

## **Living Standards in Retirement: Accepted International Comparisons are Misleading**

By Joachim R. Frick and Bruce Headey\*

### **Abstract**

Accepted international assessments of living standards in retirement rely on comparing social pension incomes. These assessments conclude that European countries with contributory pension schemes provide retirees with higher living standards than liberal Anglo-American regimes in which many citizens rely on flat rate old age pensions. Comparisons based solely on pension incomes are potentially misleading because the living standards of retirees depend on their total economic resources, particularly their wealth. In this paper we make use of the wealth data in the German (SOEP) and Australian (HILDA) panels. Our revised ‘present value’ estimates of wealth suggest that Australian and German retirees have approximately the same living standards (mean and median), with much the same distribution (Gini).

*JEL Classification: D31, H55*

### **1. Introduction**

The focus of this paper is on *living standards in retirement*, specifically in Australia and Germany. Using revised measures of income and wealth, we show that accepted international comparisons of retiree living standards, notably those issued by OECD in its annual volume *Pensions At A Glance*, are misleading. The most quoted comparisons are based on the *net (after tax) income replacement rates* provided by the pensions of employees on average earnings. The replacement rates are explicitly used as a measure of the *social adequacy* of retiree incomes. For 2002, the year in which the HILDA and SOEP wealth and income data used in this paper were collected, OECD reported that the average net replacement rate for workers on average earnings in member countries was 68.7%. Germany was just above the average on 71.8%, while Australia was well below on 52.4% (OECD, 2005).

The main policy conclusion invariably drawn from these comparisons is that those European countries, including Germany, which have relatively generous

---

\* Joachim R. Frick gratefully acknowledges financial support from the Faculty of Economics and Commerce, University of Melbourne.

welfare provisions, including long standing national pension schemes, provide retirees with much higher living standards than liberal Anglo-American countries, including Australia, in which many citizens rely on flat rate old age pensions.

Using more complete data on incomes and (especially) wealth in the HILDA and SOEP panel surveys, we show that the living standards of Australian and German retirees appear to be about the same. This seems true whether the focus is on measures of central tendency (means, medians), or on measures of dispersion or inequality. The basic point is that the living standards of retirees depend on their total economic resources, and particularly their total wealth (net worth), not just on pension entitlements. Both the SOEP and HILDA panels have invested heavily in detailed measures of household wealth, so we are in a good position to assess the living standards of retirees, who more than any other population group, depend on accumulated wealth.

In order to make valid comparisons of the living standards of Australian and German retirees, we need to bring measures of wealth and income into a single unified account. This is particularly true, because as we shall see, the Australians have more wealth, while the Germans have more income. In principle, a single account could be achieved either by calculating the annual income flows likely to be derived from wealth stocks – this would convert everything to an income account – or by converting income flows into a stock measure (i.e. a wealth account). Here we use the second approach, partly implementing procedures developed by Gruber and Wise (1999) to arrive at the discounted present value of what they termed ‘social security wealth’, but which is here used for all components of income and wealth.

## **2. Some Stylized Facts about the Pension Systems of Australia and Germany**

The German pension scheme reflects the social stability priorities of a corporatist welfare-capitalist state (Esping-Andersen, 1990). Retirement incomes are highly correlated with working incomes and usually maintain families at or close to their previous standard of living. Germany has a defined benefit (DB) pension scheme into which employees and employers make 50/50 contributions, amounting to 19.5% of the employee’s pay up to a cap of Euros 54,000 in West Germany and Euros 45,000 in the East.<sup>1</sup> The funding is on a pay-as-you-go (PAYG) basis with current employees essentially funding the incomes of current retirees.

---

<sup>1</sup> All information relates to 2002; the year for which the income and wealth data used in this article were collected.

In Australia, reflecting the individualist and economic efficiency priorities of a liberal welfare-capitalist state, individuals who want a high standard of living in retirement have to make their own arrangements. About two-thirds of retirees still rely almost entirely on a flat rate old age pension, which is just intended to provide a 'decent minimum' living standard. This pension is means tested and is reduced if either incomes or assets go beyond quite low thresholds. In 1992 the Australian Government introduced the Superannuation Guarantee, which is a type of national pension scheme, but very different from the German one. It is a defined contribution (DC) not a DB scheme, and despite the name, it does not guarantee any specific level of income/benefit upon retirement. Employers pay 9% of earnings on behalf of their employees into an employee designated superannuation (pension) fund. Employees' investments may do well or badly. If they do badly, the flat rate old age pension provides a safety net.

