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Retirement Income Adequacy: Concepts and Measurement

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Abstract

This paper offers a discussion of adequacy of retirement benefits. We have the Australian context in mind, but introduce extensive international comparisons to provide perspective. We cover possible benchmarks against which to set benefits, how these might change depending on household structure, the actual levels at which different countries set basic and minimum pension levels, related taxation policy, and the policies and rationale for benefit indexation. We focus primarily on adequacy in the context of poverty alleviation, but also investigate the idea of defining the adequacy of income replacement. This includes a discussion of design features that increase the likelihood that the retirement system will provide adequate income replacement and the measures that can guide our assessment of the outcomes.

Key words: Population Ageing; Social Policy; Pensions

JEL codes: D63, I38, J1

RETIREMENT INCOME ADEQUACY: CONCEPTS AND MEASUREMENT

Introduction

This paper offers a discussion of adequacy of retirement benefits. We have the Australian context in mind, but introduce extensive international comparisons to provide perspective. We cover possible benchmarks against which to set benefits, how these might change depending on household structure, the actual levels at which different countries set basic and minimum pension levels, related taxation policy, and the policies and the rationale for benefit indexation. We focus primarily on adequacy in the context of poverty alleviation. This focus is consistent with the Australian approach to social policy generally, which focuses on needs rather than rights. It is also consistent with the use of the term in the literature more generally, in which 'adequacy' is thought of in the context of poverty alleviation (including for example in the OECD's regular publication, *Pensions at a Glance*). Given the interest in Australia's superannuation structure and its possible reform, however, we also offer a brief discussion on what might be thought of as adequate income replacement.

At the outset it is worth emphasising that where retirement income is provided or subsidised by the public sector, the level of benefit will be dictated by the budget available for the given pension programme. There is an obvious trade-off between adequacy and affordability: higher levels of public pension will cost more. This is especially important in the context of an ageing demographic, because promises made today will likely affect the labour and saving behaviour of working cohorts, and thus need to be sustainable for the future. Having made this important point, the paper does not further address the affordability side of the equation.

The paper has three broad parts. Part I makes up the bulk of the paper and covers adequacy with respect to poverty alleviation. We begin with a discussion of poverty benchmarks. We examine this first for a single individual, and then discuss the impact of household composition. Indexation is then discussed. Part II briefly discusses adequacy with respect to income replacement. Part III includes short sections focused more specifically on the Australian context, offering comments and conclusions on adequate poverty alleviation and adequate income replacement.

PART I: ADEQUACY WITH RESPECT TO POVERTY ALLEVIATION

1.1 Defining poverty benchmarks

Poverty is a subjective concept. It relates to the notion that someone has inadequate resources to meet their basic needs. Such needs can be determined relative to prevailing community attitudes and standards. So it is these agreed standards that can then be translated to a poverty line, which in turn allows poverty measurement by looking at the number or proportion of people or households that fall below that line, and by how much (i.e., the depth of poverty or 'poverty gap').

A common approach to measuring basic need, and thereby to measuring poverty, in developing countries is based on the level of adequate nutrition, possibly in reference to what is consumed by people considered poor in a given region; plus cost of other essentials such as clothing and shelter (often estimated as a proportion on top of the food basket), also with reference to consumption levels of people considered poor in a given region. It is the basis of the $1-2 a day poverty line.
Rarely is such an absolute measure used in developed countries. In the United States, the cost of basic needs for different types of households was established in the 1960s and has been inflated with prices ever since. Inflating the line only by price is a form of absolute poverty measurement. It allows one to track the evolution of poverty over time, and is also useful when evaluating the effects of policies and programs on the incidence of poverty. In general terms, the absolute poverty line is consistent with the 'subsistence level'.
In most developed countries, the concept of poverty has been extended to include: (1) popular subjective judgments of what is the adequate basket of goods and services; (2) relative measures that change with community living standards; and (3) broadening the measure of standards of living away from purely financial measures.

Minimum Budget Standards are a relative poverty measure and represent a way to capture prevailing attitudes to poverty. These can be produced by regularly surveying the population for their views on what items constitute a socially acceptable basic quality of life and then costing the resulting basket. These may be developed for different types of households, including those consisting of the elderly (Hartfree et al., 2013). In Australia, the Association of Superannuation Funds of Australia uses this method to determine a 'modest' and 'comfortable' level of income for retired single and couple households (ASFA 2015). The modest level approximately corresponds to the level of the Australian Age Pension (including supplements).

A relative poverty line can be drawn by taking a proportion of the national median income or of the minimum wage. The regular review of the basket or the use of the contemporary median reflects the evolution of social consensus about what constitutes poverty. The absolute and relative poverty concepts can be combined: an absolute poverty line can be established by taking a relative measure at a point in time, and then indexing it to prices over time.

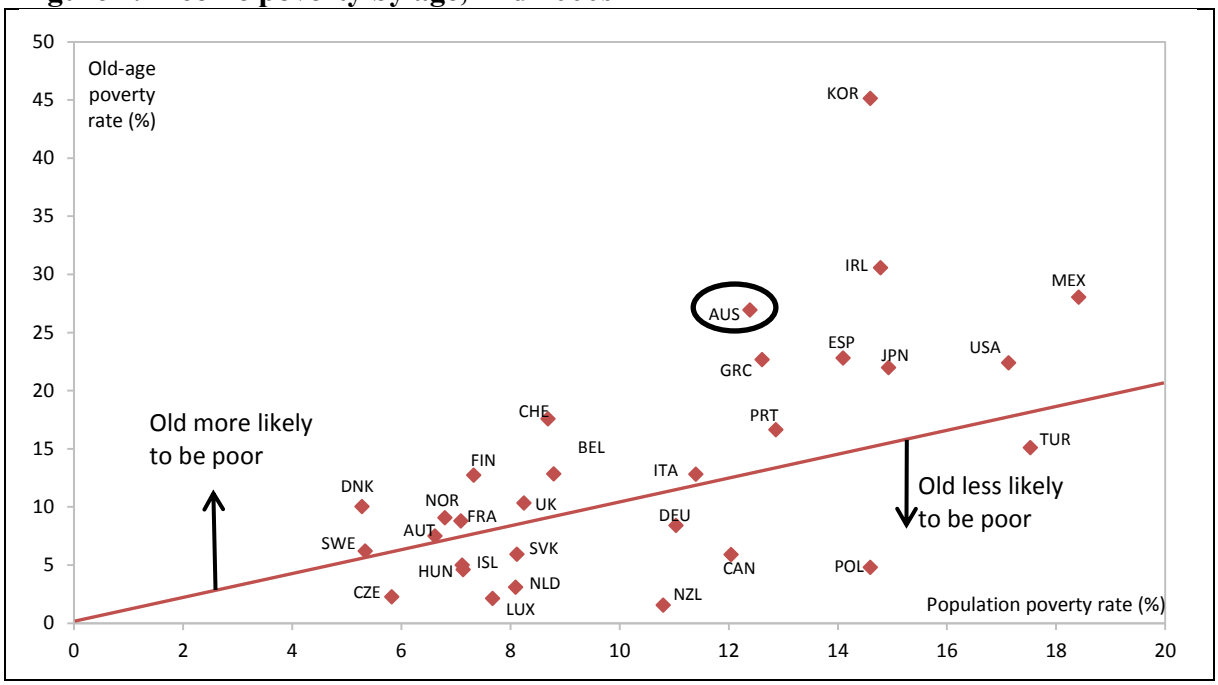
The unit of measurement is often income, which is a proxy for standards of living achieved by different groups. However, there are many other factors that can affect living standards, such as wealth, physical health, actual level of consumption, and public services. For example, a low-income household with above-average wealth may be better off than a medium-income household with no wealth.

