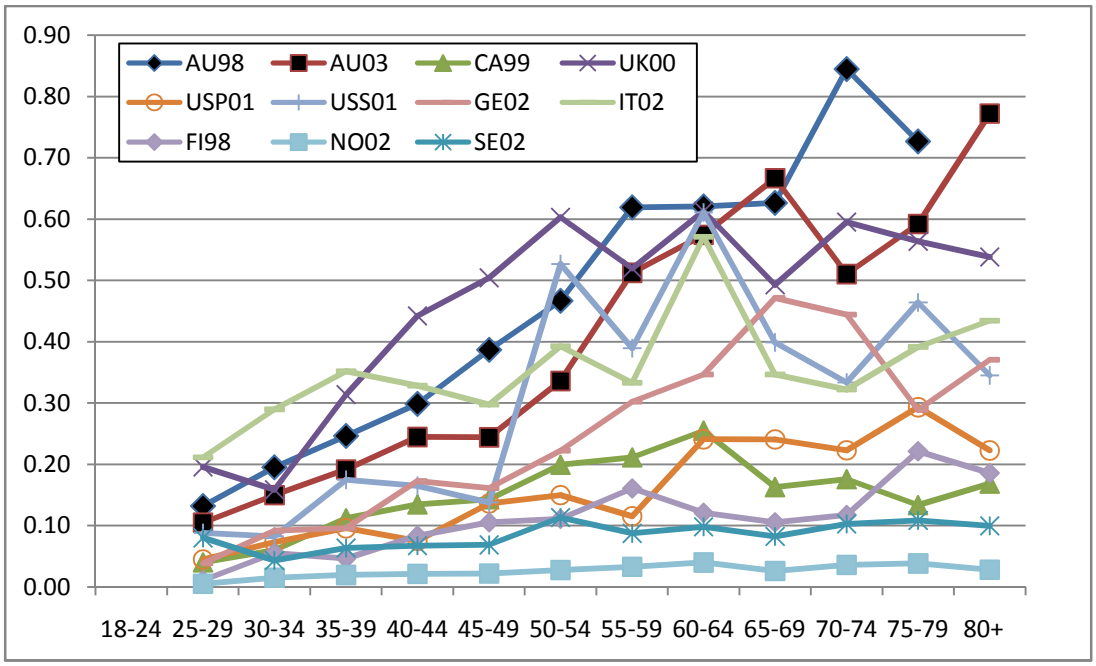
Figure 17 compares these incomes with own-home values. As for the overall population, the Australian elderly have relatively high own-home values relative to their incomes. The UK is not that far behind, but still has a flatter age profile. Figure 18 then adds rental expenditure to the numerator of this calculation to show an estimate of housing consumption relative to income. All countries now have a flatter age profile. Australia is still distinctive, however, in having a steep age profile, with particularly high levels of housing consumption among the low-income aged. This consumption is equivalent to about three-quarters of disposable income.

Figure 16 Mean disposable income of the bottom quintile of each age group (USD 2002)



