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A Fairer Tax and Welfare System for Australia:

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Associate Professor Ben Phillips, Richard Webster

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Executive Summary

This research paper was commissioned by the St Vincent de Paul Society National Council of Australia Inc. as an initiative to help address the growing gap between ‘the haves’ and ‘the have nots’ in Australia. The paper proposes three simple policy proposals designed to improve the financial position of Australians most in need.

The groups at most risk of deep poverty and financial stress are identified as persons receiving JobSeeker payments and working age pensions, defined in this paper as including Disability Support Pension, Parenting Payments (Single) and Carer Payments. Other groups also linked to poverty and financial stress are renters, single parents and young persons. Additional spending is targeted to these groups to maximise reductions in poverty and financial stress and we estimate would lower poverty by up to a million people or 470,000 households.

The proposed policy changes add to the equity of the existing welfare system, providing extra assistance to those who are most likely to be in deep poverty and financial stress. Increases are proposed to JobSeeker, Parenting Payment (Single), Disability Support Pension and Carer Payment along with increases to low-income renters through increased Commonwealth Rent Assistance (CRA). The most generous policy proposal includes an increase to Family Tax Benefits.

Three policy options, ‘Low’, ‘Modest’ and ‘High’, propose payment increases to JobSeeker payments, ranging from \$150 per fortnight (Low) and \$200 per fortnight (Modest) up to \$436 per fortnight (High). These increases would apply to the base payment for JobSeeker which, for a single person, is an expected \$639 per fortnight under current policy by December 2022². The ‘Modest’ and ‘High’ proposals also increase working age pensions such as the Disability Support Pension by \$200 per fortnight from their current expected rate of around \$988 per fortnight. All proposals also increase the maximum CRA amounts by 50 per cent.

The additional social assistance is funded through moderate increases in capital gains tax, a progressive superannuation taxation, and indexation to income tax thresholds. The indexation of income tax thresholds initially provides increased revenue over the forward estimates (2022-23 to 2025-26) but results in a lower rate of personal income tax beyond 2027-28, compared to the current legislation. The progressive superannuation tax replaces the current flat tax rate by increasing the rate of tax as income

² Based on a simple inflation projection for the base rate of JobSeeker using the first quarter of 2022 as the base.

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increases, leading to lower taxation for persons of low and middle income and wealth and modestly higher rates of taxation for persons of higher income and wealth.

Superannuation and capital gains are currently taxed concessionally. As outlined in the 2020 *Retirement Income Review*, superannuation tax concessions heavily favour high income households and their total value is projected to exceed the cost of age pensions into the future³ (Treasury 2020). This proposal reduces the extent of these significant concessions for higher income and wealth individuals and households. Personal income tax is increased over the forward estimates through indexation of tax brackets, rather than incorporating the stage 1, 2 and 3 tax cuts.

The proposed policy changes would result in significant reductions in poverty rates amongst those groups of households with the highest rates of poverty. Applying the proposed 'High' policy lowers poverty for those groups at the greatest risk of poverty by around 50 per cent. The less ambitious policies 'Low' and 'Modest' also lower poverty, albeit not as significantly.

The policies direct more cash to existing payments such as JobSeeker, Disability Support Pension and Parenting Payment (Single). Changes to the overall architecture of the welfare or taxation system are avoided. Developing significantly different systems such as a universal basic income or a negative income tax was considered too politically difficult - regardless of the potential pros and cons of such policies.

The proposed 'Modest' and 'High' policies alter superannuation taxation from a mostly flat rate of tax of 15 per cent to one that is progressive, albeit still with a sizable discount to current marginal tax rates. The proposed changes to superannuation taxation modestly increase the total tax received through superannuation but lead to lower and middle-income persons paying less tax and receiving larger expected superannuation balances at retirement. Higher income and wealth persons are expected to pay modestly more tax and have modestly lower superannuation balances at retirement. Their balances would remain well in excess of what is required for a comfortable retirement⁴.

The proposal costs are relatively modest – between four and twenty billion dollars per year and are fully funded over the forward estimates. The proposed policy changes largely benefit low-income households – lowering poverty substantially for those most in need and increasing superannuation balances for persons of lower and middle income and wealth. The revenue required to achieve these gains is

³ See Chart 13 in <https://treasury.gov.au/sites/default/files/2021-02/p2020-100554-udcomplete-report.pdf>

⁴ There is considerable debate on the topic of what constitutes a 'comfortable retirement', one perspective in Australia and the most commonly cited are those compiled by The Association of Superannuation Funds <https://www.superannuation.asn.au/resources/retirement-standard>

collected from persons who have, and are likely to continue to have, high levels of income and wealth for now and into their retirement.

Introduction

The Australian tax and social security system has evolved slowly over recent decades and its main features have remained largely intact. For individuals, the system comprises a progressive personal income tax system, tightly targeted welfare payments (social security) operating alongside an economy with a relatively high minimum wage and a retirement income system that combines the age pension and a contributory and compulsory superannuation system.