For this reason, many countries consider consumption levels, which may also include the consumption of services. For example, France has made a concerted effort to measure the standard of living by including consumption, capital, and different dimensions of material living standards, including political engagement, following the Report of the Stiglitz Commission (Stiglitz et al., 2009; this report was also the motivation for the OECD's 'Better Life Index').

In various European countries, material deprivation indices have been developed to gauge the less tangible effects of poverty. Until recent reforms, the UK government used four key measures of

poverty which take account of income in relative and absolute poverty comparisons, non-income forms of poverty, and persistence of poverty. The official measures consisted of: (1) relative low income: proportion of pensioners living in households where income is less than 60 percent of median household income after housing costs; (2) absolute low income: proportion of pensioners living in households where income is less than 60 percent of median household income after housing costs in the base year adjusted for prices (base year was previously 1997, recently changed to 2010); (3) low income and material deprivation: proportion of pensioners who experience material deprivation (measured as the absence of access to social activities and goods and services) *and* live in households where income is less than 70 percent of median household income after housing costs; and (4) Persistent poverty - proportion of pensioners living in households where income is less than 60 percent of median household income after housing costs in at least 3 out of the previous 4 years.

Figure 1. Income poverty by age, mid 2000s



Source: OECD (2011)

Benefit levels in the UK may be influenced by, but are not directly set according to, poverty lines or material deprivation outcomes. In fact, many countries do not target poverty explicitly by way of benefit transfers. At the European level, the Europe 2020 strategy aims to reduce the total level of poverty or social exclusion through the Open Method of Coordination – a form of peer review, where actual targets and strategies are set at member level. The measures that are used to define poverty and social exclusion consist of living in households with (1) low work intensity (less than 20 percent of potential, taking account of age and disability); (2) before housing cost income below 60 percent of member country median; or (3) material deprivation (measured by lack of access to a set of social activities, or goods and services). To construct and monitor these measures, the EU uses a detailed annual household survey known as EU-SILC that also includes a longitudinal component.

For international comparisons, the OECD treats poverty as a 'relative concept', defining the poverty line as 50 percent of contemporary country median equivalised household disposable income (Figure 1). Such an analysis is helpful in gauging whether some countries' pension benefit packages are adequate. If the elderly are not more disadvantaged than other segments of the population, it may be that general social assistance may be a more appropriate use of limited government transfers unless programs already exist for other groups.

1.2 Household composition and benefit level

In setting income and poverty benchmarks, it is important to consider how income is shared between individuals in a household and to what extent the incomes of households with different structures can be compared. When measuring levels of poverty and the standard of living, it is standard practice to 'equivalise' household income. This is based on the idea that individuals gain from economies of scale in sharing household costs. A family of four may require more money than a family of one, but not four times as much.

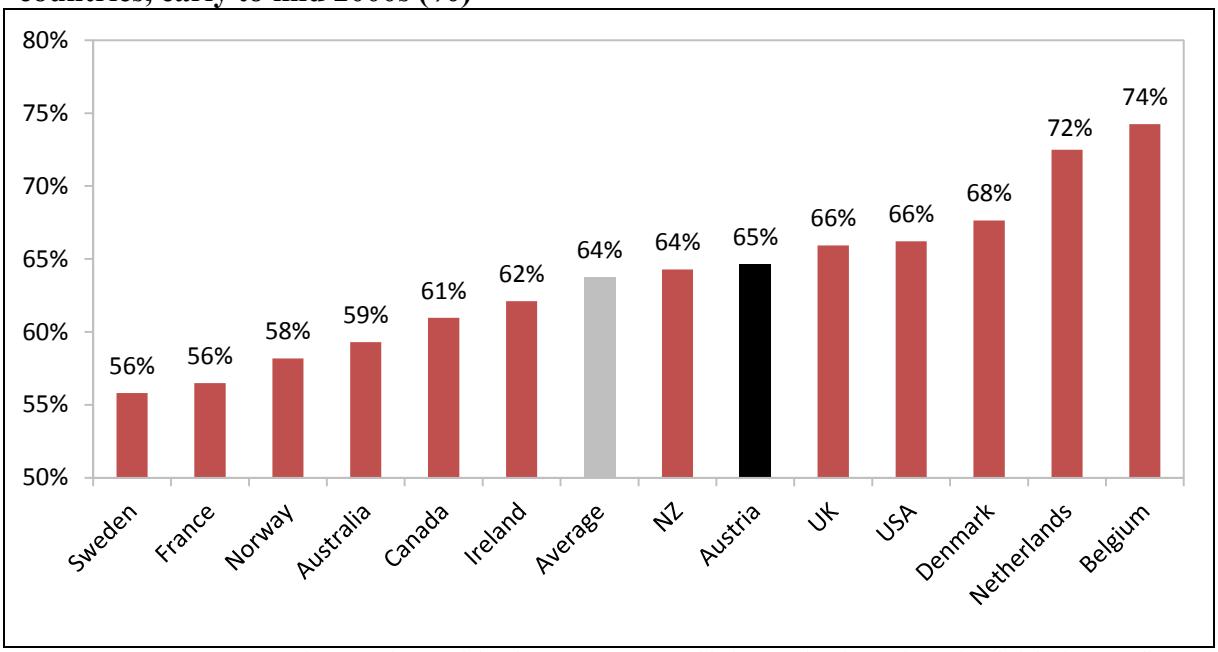
Different equivalence scales are employed in different countries. The OECD uses the square root of household size as its equivalence elasticity, which implies that the needs of a household composed of four people are twice as great as those of a single person (1.4 and 1.7 times those of a single person in the case of a childless couple and of a couple with one child). That selection involves assumptions about the economies of scale available to different households.

The choice of equivalence scale can dramatically alter the measure of poverty. For example, Lanjouw et al. (1998), looking at data from seven countries in Eastern Europe and the former Soviet Union, found that a change in equivalence rules can reverse the average poverty ranking of households with elderly adults versus households with two or more children. It suggests that even though there is no one correct answer to the specification of equivalence scales, it is necessary to take economies of scale within households into account in assessing poverty.

Pension benefit levels are often set based on the concept that couples can share costs – a pensioner couple does not always receive double the level of a single pensioner. There are several approaches to determine the relativity between couple and single benefit levels. A policymaker could consider the statistical relationship between spending on necessities, the level of income, and household composition to define how these factors relate to each other for different households. An alternative approach might be to match households on the basis of outcome (e.g. financial stress). That method would involve finding the ratio of incomes for different households with the same level of outcome.