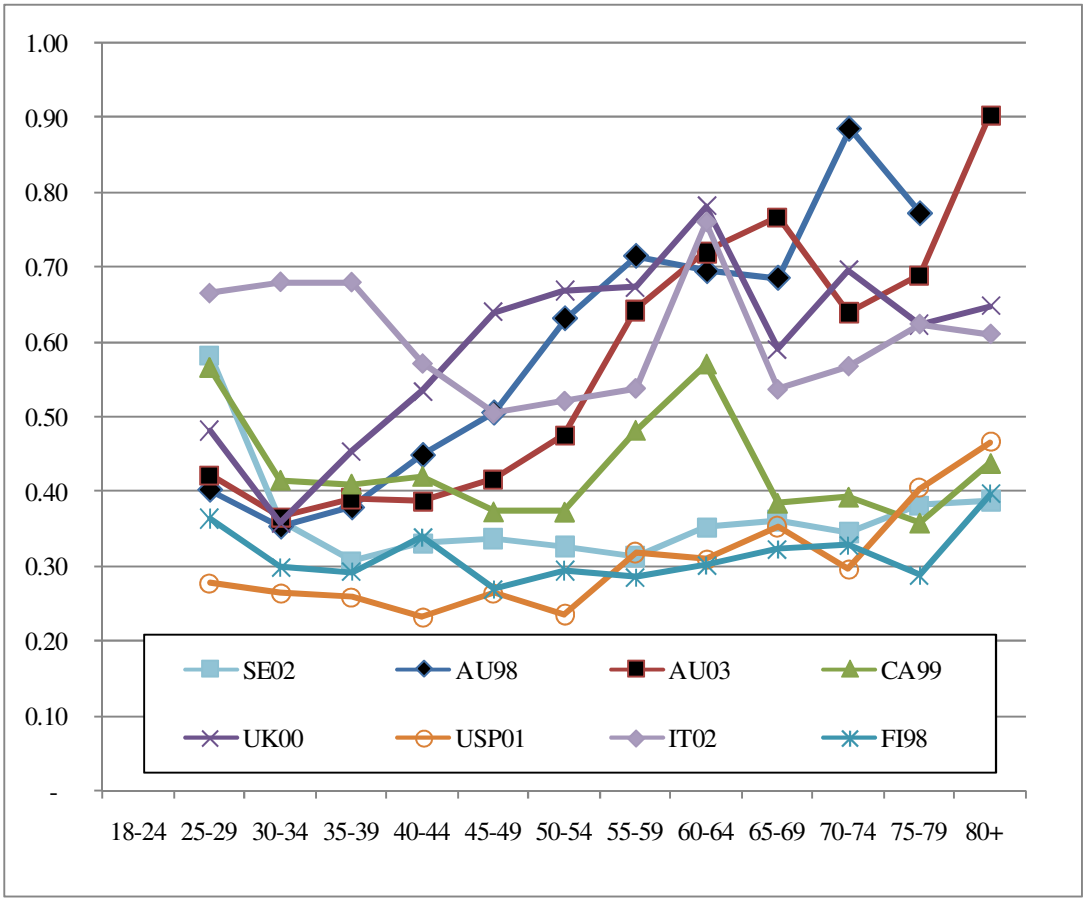
Source: LWS and ABS data. See Table 1.

Figure 17 Own-home consumption relative to disposable income for bottom quintile of each age group (5% of adjusted own-house wealth relative to the disposable income of the age group)



Source: LWS and ABS data. See Table 1. The comparable table for all income groups is Figure 8. Note, age 18-24 excluded because of some very low incomes.

Figure 18 Total housing consumption relative to disposable income for bottom quintile of each age group (5% of own-home value plus rent, divided by disposable income of age group)



Source: LWS and ABS data. See Table 1. The comparable figure for all income groups is Figure 10. Note age 18-24 excluded because of some very low incomes.

6. Summary and Conclusions

In some respects, the Australian patterns of home ownership and own-home wealth are not unusual. Over 80 per cent of Australians own their home in the pre-retirement years, but similar patterns apply in most of the other countries considered here (over 75 per cent in all but Sweden and Germany). When house prices are adjusted to take account of the house price cycle, Australia is also not that unusual in terms of the level of own-home wealth relative to national income. Both the UK and Italy have higher levels of relative own-home wealth, and Germany has a similar level to Australia (despite having a low home-ownership rate).

Where Australia differs, however, is in the differences of housing wealth patterns across age groups. High rates of home ownership continue into the post-retirement years in Australia, while they decline steeply in most other countries. The US is the exception, where home ownership rates among the elderly are also high. The level of home-ownership wealth, however, falls steeply with age in all countries other than Australia, including the US.

Churi and Jappelli (2006) argue that much of the fall in the rate of home ownership after retirement is due to cohort differences rather than within-lifecycle trends. Home-ownership rates among the elderly are likely to increase substantially in future years, particularly in the UK and Italy. The current home ownership situation in Australia can thus be seen as a leading indicator of likely future trends in other countries.

The Australian retirement system is even more unusual in that average income falls particularly steeply after retirement (because of the flat-rate Age Pension system). This too will change in future years as the Australian superannuation system matures. For now, however, the development of the Australia pension system and housing markets have meant that among the elderly, own-home ownership wealth is a much greater proportion of disposable income in Australia than in all the North American and European countries considered here.

If we look at the total consumption of housing services (including rental housing) and compare this with the disposable income or the total consumption of each age group, then Australia is less distinctive, but still an outlier. Home ownership in retirement does increase the total consumption of the Australian elderly to the point where their drop in total consumption after retirement is close to the average (despite their greater drop in income). However, Australia remains unusual in that the housing consumption share increases dramatically between the pre- and post-retirement years. (There is some evidence that this might also occur in the US, but this is much less clear).

We might hypothesise that at least some of the distinctiveness of the Australian system stems from the financial incentives under the Age Pension assets test for the elderly to hold their wealth in the form of housing. However, we should not rush to assign a causal direction to this association. Historically, the two features developed together, and can best be seen as complementary components of an overall retirement package.