The St Vincent de Paul Society's first-hand experience of assisting Australians living in poverty informed the thinking underpinning this research. This paper identifies where the current system is not working optimally and models a range of policy changes that help overcome some of the shortcomings that exist within the current tax and social security system. The suggested policy changes are, by design, not revolutionary, yet beneficial to those most in financial need. The proposed changes are relatively simple to implement within the existing system and potentially politically feasible.

The paper sets out three separate, but related, policy proposals that have been identified as 'Low', 'Modest' and 'High' policy change. The changes focus on shifting policy toward a stronger safety net for those who rely on the social security system with the aim of lowering poverty and the associated risks of financial stress. The additional expenditure is funded through modest increases in personal income taxation. The suggested changes to the tax system focus on moderate changes to personal income taxation thresholds and reducing capital gains tax and superannuation tax concessions.

The proposed policy options are but three of any number of options available to policy makers. We do not suggest these are the only or best options. However, they provide an example of what can be achieved with relatively modest changes to the existing system and total expenditure on supporting low-income Australians. The proposed changes are targeted to benefit persons who have the greatest financial need and would be paid for by those most able to accommodate a modest additional contribution.

The suggested policy changes to welfare payments use our optimal policy modelling methodology so as to minimise the required increase in taxation (Phillips 2018). Optimal policy modelling is an algorithm developed by ANU to ensure that for a given change in social security expenditure, the changes to payment rates are set to minimise poverty and financial stress – essentially providing the best value allocation of funds with respect to lowering poverty and financial stress.

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The policy changes suggested are modelled using the ANU microsimulation model of the Australian tax and transfer system – PolicyMod. This is a detailed model incorporating most elements of the Australian tax and transfer system for individuals and is based on an updated version of the Australian Bureau of Statistics (ABS) 2017-18 Survey of Income and Housing (SIH).

The modelling incorporates some important and significant changes to superannuation policy in Australia. We dynamically model these changes to understand their likely impact on the distribution of superannuation balances at retirement to ensure that vulnerable individuals are not unduly impacted. The dynamic modelling of the impacts on superannuation balances at retirement combines PolicyMod with a new dynamic modelling capability based on income transitions data from the ABS longitudinal Census data (ABS 2018).

Methodology and Policy Proposal

To gain an understanding of which groups in our society face the most financial disadvantage we consider their after-housing poverty rates. This analysis helps guide our suggested policy changes by showing which groups are at most need of further financial assistance. The poverty rates estimated in this paper are ‘after-housing’ in that they deduct housing costs from disposable income (gross income – personal income tax paid). Our poverty line is set at 50 per cent of the median of this ‘after-housing’ income measure.⁵

Table 1 shows the poverty rates for different household types. The poverty rates relate to ‘after-housing’ income. Poverty rates are an imperfect measure of disadvantage but still provide a reasonable assessment of which groups are more likely to be disadvantaged by serious financial stress. The poverty rates are estimates for December 2022 using the ANU PolicyMod model of the Australian tax and transfer system – largely based on an updated version of the ABS Survey of Income and Housing for 2017-18.

Income is adjusted for household size and composition using the Modified-OECD equivalence scale which adjusts the income to a ‘per adult’ basis. The first person in a household has a score of 1, subsequent adults 0.5 and children under 15 years of age 0.3. The bottom 2 percent of the income distribution has been excluded from poverty as recommended by the ABS. Such incomes (weekly estimates) may be an unreliable guide to the typical income of such households. As an example they may represent a low or negative week of income for a business.

Table 1. After-Housing Poverty by Household Type, PolicyMod December 2022

<i>Household Type</i>	<i>Category</i>	<i>Base</i>	<i>Households (000s)</i>	<i>% Households</i>
Main Source Income	Wage&Salary	7.8%	478	27.8%
	Business	23.9%	103	6.0%
	Working Age			
	Pensions	52.0%	302	17.6%
	Age Pension	21.8%	346	20.1%
	JobSeeker	90.3%	243	14.2%
	Other Welfare	61.7%	95	5.6%
	Other Income	12.8%	150	8.7%
Income Quintile	1	44.5%	1226	71.4%
	2	21.0%	390	22.7%
	3	3.9%	71	4.1%
	4	1.4%	26	1.5%
	5	0.2%	4	0.3%
Wealth Quintile	1	43.1%	923	53.8%
	2	13.9%	260	15.1%
	3	9.3%	181	10.5%
	4	8.8%	185	10.8%
	5	7.3%	170	9.9%
Age	15 to 24	35.3%	114	6.6%
	25 to 34	14.6%	225	13.1%
	35 to 44	13.9%	273	15.9%
	45 to 54	17.0%	320	18.7%
	55 to 64	17.5%	309	18.0%
	65 to 74	18.8%	278	16.2%
	75+	14.0%	199	11.6%
Household Type	Couple, Children	8.2%	210	12.2%
	Couple Only	10.4%	297	17.3%
	Lone Person	22.9%	584	34.0%
	Other Household	22.0%	377	21.9%
	Single Parent	35.5%	251	14.6%
Tenure	Own Outright	8.4%	259	15.1%
	Purchaser	8.4%	314	18.3%
	Renter	33.9%	1133	66.0%
	Other	6.6%	13	0.7%
All	Total	16.6%	1718	16.6%

The overall household poverty rate is 16.6 per cent of Australian households. This rate varies significantly by different household types. For main source of income, wage and salary households are the most common household types and have the highest number of households in poverty, even though they have the lowest poverty rate of just 7.8 per cent. Working age pensions (52 per cent poverty rate) and

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JobSeeker allowance (90.3 per cent poverty rate) are by far the most likely household types to be in poverty and in combination (545,000) dominate poverty in Australia.