In the OECD, all countries except Austria, Germany, Italy, Luxembourg, Spain, and Turkey provide pensions with higher overall gross replacement rates for one-earner couples compared to a single earner (OECD, 2011). Much of this is to do with benefit levels within basic pension schemes. Figure 2 presents this relativity for non-contributory payments for selected OECD countries where data was available. On average, a single pensioner receives approximately 64 percent of the benefit received by pensioners living in a couple. Outside of the OECD, it is more unusual to have different amounts for couples and singles.

Figure 2. Payment to single pensioner relative to combined couple, selected OECD countries, early to mid 2000s (%)



Source: Harmer (2009). Note: Relates mostly to social assistance payments to elderly; Data is prior to change in relativity in Australia that increased the rate of pension for single pensioners.

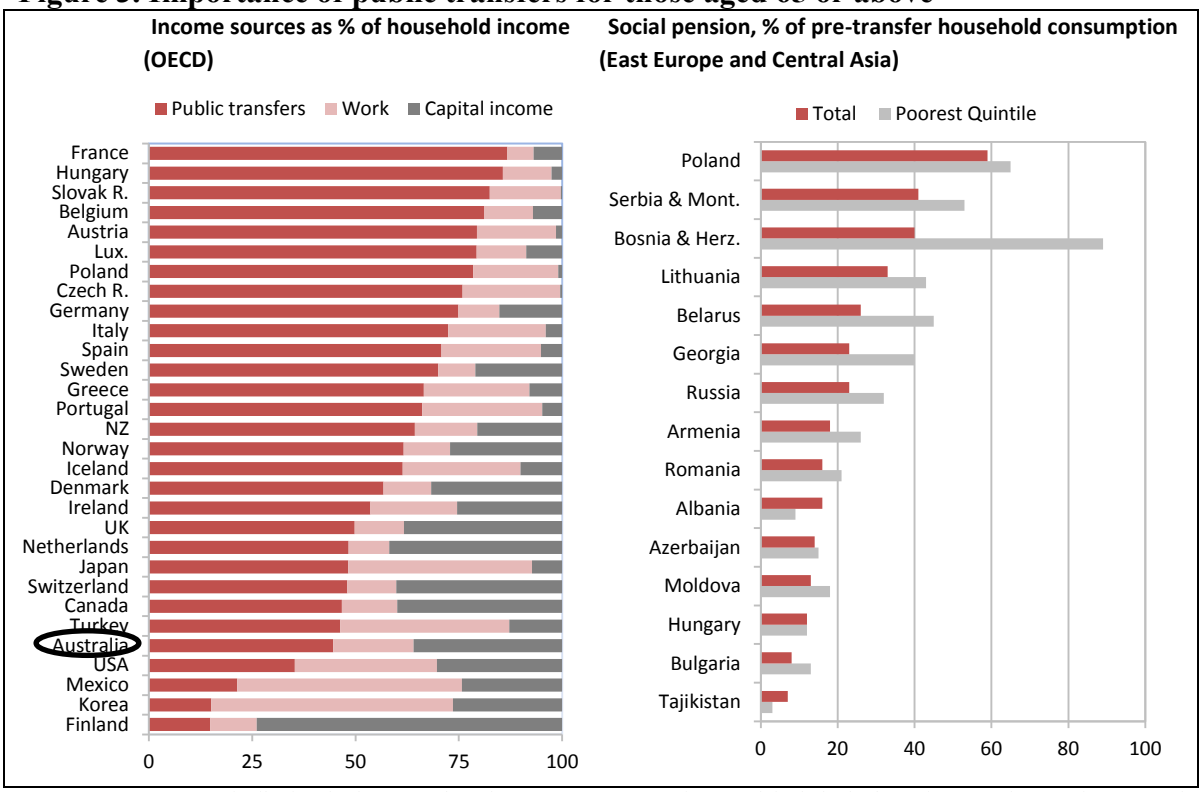
1.3 Relationship between poverty and benefit level

So what are the implications for the benefit level and pension systems overall? Any diagnostic of vulnerability and poverty levels of the elderly population should include the overall resources at their disposal. In some countries the elderly can rely on a well-developed private pension system or on labour market earnings, either by way of working longer or cohabitation with younger workers, and as a result social pensions and other transfers make up only a proportion of income and pre-transfer consumption (see Figure 3).

In setting benefit levels, policy makers should be mindful of not setting benefit levels too low, so that they have little impact on poverty, or too high and adversely affecting incentives. Higher benefits in the non-contributory pension may reduce incentives to participate in the contributory system. For example, SSA (2013) reports that in 2011, the contributory minimum pension in Uruguay, available at age 65, was worth a monthly 3,400 pesos, while the means-tested non-contributory pension available at 70, was much higher, at nearly 4,800 pesos – a situation that does not encourage high levels of contributions.

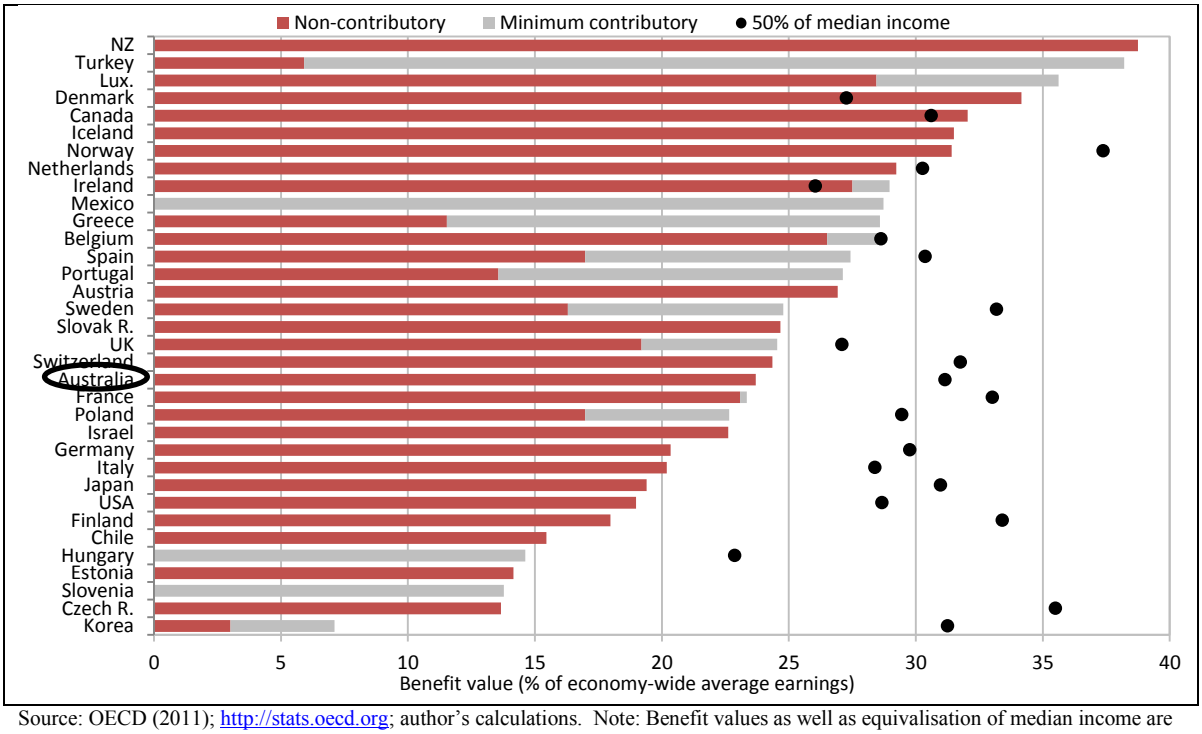
Figure 4 shows the levels of benefit of non-contributory and minimum pensions in OECD countries. It also gives an indication of the relative position of a poverty line if it were drawn at 50 percent of median income. The numbers shown in Figure 4 are complicated by the fact that many countries have multiple programs that may be additive or substitutive. The non-contributory benefit level represents the absolute minimum, assuming residency requirements are met. The minimum contributory level is based on maximum entitlement assuming a full contribution history on low earnings.