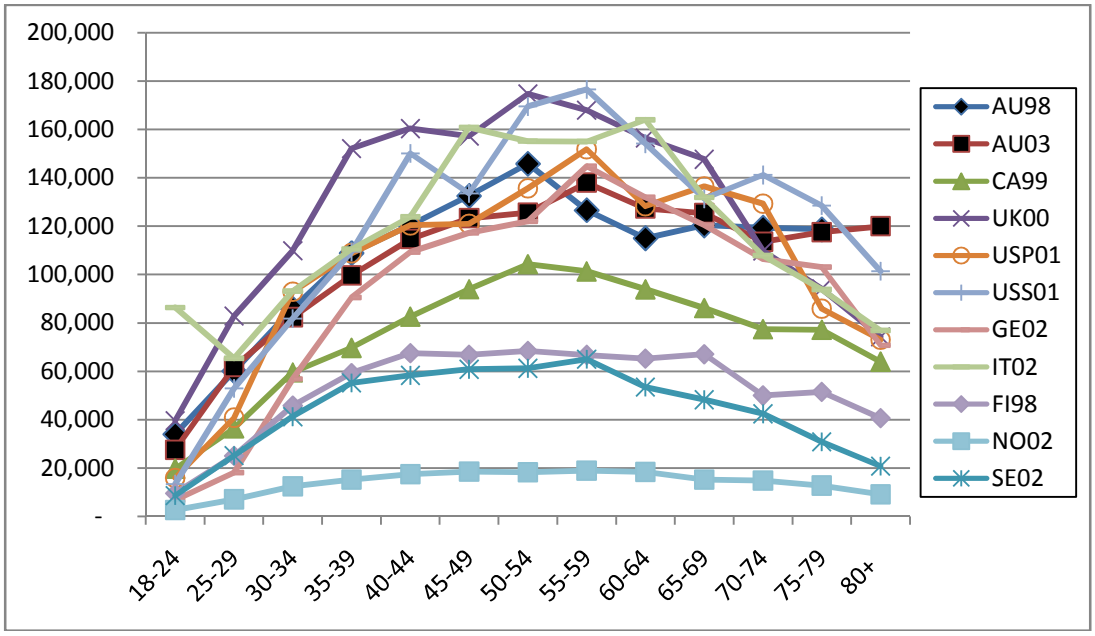
Nonetheless, the fact that the housing wealth patterns of the Australian elderly are so divergent from those of people in other comparable countries suggests that particular

attention needs to be paid to this issue in this country. Policy options to increase the ability of the elderly to take better advantage of their housing wealth might include stamp duty concessions to enable down-valuing, housing supply interventions to ensure an adequate supply of suitable smaller dwellings for the elderly, and a greater role for the state (or for new private sector institutions) in managing the longevity and other risks associated with reverse mortgage and similar schemes. Moreover, in future years as superannuation schemes mature and the Australian aged enter retirement with a broader range of wealth holdings, it may be necessary to revisit the question of the special exclusion of the own-home from the Age Pension assets test.

We also need to consider whether the patterns for the average older Australian described here also apply to the most disadvantaged. What of those who do not own their home after retirement? On some estimates, Australian home ownership rates are sufficient to make poverty among the elderly no worse than in most other countries (Whiteford and Kennedy, 1995). Nonetheless, Australia is unusual in that economic exclusion among the elderly is closely linked to a lack of home ownership (or access to public housing). Further research and policy development needs to be responsive to these special features of Australian retirement consumption.