Poverty is significantly higher amongst low income and low wealth households. Income is ranked by disposable income without any adjustment for housing costs – unlike the poverty measure used. The bottom income quintile poverty rate is 44.5 per cent while that for wealth is 43.1 per cent. Not surprisingly, poverty is very low for middle and high income households⁶. Poverty persists, albeit at relatively low rates for middle and high wealth households. Around 20 per cent of households in poverty are in the top 40 per cent of the wealth distribution. Some of these households are likely to have a considerable share of their wealth tied up in owner occupier housing or superannuation. Both of which may not be liquid and therefore easily accessed when needed.

Table 1 indicates that poverty is not strongly related to age. The rate is higher for households headed by persons 15 to 24 years (35.3 per cent in poverty). However, they only make up 6.6 per cent of those in poverty as few households are headed by persons aged 15 to 24 years. Households headed by persons aged between 45 and 74 years have moderately higher poverty rates than those headed by persons aged 25 to 44 years or 75 years plus.

Single parents have the highest poverty rates (35.5 per cent) amongst the different family types. Lone persons are next highest with a poverty rate of 22.9 per cent. Lone persons are the most numerous in poverty also at 584,000 or 34 per cent of all poverty. Couples with children have the lowest poverty rate at 8.2 per cent.

Poverty is dominated by renters with 1.1 million households in poverty compared to just 573,000 who either own outright or are purchasing a home. Renter poverty rate is 33.9 per cent compared to outright owners and those purchasing a home at 8.4 per cent.

Poverty rates are an imperfect measure of disadvantage and only cover one element – income and housing costs. However, the household types that the analysis suggests are doing it the hardest are also those same groups that typically come up in other studies that use other metrics such as financial stress (Phillips 2021). These groups include working age welfare recipients, low-income and wealth households, single parents, lone persons and renters.

The result is not unexpected but does not imply that the other household types do not contain persons or households who aren't in poverty or who aren't struggling with disadvantage. The analysis provides insights that should help direct policy change to where it is most needed or most likely to make the

⁶ It is possible for high income households (which are defined by disposable income not adjusted for housing costs) to be defined as being in poverty where their housing costs are very significant.

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greatest difference. Of those groups estimated to have the highest poverty rates, the most acute poverty is amongst recipients of working age pensions (such as Disability Support Pension, Parenting Payment (Single) and Carer Payment), JobSeeker recipients, single parents and renters.

The next part of this paper outlines a series of policy proposals that attempt to lower these poverty rates. The proposals are, by design, relatively modest and are not revolutionary in that they are more a tweak than an overhaul of existing policy.

We model three potential policy changes which we call 'Low', 'Modest' and 'High' with an increasing cost and therefore greater funding requirement as we progress from low to high. The modelling uses PolicyMod to ensure the policy options are costed in such a way that over the forward estimates (2022-23 to 2025-26) they are budget neutral. The model operates at the household level and provides detailed distributional results which shows how the policy changes affect different household types.

Lowering poverty in Australia, where poverty is measured as a relative concept, can be achieved through raising incomes of low-income persons. This can be achieved indirectly through improving the economic opportunities and outcomes of lower income persons or through more direct measures such as increasing cash welfare payments. Some may view increasing welfare payments as being counter-productive if such payments act as a significant disincentive to paid employment. However, the evidence isn't compelling that modest changes to welfare payments lead to this outcome.

In this paper we focus on increasing cash welfare payments as a means to lifting low-income persons and households out of poverty – or at least lowering their poverty gap. We do not attempt to estimate second round impacts of policy change.

'Modest' and 'High' policies include changes to the tax treatment of superannuation. The current system taxes most superannuation contributions and earnings at a flat 15 per cent rate. There is a rebate for low-income earners, very high earners pay a 30 per cent rate (or potentially a 15 per cent discount on their marginal rate) and most people who are retired and over 60 years of age pay no tax on their earnings on super balances within the \$1.7 million and \$3.4 million limit for singles and couples respectively.⁷

The paper models an alternative taxation system whereby the amount paid on tax is paid at an individual's top marginal tax rate with a substantial discount. Such a system provides a progressive tax system rather than the current flat rate system. Under the proposed system for the 'Modest' policy change actual superannuation tax paid for most taxpayers would either be similar or less than their

⁷ Retirees who do not choose an income stream at retirement and keep their superannuation in a lump sum continue to pay 15 per cent tax on their superannuation earnings.

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current rate. For example, if your combined superannuation income and taxable income was currently just under the \$120,000 tax threshold your superannuation tax rate would drop from 15 per cent to 34.5 per cent (including Medicare) minus 20 per cent (i.e. 14.5 per cent). If your current top marginal tax rate was 21 per cent the proposed rate would be 1 per cent. Where your current marginal rate was 47 per cent (above \$180,000 per year) your superannuation tax rate would increase from 15 per cent to 27 per cent.