Figure 3. Importance of public transfers for those aged 65 or above



Source: OECD Income Distribution database; Grosh et al., 2008. Note: Income from work includes both earnings (employment income) and income from self-employment. Capital income includes private pensions as well as income from the returns on non-pension savings.

Figure 4. Benefit value of base pension schemes in OECD countries, late 2000s



Source: OECD (2011); http://stats.oecd.org; author's calculations. Note: Benefit values as well as equivalisation of median income are for a single person; in most cases figures are for 2008.

Overall, the average basic non-contributory benefit level represents 22 percent of average economy-wide earnings and the benefit level with contributory benefits is on average 25 percent. In most cases these are below the poverty line (i.e., 50 percent of equivalised household income)

and also below that attainable by someone working full-time on a minimum wage, which across the OECD is on average around 37 percent of a country's average wage.[1]

This brief analysis suggests that the level may be set at different benchmarks – for example, by drawing an absolute or relative poverty line, taking a proportion of average wages or minimum wages, constructing a budget standard for pensioners, or even comparing to some proportion of the benefits available in the contributory system.

These all have advantages and disadvantages. For example, subsistence level may be too low, poverty lines can be arbitrary and sensitive to social benefit decisions affecting the median, budget standards are based on subjective judgments of 'focus groups', and using a proportion of minimum wage as a basis may distort decisions about minimum wages.[2]

Ultimately, since judgments about living standards are subjective, so too will be the decision on the appropriateness of the benchmark in setting pension benefit levels[3]. In most cases, these would be used only as a guide. An important step would be for policymakers to look at the benefit levels implied by each benchmark, side by side, as well as conducting simulations on the likely impact of different benefit levels on proportions of pensioners below and above different benchmarks.

The subjectivity can be observed in the assessment of adequacy in the Melbourne Mercer Global Pension Index, which gives full marks to pension systems with a minimum pension of 30 percent of average earnings and no zero for countries that offer less than 10 percent of earnings. These were set based on the distribution of minimum pension levels in OECD countries when the index was devised in 2009.

Australian policymakers have chosen to benchmark the maximum Age Pension to a given proportion of average wages, based on poverty studies (e.g., Harmer 2009). This translates to a benefit of approximately 27.7 percent and 41.76 percent of Male Total Average Weekly Earnings for singles and couples, respectively (an additional supplement for cost-of-living expenses, such as utilities, is also paid).

1.4 Indexation of benefit level

Indexation relates to the adjustment of parameters over time. As with benefit levels themselves, the indexation practices for pension parameters are a function of the arrangement and objectives of the pension system or pension scheme. The argument for indexing various parameters of the

[1] In some countries, the full benefit package, which may include other supplements, may bring those without any other income out of poverty, as defined in Figure 4. Also, it is worth noting that such comparisons are only indicative – they do not take account of differences in delivering state support in health, housing, and other services that affect the standards of living of pensioners. In some cases, supplemental payments relate to extra costs borne by pensioners such as fuel costs, disability, or health. An incidental point to this may be that responding to such heterogeneity by providing various cash supplements involves a trade-off between targeting and simplicity.

[2] That is, minimum wage decisions ought to be taken with labour market institutions in mind rather than the living standards of pensioners

[3] Yet another way of arriving at the level is to start with surveys of self-assessed, subjective wellbeing or of adverse outcomes at a given level of benefit or income.

pension system is to maintain its structure and sustainability over time and to honour the intergenerational insurance contract (see Whitehouse et al., 2009, and Piggott and Sane 2009 for further discussion on indexation).

For pensioners themselves, indexation means the alleviation of inflation risk, which they, compared to the working-age population, are less able to bear. Unless protected by indexed pensions or annuities, benefit value erodes and pensioners' consumption and standards of living suffer. Indexation can be based on prices, wages, and combinations of the two.

Formalising indexation may also take sensitive benefit decisions out of the political arena and into the realm of the law. However, Whitehouse et al., present evidence across the EU and OECD that shows how values of benefits diverge from the ostensible policy, suggesting continued political intervention with the adjustment mechanism.

Indexation is important both before and after retirement, since a change in value of a benefit to pensioners today affects starting value for pensioners tomorrow. For example, the UK's Basic State Pension was linked to prices in 1981. It was then worth 24 percent of average earnings. Despite some discretionary increases since then, it dropped to 15 percent of average earnings by 2009.

In this way, how different elements are indexed has an impact on what importance these will have in the overall future of the pension system. For example, estimates of below-wage indexation of Poland's social pension floor show that this element will lose its redistributive power and practically disappear in the next decade (Choln-Dominczak and Strelecki 2013).

One strategy is to index the starting value with earnings, to ensure the structure of the system remains intact, while indexing pensions in receipt with prices to ensure pensioners maintain their purchasing power. Indexation should also apply to other parameters in the system, such as thresholds for targeting, otherwise the income or asset tests will increasingly affect people lower down in the income and asset distribution than the test was designed for.

Many countries have formal indexation policies. A summary of OECD and EU benefit indexation policy is presented in table 1 and the value of the main public base pension is shown discounted with wages for a selected set of countries in figure 5.

Price indexation tends to be the most common in high income countries. But many use hybrid indexation – a combination of price and wages, and may also include longevity-related adjustments. For example, the targeted pension in Norway is adjusted upward with wages but downwards based on cohort life expectancy increases.

The choice between prices and wages can be thought of as a trade-off. If wage growth exceeds price growth, for a given budget, smaller increases in pensions during retirement mean a higher starting point (i.e. higher replacement) and vice versa. There can be an infinite combination of initial award and subsequent adjustment. So it is important to think about what level of benefit people might want when, which is linked to whether 'marginal utility' of income falls or

increases with age (e.g. lower consumption versus higher health costs). Economies with high levels of economic growth may want to use wage indexation to share the benefits of growing wages with older people. And there are other distributional consequences – people with lower incomes have a shorter life expectancy so may want more, earlier.

