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Economy-wide effects of means-tested pensions: The case of Australia ☆

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ABSTRACT

The Australian age pension is non-contributory, funded through general tax revenues and means tested against pensioners' private resources. This paper examines the economy-wide implications of policy changes to the means test and access age of the age pension. To this end, we applied an overlapping generations model stylised to the Australian economy, with the capacity to investigate tightening the existing means test (by increasing the taper rate at which the pension is withdrawn) and increasing the pension access age. The simulation results indicate that tightening the taper rate combined with lower income tax rates increases per capita labour supply, assets and long run welfare but reduces the welfare of current generations who have their pension cut. However, the welfare losses to current generations are shown to be mitigated by increasing the taper rate gradually over the next decade. Such reform results in a significant reduction in overall pension expenditures and has more equitable distributional implications compared to increasing the pension access age. We also show that population ageing further strengthens the case for means testing public pensions.

Introduction

The public age pension represents the first pillar of Australia's pension system, which is currently the major source of income for most Australian retirees. The age pension is somewhat unusual among other developed countries in that it is non-contributory, funded through general tax revenues and means tested against pensioners' private resources, including labour earnings. The means test effectively excludes the top 20% of the age-eligible population from receiving any public age pension but sees almost 50% of the population receive the full amount. The Australian government has recently implemented several changes to the means tested age pension, with aims of better targeting the pension to those seniors most in need and of containing overall government spending on the age pension. These changes include an increase in the taper rate at which the pension is withdrawn from 0.4 to 0.5 and increasing the pension access age gradually from 65 to 67 in the near future.[1]

In this paper, we assess the economy-wide implications of several hypothetical policy changes to the means testing of the age pension via altering the taper rate. The main motivation is to assess further increases in the taper rate to contain pension expenditures which, similarly to public pensions in other ageing economies, are expected to increase significantly in the future. As many countries do not have targeted public pensions (e.g., New Zealand), we also examine the impact of policy changes that relax the existing means test by reducing the taper. Finally, we provide a comparison between gradual increases in the taper rate and in the pension access age, which is highly relevant today as the latter policy is being widely adopted or proposed around the world.

The main objective of this study is to explore the implications of these public pension policy changes in relation to incentives of individuals to work and save, macroeconomic aggregates and individual welfare. While it is well known that public pensions may discourage lifecycle labour supply and saving (as they act as a substitute for private income in retirement), the effects of the

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[1] These changes were part of the 2009 age pension reform (see Commonwealth of Australia, 2009) that also included (i) a 10% increase in the maximum pension for single pensioners (to provide pensioners with an adequate income support), and (ii) a new work bonus (to encourage labour supply of older Australians). In 2011, the work bonus was enhanced such that the labour earnings exemption from the means testing applied up to the first $6,500 per year.

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means testing on labour supply and saving are not as clear-cut. On the one hand, means testing is often criticised for the high effective marginal tax rates (EMTRs) generated by a withdrawal of the pension benefit, thus having negative implications for labour supply and the saving behaviour of some older people. On the other hand, means tests reduce public pensions, resulting in higher lifecycle labour supply and saving. In addition, means tested pensions allow for lower taxes on workers, providing households with further work incentives. The paper also determines distributional welfare effects and draws out budgetary implications for the government. Understanding these effects will benefit not only Australia but also other developed countries that face large public pension liabilities associated with ageing populations and traditional pay-as-you-go retirement programs.

To undertake this analysis, we apply an extension of the overlapping generations (OLG) model developed for Australia by Kudrna and Woodland (2011a,b), with a more detailed disaggregation of households into income quintiles and an updated calibration to recent Australian data. Our methodology has a range of features that make it particularly appropriate for the analysis of means tested public pensions (not just in the Australian context, but worldwide). First, the model employs lifecycle utility maximisation with endogenous retirement and a broader pension means test imposed on both assets income and labour earnings – allowing for a different means test treatment of these two sources of private income. This is in contrast with most studies that assume exogenous retirement and thus assess only assets and/or asset income under the means test – see, for example, Sefton et al. (2008), Kumru and Piggott (2009, 2012), Cho and Sane (2013) and Kitao (2014). Second, we incorporate into the model inter- and intra-generational heterogeneity among households, which allows us to evaluate policy impacts upon different household types. Third, the model includes a detailed model-equivalent representation of Australia's age pension, superannuation and income tax policy settings and hence captures important interactions between household behaviour and these policy settings.