The 'Low' policy option is considered a minimal increase in payments that increases JobSeeker payments by \$150 per fortnight. This increases the current (expected for December 2022) fortnightly maximum payment from around \$640 per fortnight to \$790 per fortnight. Commonwealth Rent Assistance (CRA) is increased by 50 per cent or around \$70 per fortnight. This increase is funded through a reduction in the current rate of discount applied to the capital gains tax from 50 per cent to 37.5 per cent. This policy is solely designed to provide some moderate relief to JobSeeker recipients and low-income renters. Table 1 showed that JobSeeker recipients had the highest rates of poverty at over 90 per cent. The increase in CRA will help a broad range of welfare recipients, many of whom rent.

The 'Modest' policy change makes a more significant increase to JobSeeker with an additional \$200 per fortnight. Parenting Payments are increased to align with the JobSeeker rate for recipients with dependents and Disability Support Pension and Carer payments are also increased by \$200 per fortnight. To fund this increase in payments we model the following taxation changes:

- 1) lower the capital gains tax discount from 50 per cent to 37.5 per cent;
- 2) align personal income tax thresholds with wages growth since 2018 replacing stage 1,2 and3 tax cuts of the Government's 10-year plan;
- 3) alter superannuation taxation to an individual's personal top marginal tax rate minus 20 percentage points rather than a largely 15 per cent on both contributions and earnings. The tax free status for retiree superannuation income over the age of 60 is removed.

The 'High' policy option provides the largest increase to welfare payments. This option provides what could be viewed as an upper limit of what may be possible, given political constraints. This shows what might reasonably be possible within the existing welfare framework in terms of poverty reduction. JobSeeker would be increased by \$436 per fortnight and Parenting Payment would be increased in line with JobSeeker. Disability Support Pension and Carer payments would be increased by \$200 per fortnight and Family Tax Benefit (Part A) increased by 20 per cent. CRA would also be increased by 50 per cent. To fund such welfare increases we take the same tax increases in 'Modest' but reduce the discount on superannuation taxation from 20 per cent to 15 per cent.

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To lower poverty we use our 'optimal policy modelling' (OPM) methodology. This method allocates any additional funding to welfare payments in such a way that poverty (or some other objective) is minimised. This paper's approach is to minimise both poverty (poverty gap rather than rate) and also financial stress. We take the results of the OPM for the poverty gap and financial stress and average those results. The methodology employed for both the poverty gap and financial stress are described in detail Appendix A.

The 'Modest' and 'High' policy options involve some important changes to the taxation of superannuation. The current superannuation taxation approach is heavily concessional relative to the treatment of personal income tax. Generally, tax is applied at 15 per cent on contributions and earnings and there is no tax applied to withdrawals upon retirement. Income received after retirement on superannuation balances is also tax free (with a few exceptions for very high balances).

The logic of concessional taxation is to both provide an incentive to contribute to superannuation, and as compensation since usually people are not able to access their superannuation until retirement. One could argue that the incentive is for most people not necessary since the superannuation guarantee (SG) compels people to contribute to superannuation and by 2025 that contribution will be 12 per cent of employee earnings.

Recent changes to superannuation have limited the ability of individuals to hoard very large amounts of cash in superannuation accounts and benefit from the concessional tax treatment. The intent of superannuation is to provide funds for a reasonable income through retirement, not to be an avenue for tax minimisation for very large amounts of money.

In spite of recent improvements (annual contribution limits and balance limits in the retirement phase) there are strong arguments that superannuation is more concessional than it needs to be, particularly for high income and high wealth households who would still enjoy considerable financial wealth into retirement with more modest concessions. The goal of lightening the concessionality of superannuation in this paper is to develop a system that doesn't disadvantage low and middle income and wealth families, enabling them to use superannuation in the future to improve their living standards. It should also be that any additional revenue raised will only impact those who are expected to retire with substantial superannuation balances. Any increase in tax to those persons should be modest and still provide the necessary incentives to ensure superannuation remains a reasonable investment for higher income and wealth families.

The proposals offered in this paper are to replace the 15 per cent flat tax with a 20 per cent (or 15 per cent for 'High' policy) discount to the individual's top marginal tax rate (including Medicare). We model

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these changes using PolicyMod which is based on detailed unit record data for actual people and households relating to income and wealth (and many other economic and demographic characteristics). The model calculates the annual impact on each person and therefore household in the sample since we have their taxable income, superannuation balance and contributions and age. Some assumptions are required around future returns which we conservatively place at 4 per cent per annum.

Using the current policy we estimate that relative to the personal income tax system the superannuation system saves individuals nearly \$40 billion per year as of 2022. This is roughly equivalent to the Treasury estimates of tax concessions for superannuation. The current split is roughly equal between contributions and earnings tax savings. The concessions are heavily distributed towards the top 10 and top 20 per cent of the income distribution. By applying the proposed alternative policies we compare these tax savings (or tax concessions) and find that the 'Modest' tax saving is around \$4 billion per year and the 'High' tax saving is around \$12 billion per year. These amounts represent significant increases in annual revenue to the Commonwealth but remain highly concessional relative to the personal income tax system.