Table 1. Indexation policies for targeted, minimum and basic* pensions, OECD and EU countries, 2009

Mostly discretionary indexation

	Targeted	Minimum	Basic
Bulgaria	D	D	
Lithuania		D	D
Germany		D	
Austria	D		
Italy	D		
Estonia		D	WP
Greece	D	W	
Portugal	D	W	

Mostly wage indexation

	Targeted	Minimum	Basic
France	W	P	
Denmark	W		W
Iceland	W		W
Ireland	W		W
Norway	W		W
Australia	W		
Luxembourg		W	W
Netherlands			W

Combination of wage and price indexation

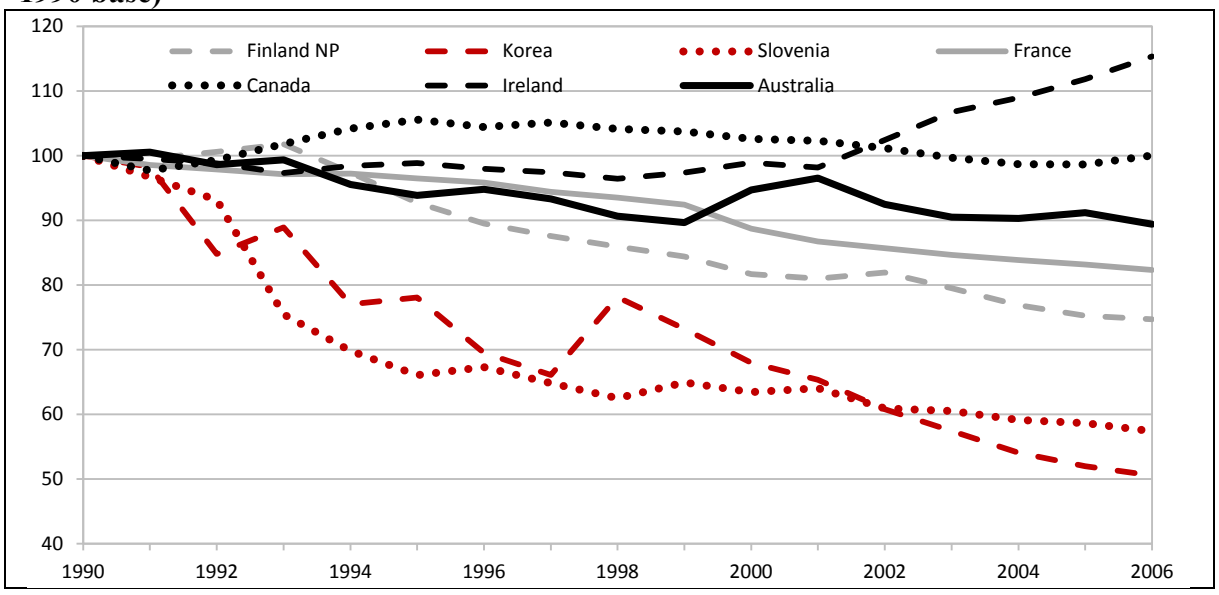
	Targeted	Minimum	Basic
Switzerland	WP		
Hungary		WP	
Poland		WP	
Cyprus		P	WP
Czech R.		P	WP
UK		P	WP
NZ			WP

Price indexation

	Targeted	Minimum	Basic
Canada	P		P
Belgium	P		
Korea	P		
Malta	P		
Sweden	P		
Turkey	P		
USA	P		
Latvia		P	
Mexico		P	
Spain		P	
Finland			P
Japan			P

Source: Whitehouse et al. (2009). *Note: The definitions used here are based on OECD classification which defined basic schemes as flat-rate or depending on number of covered years. This is unlike the definition used in the rest of this paper, which labels pensions that depend on years of contribution as minimum schemes, and those schemes that are non-contributory and depend only on age and residency as universal.

Figure 5. Wage value of main targeted, minimum, or basic* pension over time (%, 1990 base)



Source: Whitehouse et al. (2009) and . *Note: See note in Table 1

For governments there are also macroeconomic considerations because pension increases can affect the budget. Germany implemented a fiscal sustainability mechanism in its pension

calculation, but when this meant lower increases for pensioners, the government overrode the mechanism for political and macroeconomic reasons. In Russia the social and notional defined part of the labour pension are both increased in line with wages, however explicit policy allows this to be overridden based on availability of revenue.

Another set of questions pertains to the use of an appropriate index. Most countries use a version of the consumer price index (CPI) to adjust pensions in payment, which has the strength of simplicity. But there is also an argument in favour of using an index that takes account of the prices of goods and services that older people generally consume. For example, older people spend proportionally more of their incomes on food and fuel. In the United Kingdom, for example, price inflation for pensioners in 2008 reached 7.4 percent compared with 5.4 percent for the population as a whole. In Australia, though wage benchmarking exists, the pension can also rise with a specially designed 'Pensioner and Beneficiary Living Cost Index'.

Similar issues exist with wage indexation – for example, should the mean or median wage be used? Should it be average wages, or full-time wages? In Australia, the Harmer Review recommended replacing the Male Total Average Weekly Earnings benchmark with a measure of the net income of an employee on median full-time earnings, while the recent 'National Commission of Audit' suggested benchmarking to Average Weekly Earnings, which includes male and female workers.

There are also differences among pensioners. In one UK study, the inflation rate for the poorest, oldest pensioners was 9 percent compared with 6 percent for the youngest, richest retirees (Leicester, O'Dea and Oldfield, 2008). Longer-term studies in UK suggest there are year-on-year differences in the index based on pensioner consumption, but no long-term difference with the overall index. Some incorporate moral judgements: Belgium excludes tobacco, alcohol and petrol.

Finally, frequency of benefit adjustment is important. This will largely depend on the volatility of the index used. For example, in periods of rapid inflation, pensioner's purchasing power may need to be adjusted more regularly. In countries with mixed price and wage indexation, the adjustment with prices may take place more regularly than the adjustment with wages, which has a more medium-term purpose.

PART II: ADEQUACY WITH RESPECT TO INCOME REPLACEMENT

2.1 Design features to ensure adequate income replacement

Alongside poverty alleviation, income replacement is a key objective of any retirement income system. Income replacement relies on additional pillars of the retirement income system on top of any minimum and social pensions. Some design features of these additional pillars can improve the likelihood that the system provides adequate retirement benefits.

For example, in constructing the Melbourne Mercer Global Pension Index, assessment is made of several categories of features that affect a pension system's scoring on 'adequacy' in addition to

attracting scores for the levels of minimum pension and hypothetical median worker pension.[4] These features are generally consistent with a well-functioning *funded* pension system. They include: whether third pillar, voluntary contributions are treated favourably by the tax system; whether a minimum access age and withdrawal restrictions limit the amount of 'leakage' of funds before retirement; the level of mobility and vesting of pension rights, including maintenance of the real value of funds over time; whether income streams are mandated and allow for conversion of lump sum accumulations into income over the course of retirement; and whether contributions to a funded pension are maintained during temporary absence from work.