### 3. Data and Methods

The German Socio-Economic Panel (SOEP) started in 1984 with almost 6,000 households. Following various sample additions, a total of 23,900 individual interviews in about 12,700 households were carried out in the survey year 2002, the wave which our analyses are based on. All individual household members aged 17 and over are interviewed, mostly face-to-face (<http://www.diw.de/gsoep>). The Household Income and Labour Dynamics in Australia Survey (HILDA) started in 2001 with just under 20,000 individuals in 7,700 participating households. All household members aged 15 and over are interviewed annually face-to-face. HILDA is managed by the Melbourne Institute of Applied Economic and Social Research under contract to the Australian Government Department of Family and Community Services and Indigenous Affairs (<http://www.melbourneinstitute.com/hilda/>).

#### *Incomes, Including Benefits in Kind*

The income data collected in HILDA and SOEP are quite comprehensive and directly comparable. Information is obtained about all main components of current and annual income: labour income, asset income, private transfers, public transfers and social security pensions. Direct taxes and (in Germany) social security contributions are imputed by data managers in order to derive annual net income.

For the purposes of this paper, we also ideally need information about income in kind. The SOEP team has for many years estimated the income advantage bound up in the imputed net rents of homeowners. More recently, the near-cash value of rent subsidies received by tenants living in public / community housing, and also subsidies implicitly received by rent-free households in

the private sector, have been calculated using a hedonic regression approach (Frick/Goebel/Grabka, 2007). Following this rationale, and aiming for cross-national comparability, the HILDA team has also recently estimated imputed rents for both homeowners and tenants.

### *Wealth*

HILDA and SOEP have obtained more detailed data on wealth – assets and debts – than other national household panels. In 2002 both panels collected information about non-financial and financial assets. The main non-financial assets about which respondents in both panels are questioned are their own housing and other residential property they may own, and also businesses and farms. The two panels differ somewhat in measuring financial assets. They both ask about bank savings and about assets held in the form of shares, managed funds, trust funds and the like. However, they differ in their treatment of superannuation (old age) savings. In Australia it was considered feasible to ask directly about these savings, in part because everyone, regardless of age or retirement status, receives an annual statement of their value. In Germany it has so far been considered infeasible to ask about the future pension entitlements of people who are not yet retired.

The obvious way to do assess the quality of our survey data on wealth is to benchmark against statistics provided in the National Accounts of the two countries. When this has been done in the past, it has generally been found that assets are seriously under-reported in surveys (Juster/Smith/Stafford, 1999). By asking about wealth in more detail than most previous surveys, SOEP and HILDA hoped to reduce under-reporting. In the event, both surveys benchmark satisfactorily against official data (Headey/Warren/Wooden, 2005; Frick/Grabka/Sierminski, 2007). Residential property assets appear to be accurately recorded by survey respondents, business and financial assets less so.

### *Estimating the Future Income Flows of Retirees and Integrating them into Wealth Stocks*

As noted above, our final comparison of the living standards of retirees in Australia and Germany involves taking account of all their assets and entitlements, including housing, superannuation, other household savings and social/public pensions. Imputed rents are also included. Following Gruber/Wise (1999), we convert future income flows into a stock measure, integrating them with the value of the assets measured in the HILDA and SOEP wealth modules. The new stock measure is expressed in 2002 ‘present values’.

Some more detail: expected annual retirement income is calculated for each individual for each remaining year of life. Life expectancy tables are used to

predict survival rates and age of death (women live longer than men; West Germans live longer than Easterners). All incomes are discounted back to present values (2002 prices), using a standard discount rate of 2%.

### *Equivalisation of Income and Wealth, and use of PPPs*

Our aim is to measure the living standards of individual retirees. It is generally considered that the best easily available measure is equivalised income; that is, income adjusted for household size and composition. For the measurement of wealth, however, there is no such standard or generally accepted way to deal with economies of scale. Because our approach hinges on “stockizing” income flows we need to apply the same logic to both income and wealth. So all income and wealth measures in this paper are equivalised, using the current OECD scale (1.0 for the first adult, 0.5 for other adults and 0.3 for children under 15).