To better understand the impact on households and their expected retirement balances we have developed a dynamic microsimulation modelling capability within PolicyMod.

PolicyMod is a static model so in its standard form it is not suitable for such projections. We have taken income transition probabilities from the ABS Census 2016 longitudinal file to model the likely trajectory of income for all adults in the 2022 basefile of PolicyMod (around 27,000 adults). The transition probabilities are based on the income transitions between 2011 and 2016 by age, sex and labour force status for all persons in the 5 per cent sample contained in the 2016 longitudinal census file. The benefit of using real life transitions for income is that through the life course it's unlikely that people will take the average trajectory. A more realistic life course is that people will potentially take time out of the labour force for events such as childbirth, transition to unemployment or shift from full- to part-time work or become either permanently or temporarily disabled. The ABS transitions offer a realistic income trajectory that accounts for the ups and downs of one's employment and earnings history.

Like all models it is not possible to simulate all possible life events; nor do we attempt to simulate behavioural change. However, modelling realistic income transitions through the lifecourse offers a more realistic perspective on potential earnings and superannuation balances at retirement and, in particular, the distribution of expected superannuation balances at retirement. Given the substantial spread of superannuation balances it is important to understand how policy change impacts not just the average balance but also those towards the top and bottom of the distribution. Those with low balances are the people most vulnerable and potentially those who could benefit the most from the proposed policy.

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Those with high balances are the people who are the least vulnerable and most able to manage modest changes to their expected superannuation balance.

With such income transition modelling we are able to model the incomes of individuals every five years (which we interpolate to single years) between 2022 and 2062 using the implied income growth rate from the Census income transitions matrix. By applying their expected contributions and earnings and tax paid each year we can predict their superannuation balance at 65 years, when we assume they retire. We do this for the base model using current policies and compare to those same predicted future incomes but apply the new tax rates in our 'Modest' and 'High' policies.

We simplify the modelling by assuming all figures for each year are 'real' or with inflation removed. We also assume real income/wages growth of 1.5 per cent as assumed in the Inter-Generational Report and a real return for superannuation investments over the coming 50 years to 2072 of 4 per cent per annum. This means that people who are 60 in 2022 will retire in the model in 2027. Those who are 25 today will have a full 40 years of income (and increasing real incomes) to increase their current (likely very low) superannuation balance. With all modelling done in real terms we believe we still get a useful comparison between generations and a useful perspective of the impact of the policy change on individual superannuation balances at retirement.

Younger generations get the benefit of a 'mature' superannuation system for all 50 years. Older generations have fewer years in the mature system but in recent years have benefited from real returns well above 4 per cent. Some have also benefited from earlier superannuation policy with fewer restrictions on contributions and earnings – which have enabled some very substantial balances that are unlikely to be repeated in the future. As such, it is important that our results consider the distribution of balances, not just averages which can be heavily skewed. The future will continue to see such a skew but perhaps to a lesser extent.

Results

The 'Low' policy increases the JobSeeker maximum rate by \$150 per fortnight (singles only) and also increases CRA by 50 per cent. This policy change increases government expenditure by around \$3.9 billion per year from 2022. Tax revenue received from lowering the capital gains tax discount from 50 per cent to 37.5 per cent balances the increased spending over the forward estimates (2022-2025). The 'Low' policy represents a 3 per cent increase in current welfare cash payments.

The 'Modest' policy is a little more generous to JobSeeker recipients, lifting singles payments by \$200 per fortnight. The Disability Support Pension and Carer Payment are also lifted by \$200 per fortnight recognising their higher cost of living relative to age pensioners (see Phillips 2021). Those on Parenting

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Payment will have the same payment as those on JobSeeker with dependants – which is only a modest increase on the current payment. The cost of the ‘Modest’ policy change is around \$10 billion per year from 2022. Replacing the stage 1, 2 and 3 tax cuts with wage inflated thresholds beyond 2018, lower super and capital gains concessions balance the costs with higher taxation revenues over the forward estimates. The ‘Modest’ policy represents an 8 per cent increase in current welfare cash payments.

The ‘High’ policy scenario makes further increases to welfare payments, including a very significant increase to JobSeeker by \$436 per fortnight along with increases to Parenting Payment (to line up with the relevant JobSeeker rate), Disability Support Pension and Carer Payment up by \$200 per fortnight, Family Tax Benefit Part A up by 20 per cent and CRA up by 50 per cent. All these rate increases are based on a \$20 billion per year increase to welfare payments as optimised by PolicyMod’s optimal policy algorithm to minimise the average of after-housing poverty and severe financial stress. To offset these costs the same tax increases as per ‘Modest’ are modelled but a reduced superannuation tax discount of 15 per cent is applied. The ‘High’ policy represents a 16 per cent increase in the current welfare cash payments.