The lattermost feature, about contributions during time away from work, would be important for women who tend to take time off to care for children or people with a disability. In some countries, caring responsibility results in credits or top-ups in the pension system, potentially linked to parental leave periods. In Australia there has been limited policy development with respect to offsetting superannuation shortfalls for informal carers. The Human Rights Commission, among others, has made some recent recommendations in this regard.[5] Still, it is unclear if such compensation should be channelled through the mandatory savings pillar or the safety net, redistributive pillar.

With respect to mandating an income stream, the Melbourne Mercer Index ascribes a maximum score to countries where between 60 and 80 percent of the benefit is mandated to be converted into an income stream. This is an area of particular interest in Australia, with a recent report from (Financial System Inquiry 2014) raising it as an issue for income replacement in retirement.

Other features that enhance the role of the pension system to transfer funds from work to retirement, such as administrative efficiency and appropriate investment, are also relevant. This is an area that has attracted attention in Australia, both in the Super System Review (2010) and the Financial System Inquiry.

2.2 Replacement rates as benchmark for adequate income replacement

Replacement rates calculate the proportion of working age income that is provided in retirement. These act as the primary rule of thumb to evaluate the adequacy of income replacement. The concept seeks to capture the extent to which individuals' standard of living in working life will be matched in retirement.

There are a number of reasons why people could maintain their standard of living with a replacement rate below 100 percent, including that: income taxes, social contributions, and mandatory savings, are lower or absent for retirees; housing costs are lower since the majority own their own houses; there are often fewer costs related to dependents; and other savings are often made by not working and having more time for home production (e.g. food preparation). Because of differences in taxes, net replacement rates tend to be better indicators.

[4] Adequacy is one of the three sub-indices that comprise the Melbourne Mercer Global Pension Index. The other sub-indices are 'sustainability' and 'integrity.

[5] https://www.humanrights.gov.au/publications/gender-gap-retirement-savings

Another conceptual issue is the period over which working age and retirement income is compared. Should the denominator be based on final year or average lifetime earnings (revalued with earnings growth)? And should the numerator rely on pension income in the first year of retirement or should assumptions be made about use of funds throughout retirement (e.g. OECD calculations assume an annuitised income stream for all countries).

It also matters at which point of the income distribution we measure replacement rates. The redistributive nature of retirement income systems, which also reflects social norms, implies that those with low incomes will see much higher replacement rates than middle earners. But the gradient might not be constant as incomes increase since those at the top of the income distribution are more likely to have access to voluntary savings vehicles beyond the retirement income system compared to those in the middle. When looking at replacement rates in a retirement income system, it is standard practice to consider mandatory part of the system and calculate these for middle income earners.

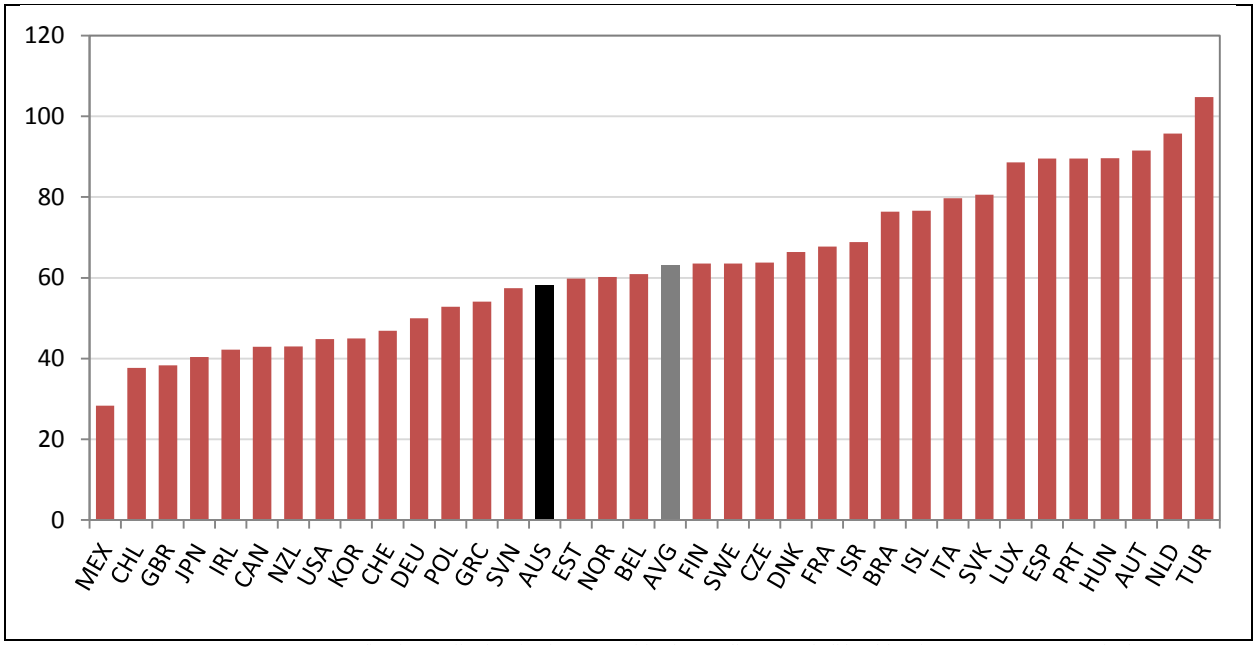
Though rarely acknowledged, replacement rates don't differentiate by relationship / cohabitation status. They are calculated for individuals only despite the fact that less income is needed for those who are part of a couple (see section 1.3, above).

While policymakers in some countries set targets or design their pension systems with a target in mind (e.g. in setting contribution levels), those in countries with Defined Contribution schemes do not tend to mandate a set level. The World Bank (1994) noted a guideline target replacement rate for middle income earners in mandatory schemes that can be expressed as either 78 percent of net average lifetime earnings; 60 percent of gross average lifetime earnings; 53 percent of the net final year earnings; or 42 percent of the gross final year earnings.

Within the Melbourne Mercer Index, retirement income systems that provide median workers with a net replacement rate of between 70 and 100 percent of median lifetime earnings (revalued with earnings growth) score the highest marks for that component of the adequacy sub-index. Replacement rates below 20 percent score zero, while those with replacement rates above 100 percent incur a reduction in their score due the system's potential inflexibility to individual circumstances and overprovision.

The OECD routinely calculates theoretical net replacement rates that a full career worker newly entering the labour force could expect at retirement under reasonable circumstances. The latest figures are presented in Figure 6. For average earners, the net replacement rate in mandatory schemes across the OECD averages 63 percent. The rate in Australia is below the OECD average, at 58 percent. Australian replacement rates are above average for low earners. A full career Australian worker on half of average earnings can expect a net replacement rate of 87 percent, compared to an OECD average of 75 percent. Note that calculations rely on older parameters – Australian replacement rates are expected to increase as the mandatory savings rate increases from the 9.25 percent modelled by the OECD to 12% in 2025.