Another important contribution of our analysis to related literature, which has focused largely on the long term equilibrium effects (e.g., Määttönen and Poutvaara, 2007; Tran and Woodland, 2014), is that we investigate the implications of policy changes upon impact, over the transition and in the long term. The transitional effects of means testing pensions are also analysed by Kudrna and Woodland (2011a) and Fehr and Uhde (2013, 2014). In contrast to Kudrna and Woodland (2011a) who examined the hypothetical removal of the Australian pension means test, we concentrate on the policy changes that strengthen the means testing in order to contain government spending on the pension. Fehr and Uhde (2013, 2014) assume exogenous retirement and consider means testing of only asset income, while our model features endogenous retirement and the means test applied to both private income sources. Furthermore, our analysis also includes a comparison between tightening the means test and increasing the pension access age.

The simulation results for strengthening the means test via a steeper taper show significant reductions in age pension expenditures (by 17.04% for taper increased to one), allowing for lower income tax rates that are adjusted to maintain a balanced government budget. We show that tightening the taper combined with lower income tax rates has positive effects on per capita labour supply (0.82% increase), domestic assets (4.28% increase) and consumption (1.63% increase).[2] Interestingly, average labour supply at older ages also increases as most older households work more to offset lower pension payments, with some elderly not qualifying for any pension and, therefore, no longer facing high EMTRs on their earnings.[3] Similarly to Kumru and Piggott (2009) and Tran and Woodland (2014), our results show the positive effects of a steeper taper on average long run welfare, with the welfare gains being even larger in an endogenous interest rate framework and particularly in an ageing economy. In contrast, the short term welfare effects are significantly negative for current pensioners experiencing large cuts in their pensions. However, we show that the welfare losses to current generations can be mitigated by increasing the taper rate gradually over the next decade. We also find that tightening the means test via a steeper taper rate leads to more equitable distributional effects compared to increasing the pension eligibility age.

The rest of this article is organised as follows. The next section describes the model used for the policy simulations. Section "Calibration and benchmark economy" discusses the calibration of the model to the Australian economy and presents the benchmark solution for main lifecycle profiles and macroeconomic aggregates. Section "Quantifying the effects of taper rate changes" reports on the simulation results for the examined policy changes to the pension means test by altering the taper rate. Section "The effects of higher taper vs higher access age" compares the macroeconomic and welfare effects of gradual increases in the taper rate and in the pension access age. Section "Sensitivity analysis" is devoted to a sensitivity analysis of several modifications of the model. Finally, Section "Concluding remarks" offers some conclusions and policy recommendations.

Model description

The model builds upon a general equilibrium OLG model developed for Australia by Kudrna and Woodland (2011a,b). In this paper, the model is extended to include (i) a more detailed intra-generational heterogeneity based on income distribution data from Australian Bureau of Statistics ABS (2012a) and (ii) an updated calibration with a rich treatment of retirement income policy in 2012. It is essentially a small open economy type of Auerbach and Kotlikoff (1987) model that consists of household, pension, production, government and foreign sectors. In this section, we describe each sector, starting with Australia's pension policy and its features built into the model.

Retirement income policy

Australia's retirement income policy consists of three pillars. The first is a mandatory, publicly-managed pillar represented by the means tested age pension. The maximum pension benefit set at 27.7% of male average full time earnings is more generous and the age pension covers a larger proportion of the elderly population (i.e., almost 80%) compared to means tested pensions in most other countries (e.g., UK, Chile, Canada). The age pension is supplemented by the second pillar, consisting of mandatory retirement savings - known as the Superannuation Guarantee. The third pillar includes voluntary private retirement savings, such as voluntary superannuation (Australia's term for private pensions).[4] The model incorporates the main aspects of the two publicly-stipulated pillars – the age pension and mandatory superannuation.

The age pension is paid to households of age pension age ($a \geqslant 65$) if they satisfy the following income test.[5] Let p denote

[2] The percentage changes in the brackets relate to the long run implications of the taper increased to one relative to the benchmark with the current taper of 0.5.

[3] Note that while a steeper taper generates higher EMTRs for some pensioners, it affects a smaller proportion of the eligible population than a shallower taper.

[4] In contrast, most OECD countries rely on pay-as-you-go social insurance systems with defined benefits based on pre-retirement earnings that are usually accompanied with a basic flat-rate or minimum pension (OECD, 2015).

[5] The means test of Australia's age pension also includes the asset test, with the test that results in a lower pension benefit being used. The model considers only the income test as it is effective for about 70% of those currently receiving part age pension. Hence, the investigated reforms to relax or tighten the means test are carried out via changing the taper of the income test.