Figure 1 Tax and Transfer Aggregate household impact of proposed policies

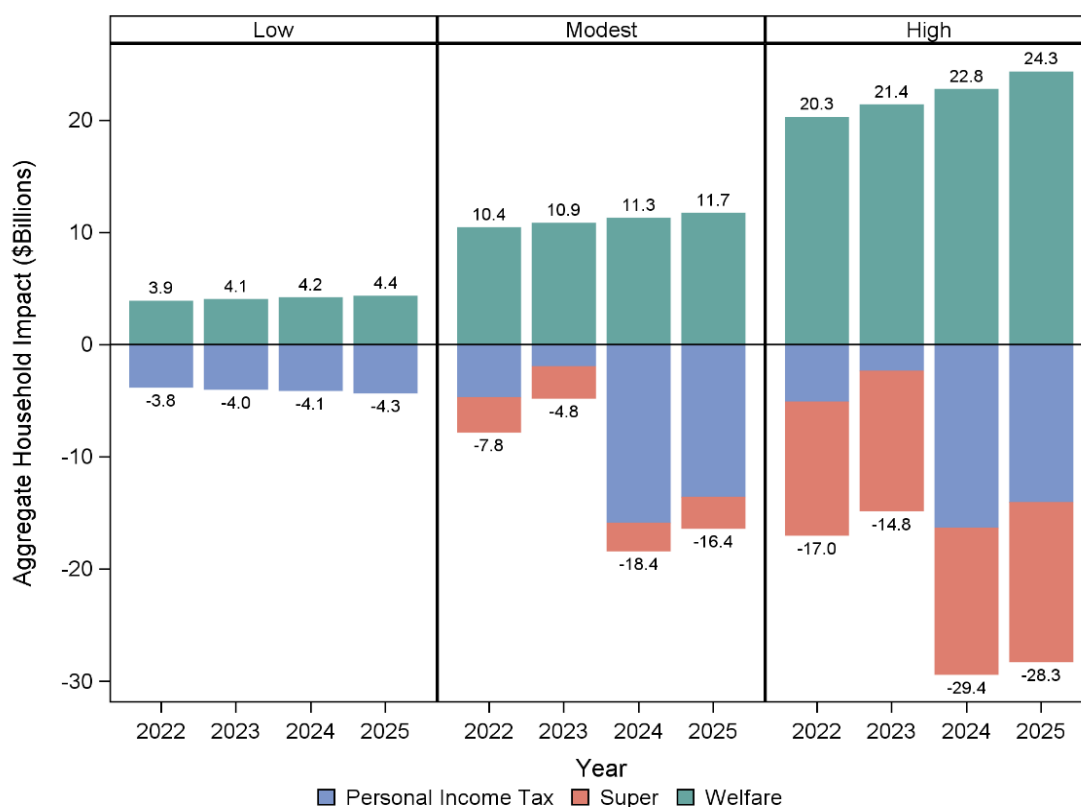


Figure 1 provides an overview of the major aggregates that result from the three proposed policy changes. The increases in personal income tax and tax on superannuation show up as a negative impact

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on household finances while the increase in welfare is a positive. In net terms, the policies approximately net out to a zero impact on household finances (and therefore government finances) over the forward estimates (2022-23 to 2025-26).

While the overall impact on finances may be roughly zero the results differ markedly when the distributional impacts are considered. With Australia's tightly means tested welfare system, most of the increase in welfare will be a transfer to lower income households. Since most personal income tax is paid by high income households and most superannuation tax is paid by high income/wealth households, the additional (although modest) tax burden would be felt by high income and wealth households. In net terms the suggested policy reforms should be highly progressive and result in significant reductions in both inequality and perhaps more so, poverty.

Poverty Results

The current all-households estimate for after-housing poverty rate for 2022 (December) for Australia is 16.6 per cent of households (1.72 million households). The 'Low' policy proposal reduces the share of households in poverty to 15.5 per cent (1.6 million). The 'Modest' policy reduces poverty further to 13.9 per cent (1.4 million). The 'High' policy lowers poverty to 12 per cent or 1.25 million households.

Arguably a better measure of poverty is the 'after-housing' poverty gap rather than the head count measure. The gap considers the depth of poverty and estimates the average distance households are from the poverty line – where a household not in poverty has a distance of 0. Using this measure the average poverty gap lowers from a current policy world estimate of \$2,882 per year to \$2,627 for 'Low' (9 per cent reduction), \$2,483 for 'Modest' (15.4 per cent reduction) and \$2,198 for 'High' (23.7 per cent reduction).

Figure 2 shows increasingly large reductions in poverty for those households whose main source of income are welfare payments. Both JobSeeker and 'WA Pensions' (Disability Support Pension, Parenting Payment (Single) and Carer Payment) poverty rates are more than halved. In the case of JobSeeker, poverty rates drop from over 90 per cent to 43.4 per cent for the 'High' policy change. Since most of the proposed spending increases relate to welfare payments and most of the tax increases are applied to households not in or near the poverty line, it is not surprising that wage and salary, age pension and business households are not strongly impacted by the change with regard to poverty.

Figure 3 shows that the proposed policy changes would lower poverty rates most substantially for lone persons and single parents – the family types with the highest rates of poverty currently. The rate of poverty for single parents would reduce from a current rate of 35.5 per cent to 17.6 per cent for the 'High' policy – roughly halving poverty. For lone persons the poverty rate would drop from 22.9 per cent

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to 14.5 per cent. The reductions for couples and couples with children are less substantial but these cohorts have a much lower base level of poverty. The less ambitious policies also result in lower poverty across all family types. However, the reductions are less substantial and generally in proportion to the additional expenditure.