Figure 6. Net theoretical replacement rate for average worker



Source: OECD (2015). Note: Assumes Defined Contribution funds are annuitised according to male life tables (i.e. women's rates can be lower)

PART III: ADDITIONAL AUSTRALIAN CONTEXT AND CONCULSIONS

3.1 Adequacy in the Australian first pillar

The most recent comprehensive analysis of Age Pension adequacy was undertaken in 2009 in the Harmer Review (Harmer 2009). The review's approach stemmed from the idea that adequacy relates to providing 'a basic acceptable standard of living, accounting for prevailing community standards' (page 23). This recognises the role of the pension in providing basic and ongoing income support to Australians who may need this support for an extended period.

But the Review report recognised that defining adequacy in this way did not provide a cut-and-dried answer to the level of benefit. A given benefit will lead to different outcomes in terms of well-being for different individuals, even if they are in similar circumstances, depending on different skills, capacities, priorities and aspirations. What is adequate for one person may well not be adequate for another. Where people's circumstances vary (health, household composition, housing tenure), more diverse outcomes will occur.

The Review's findings should be front and centre in the current debate over retirement incomes. We reproduce (in some cases abbreviating or paraphrasing) the most important in considering adequacy here:

Finding 1: The Review finds that the Age Pension, Disability Support Pension and Carer Payment should be paid at the same basic rate.

Finding 2: The Review finds that the specific costs associated with health and disability are best responded to by targeted services rather than generalised differences in base rates of payments or financial supplements.

Finding 5: The Review finds that a relativity (of singles to couples) in the range of 64 to 67 per cent across the package of support would be more appropriate than the current relativity. Adopting a relativity towards the upper end of this scale would appear to be reasonable if a three-tier approach were to be adopted. Under a two-tier approach, where the same relativity would be applied to single pensioners living alone and those living with others, a relativity at the lower end of this scale would more adequately reflect the average needs across both groups.

Finding 7: The Review finds that there is strong evidence that many pensioners in private rental housing face particularly high costs and have poor outcomes. Rent Assistance and social housing have complementary roles to play in addressing the financial security of these pensioners.

3.2 Adequacy and Australia's second pillar

The Harmer Review took the conventional position on adequacy that we have adopted generally adopted in this paper: that adequacy is independent of the standard of living an individual may have enjoyed through their working life, and is related to poverty alleviation.

Dealing with income replacement in retirement adds a new dimension of discretion and subjectivity to defining adequacy. As noted above, the standard approach to whether income replacement is adequate is to calculate replacement rates. In the context of a mandatory DC plan such as Australia's, there are three essential components to adequate accumulation of retirement savings that provide income over and above the Age pension: net contribution rate, contribution duration, and net return. Converting this accumulation to income requires good financial products in retirement. All these are affected by a series of design features discussed above.

Contribution rates are obviously crucial in this. If it is accepted that the price of labour is equal to total compensation, then it follows that increased contribution rates mean less income and liquidity through working life. Low income workers may be adversely affected by contribution rates set too high. Relatedly, the contribution rate itself has to be carefully defined. A 10 percent contribution rate into the pension accumulation account may be the same as a 12 percent rate before costs, or an even higher rate if the contribution itself is taxed, as in Australia. Careless comparisons with international practice can therefore be very misleading.

The second critical element in the accumulation is net return. Here, administration costs are critical. Over a lifetime of work, a one perentage point (of assets) difference in costs can translate into a 30 percent or more difference in accumulation value, depending on the gross rate of return assumed. So in Defined Contribution plans, lower costs and higher administrative efficiency can be important aspects of overall pension benefit. Complex regulation, time out of the workforce to have children, unemployment, and poor health all contribute to lower accumulations than might be expected with continuous employment.

When considering income replacement adequacy, therefore, it is important to bear in mind that life course circumstances, as well as circumstances in later life, have a major bearing on outcomes. Heterogeneity impacts both accumulations and needs in retirement. As noted above, replacement rate definition also needs to be considered - not just gross or net, but also the period considered for both earnings from employment and benefits. Comparisons of replacement rates that ignore these nuances can be problematic.

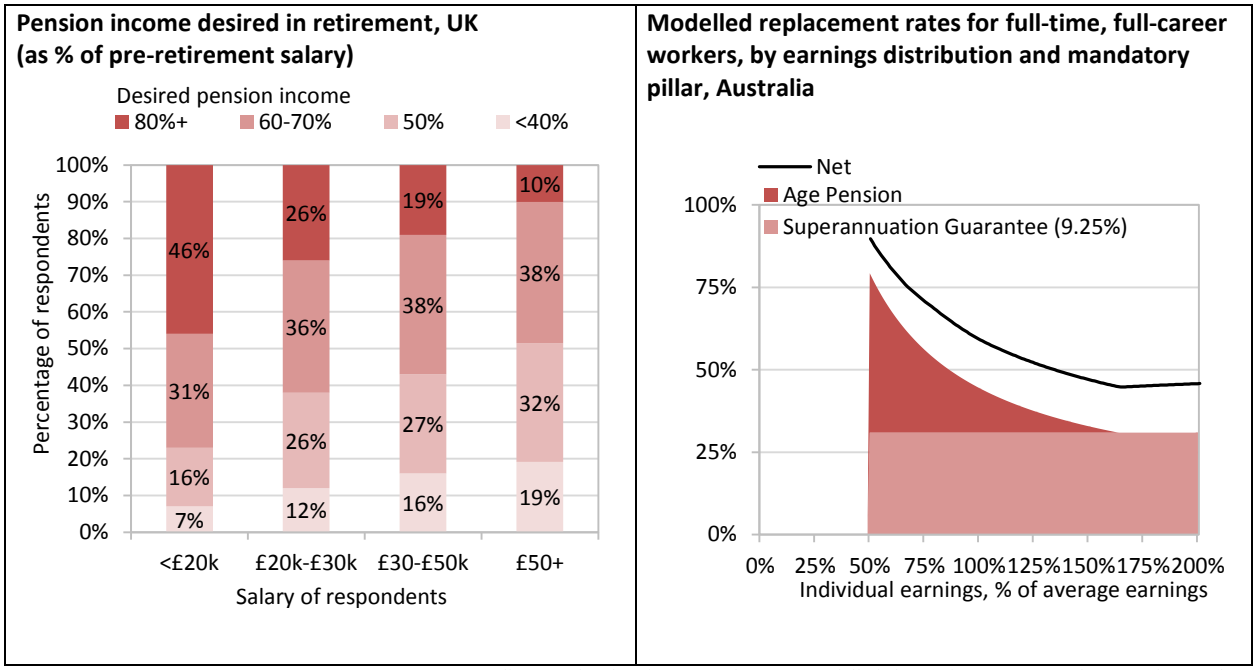
With these points in mind as a caveat, what net replacement rate do individuals themselves desire, or think of as "adequate"? Towers Watson (2010) report results of a survey undertaken in

the UK in 2008, in which people with different incomes were asked what they considered to be an adequate replacement in retirement. Results are reproduced in Figure 7, left-hand panel.