Finally, in order to compare the levels of living standards of Australian and German retirees, we need to use a common currency. Australian dollars have been converted to euros using the PPP (purchasing price parity) for dollars and euros in January 2002. It so happens that the Australian dollar was at a high parity at that time (A\$1.42 to Euro 1.00), so the figures in this paper make Australians look better off relative to Germans than would have been the case in some other recent years.

## **4. Results: From Cash Incomes to a Comprehensive Stock Measure**

We begin the analysis in the conventional way, focusing just on cash incomes. We will then go on to see how much difference it makes when we take account of benefits in kind, then of wealth . . . and finally of retirement income flows combined into a revised and more comprehensive wealth measure.

### *Comparing Cash Incomes*

Table 1 provides both between country and within country comparisons. It compares the equivalised cash incomes of retired people in Australia and Germany. It also shows how retirees’ incomes compare with the population average in their own country. Retirees, like everyone else, share their incomes with other members of the household. So the equivalised incomes shown here are, to be precise, the incomes of all individuals living in households headed by a retired person aged 65 or over.

The rows in Table 1 give mean and median incomes for the relevant population group, and also a standard measure of within-group income inequality,

the Gini coefficient. The third column makes cross-national comparisons by showing Australian incomes as a percentage of German incomes. In the final two columns retiree incomes are expressed as a percentage of national incomes in their own country.

*Table 1*  
**Equivalised cash incomes in Australia and Germany, 2002:**  
**individuals in households with retired heads (65+)**  
**compared to the total population\***

	Australia	Germany	Australia / Germany	Australian Retired / Total population	German Retired / Total population %
	Euros	Euros	%	%	%
<i>Individuals in HHs with retired heads</i>					
Mean	15208	16800	90.5	74.2	91.8
<b>Median</b>	<b>12001</b>	<b>14349</b>	<b>83.6</b>	<b>67.2</b>	<b>90.7</b>
Gini	0.319	0.284	112.3	103.0	95.0
<i>Total Population</i>					
Mean	20501	18304	112.0	as above	as above
<b>Median</b>	<b>17894</b>	<b>15817</b>	<b>113.1</b>		
Gini	0.310	0.299	103.7		

\* A PPP rate of A\$1.42 = Euros 1.00 has been used.

Sources: HILDA 2002 and SOEP 2002.

Taken at face value, the evidence here might appear to confirm the OECD’s comparisons, which were cited earlier. Let us focus on median incomes (highlighted in the table) which give the clearest indication of typical standards. In 2002 Australians as a whole had somewhat higher median incomes than Germans, at least according to these PPP comparisons. But Australian retirees were considerably worse off than German retirees. Their median incomes were 16.4% lower. Australian retirees received only 67.2% of the overall population median income, whereas German retirees received 90.7%.

### *Adding Imputed Rent*

A first corrective to just comparing cash incomes is to add the value of benefits in kind. Table 2 makes the same comparisons as the previous table, but adds in the imputed rents of homeowners and the subsidies implicitly received by (some) public housing tenants, and also by rent free tenants in the private sector.

Table 2

**Equivalised incomes INCLUDING imputed rent  
in Australia and Germany 2002: individuals in households with  
retired heads (65+) compared to the total population\***

	Australia	Germany	Australia / Germany	Australian Retired / Total population	German Retired / Total population %
	Euros	Euros	%	%	%
<i>Individuals in HHs with retired heads</i>					
Mean	19730	18581	106.2	84.3	96.2
<b>Median</b>	<b>15930</b>	<b>15911</b>	<b>100.1</b>	<b>77.8</b>	<b>94.9</b>
Gini	0.300	0.277	108.3	103.4	93.6
<i>Total population</i>					
Mean	23401	19320	121.1	as above	as above
<b>Median</b>	<b>20467</b>	<b>16773</b>	<b>122.0</b>		
Gini	0.299	0.296	101.0		

\* A PPP rate of A\$1.42 = Euros 1.00 has been used.

Sources: HILDA 2002 and SOEP 2002.

Now the position of Australian retirees appears much improved. Inclusion of imputed rents and housing subsidies shifts their incomes (at the median) to almost exactly the same level (100.1%) as their German counterparts, compared to only 83.6% if only cash incomes are included. Compared to the total population in their own country, Australian retirees also appear relatively better off; moving up from 67.2% of the population median to 77.8%. The relative position of German retirees within the total population is less affected, but is also improved by inclusion of imputed rents. Their median incomes move up from 90.7% of the population median to 94.9%.