Figure 2 Poverty Rates by Main Source of Income

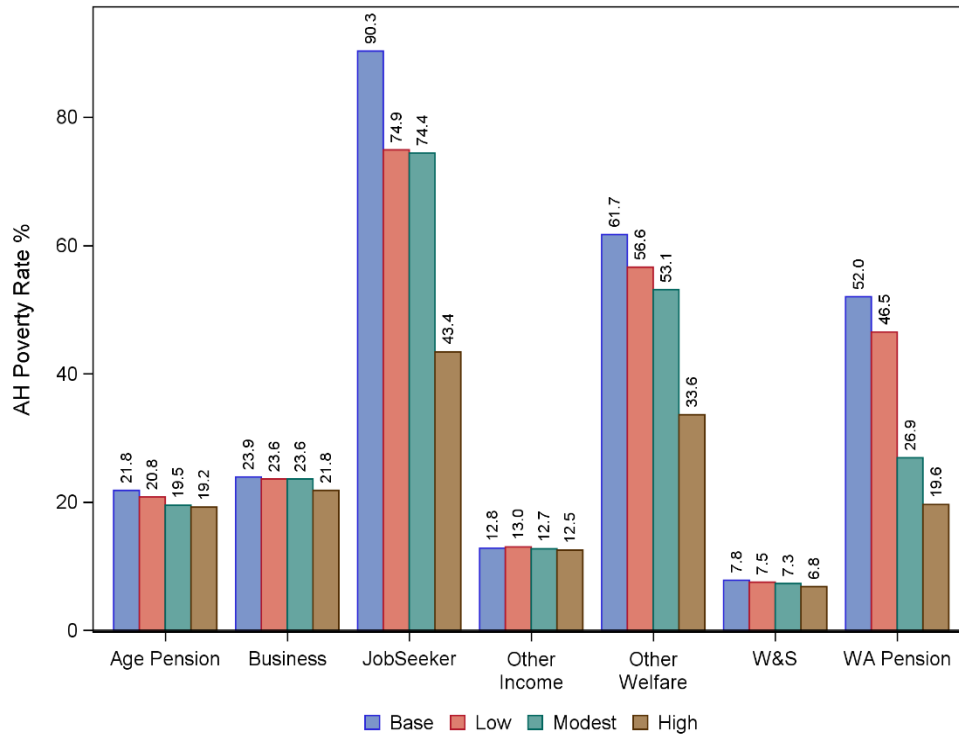
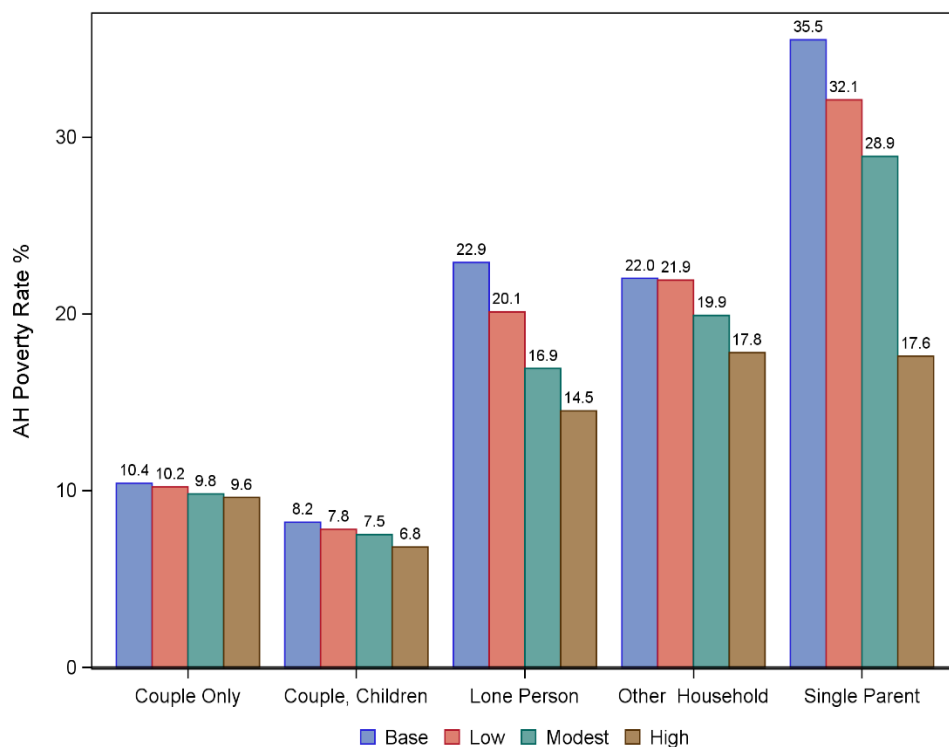


Figure 3 Poverty Rates by Family Type



Financial Impact of Policy Change

The previous section focussed on the reduction in poverty and therefore the impact of policy change on lower income households. This section considers the financial impact with respect to disposable income. This section shows the financial impact across the full distribution of incomes by considering that impact by income and wealth levels and by age of the head of the household. We also split the result between 2022 and 2024 financial years. The main reason for this is that the policy change for ‘Modest’ and ‘High’ involves the removal of the stage three tax cuts in 2024. This change materially alters the results on the tax side of the equation. Otherwise, the policy changes tend to be linear through time.