The important finding is that the lower the income from employment, the higher the replacement rate nominated. For example, 46 percent of workers earning less than £20,000 said they required a replacement rate of 80 percent or more, compared with only 10 percent of respondents in the £50,000-and-above bracket.

This pattern of replacement rates is what is expected to be delivered by Australia's overall retirement income policy. The OECD (2015) has calculated the expect replacement rates for people across the earnings distribution, generated by a combination of Age Pension benefits and the Superannuation Guarantee, annuitised. Results are reproduced in Figure 7, right-hand panel. The reported pattern of replacement rates echoes the desired pattern revealed by the UK study.

Figure 7. Adequacy of income replacement



Source: TowersWatson (2010); OECD (2015). Note: Australian mandated savings rate of 9.25% (modelled above), is now 9.5% and expected to reach 12% by 2025.

One way to evaluate what people find adequate from income replacement in Australia could be to look at what member of the public consider as a 'comfortable' standard of living in retirement (based on the ASFA retirement budget standards) as a proportion of average earnings. Such a calculation for a single pensioner shows that a 'comfortable' standard of living is equivalent to 53 percent of average full time adult total earnings. According to the OECD calculations, the Australian system's replacement rate achieves a net replacement rate above this level. This exercise does not however give us insight about the desired or expected levels of replacement rates across the earnings distribution.

3.3 Conclusion

In this paper, we have attempted to give substance to the notion of adequacy in the context of retirement income. The predominant idea of adequacy relates to poverty alleviation, and we develop this by reference to international literature and policy experience. We find that for developed countries at least, most measures of poverty are relative, requiring automatic or discretionary adjustment in line with changes in community standards of living.

Because, late in life, circumstances are very diverse, the notion of adequacy needs to be flexible. Here we discuss household composition in detail, but other circumstances, such as health status and home ownership, can also be critically important.

One reason why international organisations such as the OECD consistently rate Australia's elderly poverty rate as among the highest in the developed world is that housing, and particularly wealth held by the elderly in the form of housing, is inadequately recognized in OECD modelling. Australia has among the highest elderly owner-occupancy in the developed world, and among the highest outright ownership rates.

A second reason is that the maximum rates of Australia's Age Pension are set just below the OECD defined relative poverty threshold (50 percent of median equivalised household income). In fact, figures for average depth of poverty in Australia (distance from poverty threshold) are remarkably low (OECD 2013).

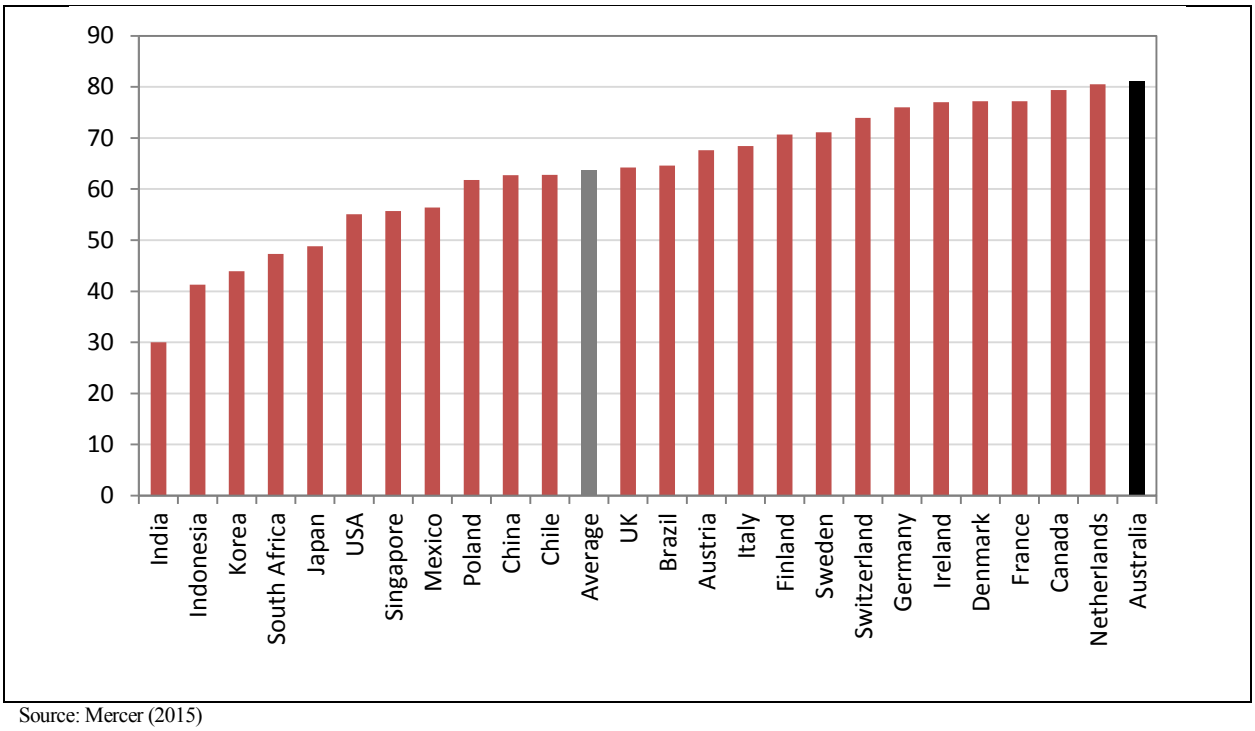
The paper also discussed the design features that can improve adequacy with respect to income replacement and the concepts and measurement methodology behind the replacement rate. Such a measure can act as a rule of thumb to evaluate income replacement. Generally, replacement rates are used as a guide rather than acting as a hard target.

We set some of the Australian context by discussing recent reviews, such as the Harmer Review, which focused on the adequacy of the Age Pension as well as the adequacy of benefits designed to alleviate poverty. We provided some evidence that the *pattern* of replacement rates across the labour income distribution generated by the overall Australian retirement policy structure is not too different from what people in these earnings brackets think of as adequate.

We have limited evidence on whether people think the actual levels of retirement income generated by the Australian policy are adequate. However, according to a back-of-the-envelope analysis of community-based budget standards and simulations of replacement rates, the Australian system delivers what is viewed as a 'comfortable' replacement rate. The Harmer review provides some evidence that the Age Pension, at least, should be classified as adequate with respect to poverty alleviation in conjunction with separate benefits that account for different costs such as rent.

Finally, it is worth drawing the reader's attention to the Melbourne Mercer's adequacy sub-index, which takes account of adequacy with respect to minimum, income replacement, and relevant design features. It is shown in Figure 8 and reveals Australia to score well on the 'adequacy' of its retirement income system. Still, such indices come with inherent limitations. For example, the selection and weighing of the index criteria are necessarily subjective – but perhaps not more so than the concept of adequacy itself.

Figure 8. Melbourne Mercer Global Pension Index's Adequacy Sub-Index (out of 100)



Source: Mercer (2015)

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