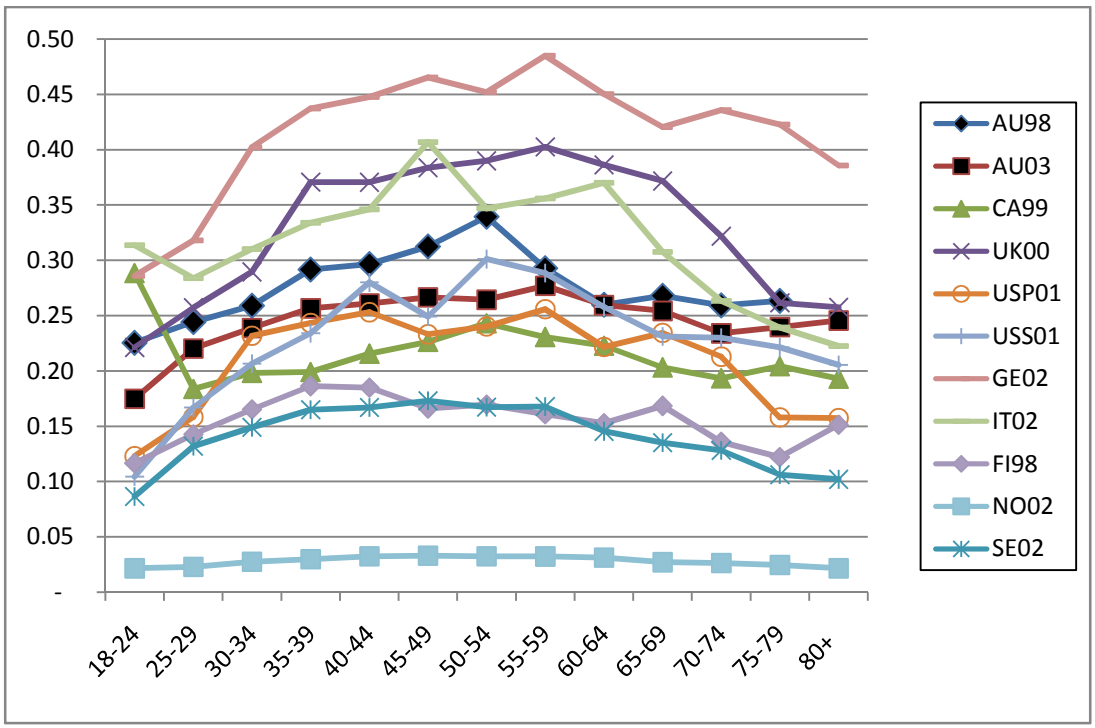
7. Appendix: Additional Data

Figure 19 Mean adjusted own-home wealth (USD 2002, non-owners included)



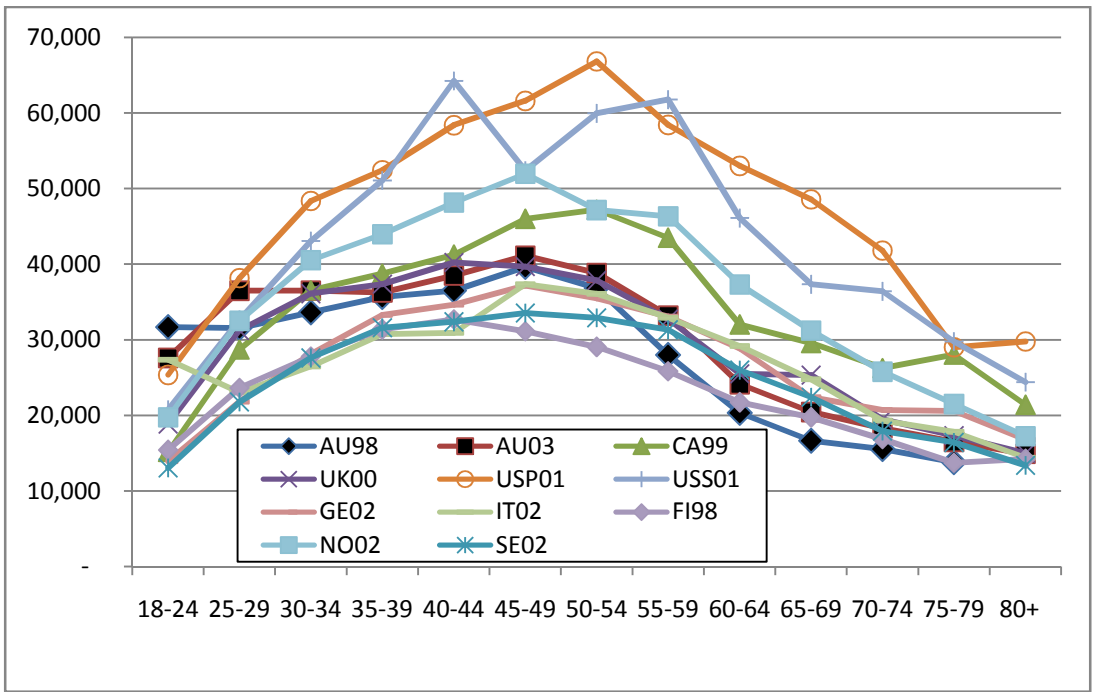
Source: LWS and ABS data. See Table 1.

Figure 20 Mean own-housing wealth/consumption of owners relative to GDP/capita (5% of mean adjusted own-home wealth, non-owners excluded)



Source: LWS and ABS data. See Table 1.

Figure 21 Mean disposable income per household (USD 2002)



Source: LWS and ABS data. See Table 1.

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