The main reason for the large change in the position of Australian retirees is that the huge majority (82%) own their own homes with no remaining mortgage debt. In practice, banks and other mortgage lenders in Australia normally only provide loans on the basis that it is planned to clear them before retirement. In Germany, on the other hand, the change is smaller because retirees already have relatively high cash incomes and, secondly, homeownership rates are low by Australian and, indeed, by European standards. In both countries the inclusion of imputed rent causes inequality (measured by the Gini coefficient) to decline – this effect being somewhat more pronounced in Australia thus causing the cross-national inequality gap to close to merely 1% for the total population and about 8% for the population in household with a retired head.

*What About Wealth?*

So far we have only considered cash and in-kind incomes. Clearly, however, living standards depend to a considerable extent on accumulated wealth, especially in old age. In Table 3 we make wealth comparisons similar to those previously given for income. Only net worth (assets minus debts) in 2002 is considered; no allowance is yet made for future income flows derived from wealth.

*Table 3*  
**Equivalised wealth in Australia and Germany 2002,**  
**NOT including social pension entitlements: individuals in households**  
**with retired heads (65+) compared to the total population\***

	Australia	Germany	Australia / Germany	Australian Retired / Total population	German Retired / Total population %
	Euros	Euros	%	%	%
<i>Individuals in HHs with retired head</i>					
Mean	211971	128867	164.5	136.6	136.2
<b>Median</b>	<b>129892</b>	<b>62086</b>	<b>209.4</b>	<b>154.0</b>	<b>197.6</b>
Gini	0.540	0.667	81.0	90.8	90.1
<i>Total population</i>					
Mean	155191	94605	164.0	as above	as above
<b>Median</b>	<b>84360</b>	<b>31415</b>	<b>268.5</b>		
Gini	0.595	0.740	80.4		

\* A PPP rate of A\$1.42 = Euros 1.00 has been used.

Sources: HILDA 2002 and SOEP 2002.

As is well known, wealth is about twice as unequally distributed as income and, due to what financial advisers like to call the magic of compound interest, it is much more concentrated in older households. In Western countries the main source of wealth (conventionally measured) is property, especially housing. So, in complete contrast to the initial income story, our initial view of wealth could be said to make retirees in both countries look better off than the general population with Australian retirees apparently wealthier than their German counterparts. The reason why Australian retirees appear to be in such a favourable position is that, as already noted, the large majority own their homes outright. In Germany homeownership in the retired population stood at 54% in 2002. Some additional but quantitatively minor factors, at least within the retired population, are that Australian share ownership is at a higher level than German, as is the holding of private superannuation.<sup>2</sup>



*Final Results: Including Future Income Flows  
in a Revised Measure of Retiree Wealth*

We now give our final preferred estimates of the living standards of Australian and German retirees. As explained, our measures are based on including future income flows from pension entitlements in a revised measure of wealth, which is then discounted back to 2002 present values. This measure has only been constructed for retirees. In their case wealth and current pensions levels in 2002 are already known. In principle the measure could be provided for the whole population. However a practical difficulty, in the German data especially, would be that individuals' future pension incomes would be hard to predict (but see Gruber / Wise, 2004).

*Table 4*

**Equivalised wealth in Australia and Germany in 2002,  
INCLUDING estimated future social pension income flows:  
individuals in households with retired heads (65+)\***

	Australia Euros	Germany Euros	Australia / Germany %
Mean	273978	281528	97.3
<b>Median</b>	<b>213180</b>	<b>220339</b>	<b>96.8</b>
Gini	0.402	0.398	101.0

\* A PPP rate of A\$1.42 = Euros 1.00 has been used.

Sources: HILDA 2002 and SOEP 2002.

After many gyrations, our final estimate is that Australian and German retirees probably have almost exactly the same standard of living. This is quite contrary to OECD's widely accepted estimates, and to the first estimates we presented which, like OECD's estimates, were based solely on cash income. Equality of retiree living standards appears to prevail whether the mean or median is preferred as a measure of central tendency. Furthermore, inequality within the two retiree populations appears to be about the same; the Australian Gini for the revised wealth measure being 0.402 and the German 0.398. These figures are down from Ginis of 0.54 and 0.67 respectively, when future pensions were not included (Table 3).

---

<sup>2</sup> Arguably, superannuation should not be included in the international comparison. While some Australians have superannuation, it is almost unknown in Germany, where people rely on contributory pensions. However, the inclusion of superannuation makes no substantial difference to the international comparisons, especially in the retired population. The median Australian retiree in 2002 had zero superannuation; the mean holding was about Euros 30,000.

The reasons why German retirees appear comparatively much better off in Table 4, compared to Table 3 is that their higher pensions make a much bigger contribution to the revised measure of wealth than the flat rate pensions of retired Australians. The typical Australian retiree portfolio in 2002 was about 47% in the form of (mostly outright owned) housing, 29% in financial assets including bank accounts, superannuation (usually taken as a lump sum)<sup>3</sup>, shares and managed funds, and about 21% in the form of future flat rate pension income flows.<sup>4</sup> German retirees, by contrast, typically have large pension incomes amounting to just over 50% of their portfolio, about twice as high a share than their Australian counterparts. They too have substantial amounts in property – about 37% of the portfolio – although much less than Australians. Finally, less than 10% of their portfolios are in financial assets, including bank accounts and shares.

### 5. Policy Implications and Future Work

The political economies of different Western countries, especially their tax and pension regimes, offer quite different opportunities for wealth accumulation and so for living standards in retirement. Other things equal, high compulsory contributions to national pension schemes impose significant opportunity costs. They reduce opportunities to accumulate wealth via home ownership, share ownership and household savings generally. In the absence of these constraints, in countries where saving for old age is not compulsory, households make their own decisions. As we have seen, Australians mostly do save for old age via homeownership; a ‘choice’ that may not be entirely conscious, and one which is certainly also based on earlier life preferences (‘the family home’, ‘owning your own property’). Some individuals may prefer not to save for old age. This may be foolhardy, or it may possibly be rational if one expects to die young, or rely on support from children and other relatives.

In Germany, as in many other corporatist and social democratic regimes, there appears to be a strong preference for a system which ensures that most people have a living standard in retirement similar to their working years (Esping-Andersen, 1990). There may also be some support for inter-generational transfers . . . for the idea that working generations, who are generally living in more prosperous times, should help to support retirees who spent most of their working lives earning lower incomes in less prosperous times. Clearly, however, this inter-generational bargain is now under strain in many countries, including Germany, because of population ageing and consequent under-funding of future pension entitlements.

---

<sup>3</sup> But here including future income flows.

<sup>4</sup> The remaining 3% or so is in the form of businesses, farms, vehicles and other durables.

This paper has been largely based on HILDA and SOEP wealth surveys conducted in 2002. The HILDA wealth module was repeated in 2006 – the data are already available – and the German module was repeated in 2007, with the data due to be released after imputation of missing values in 2009. We, along with other colleagues managing panel datasets, hope to continue to improve and extend both the income and wealth measures in the panel files. This should prove worthwhile, not just for researchers interested in retirement issues but, more generally, for work on a wide range of topics relating to income and wealth dynamics.

### References

- Esping-Andersen, G.* (1990): *The Three Worlds Of Welfare Capitalism*, Cambridge.
- Frick, J. R. / Goebel, J. / Grabka, M. M.* (2007): Assessing the Distributional Impact of “Imputed Rent” and “Non-Cash Employee Income” in Microdata: Case Studies Based on EU-SILC (2004) and SOEP (2002). In: Eurostat (eds): *Comparative EU statistics on Income and Living Conditions: Issues and Challenges*. Proceedings of the EU-SILC Conference, Helsinki, 6–8 November 2006, European Communities: Luxembourg, 117–142.
- Frick, J. R. / Grabka, M. M. / Sierminska, E.* (2007): Representative wealth data for Germany: the impact of methodological decisions around imputation and the choice of the aggregation unit. *SOEP papers on Multidisciplinary Panel Data Research at DIW Berlin*, No. 3, Feb. 2007, Berlin.
- Gruber, J. / Wise, D. A.* (1999): *Social Security and Retirement Around the World*, Chicago / London.
- Headey, B. W. / Warren, D. / Wooden, M.* (2005): *The Structure and Composition of Household Wealth in Australia*. Report to the Department of Family and Community Services.
- Juster, F. T. / Smith J. P. / Stafford F.* (1999): The measurement and structure of household wealth, *Labour Economics* 6, 253–76.
- OECD* (2005): *Pensions at a Glance: Public Policies Across OECD Countries*, Paris.