Figure 4 shows the average impact by the main source of income for households. JobSeeker households are dramatically impacted by the policy change, with a net positive dollar impact of between 15.5 and 45 per cent of their current household disposable income. Recipients of working age pensions are also positively impacted, with gains of between 1.7 and 21.1 per cent. Most other groups are largely unaffected, with losses of between 1 and 2 per cent for wages and salary and business households. These losses, while small relative to the much larger incomes for these households, are enough to fund the gains for the much lower income households, which is typically the case for JobSeeker and working age payment recipients. The results are similar for 2022 and 2024 except that the losses for those households that are worse off (wage and salary and business) are larger losses. While not shown here, the losses diminish beyond 2024 as our indexed tax thresholds increase to the point where tax revenue

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from personal income tax is lower than the current base model which includes the Government’s 10-year tax plan. The current tax plan does include substantial tax cuts in 2024 but these cuts are eroded through time as there is no indexation of thresholds under current legislation.

Figure 4 Dollar Impact relative to disposable income – Main Source of Income

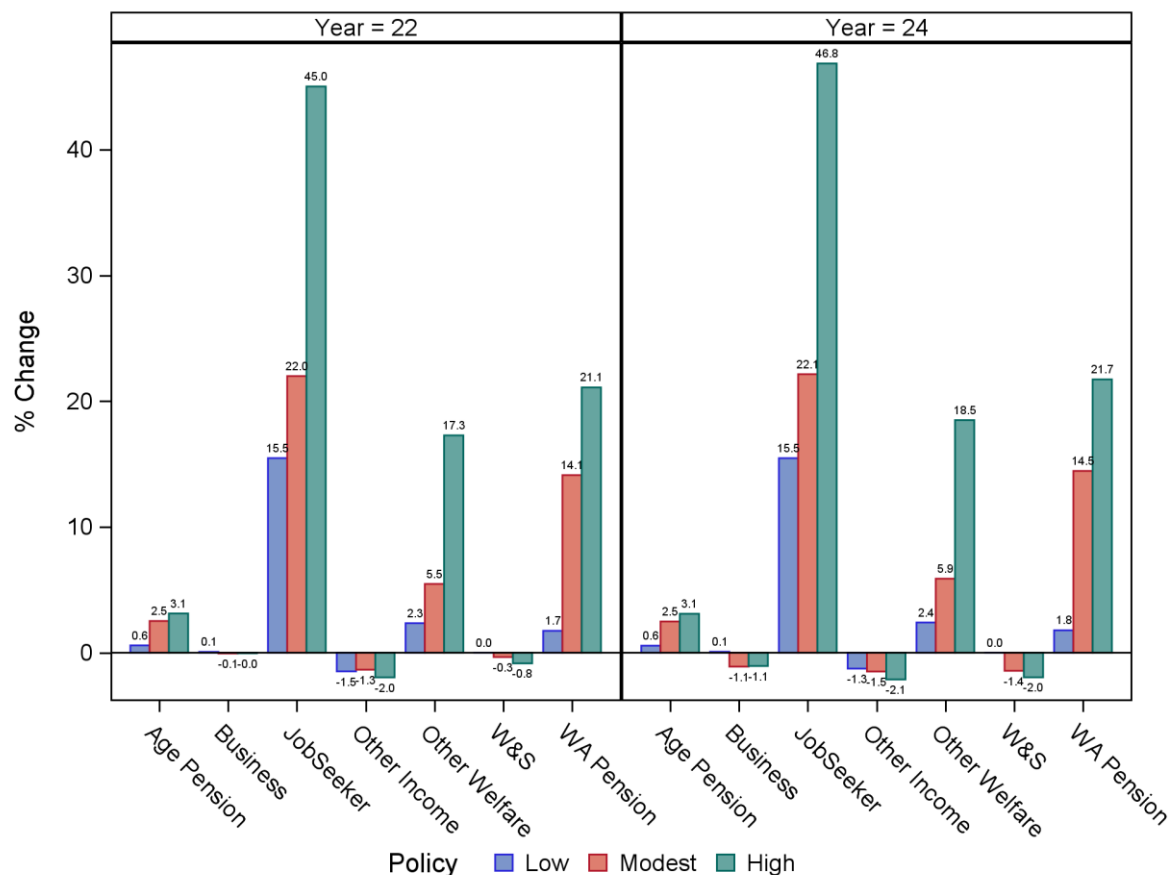


Figure 5 considers the relative financial impact by income quintile. The results show that for both 2022 and 2024 financial years the policy changes are very progressive, with significant gains for the bottom 2 income quintiles and modest losses for the top two quintiles. The ‘High’ policy yields gains of 9.4 and 7.8 per cent respectively in 2022 with slightly larger gains in 2024. The losses for the top two quintiles are not as dramatic, with losses of 0.9 and 2.3 per cent respectively. It should be noted that for the ‘Low’ policy change a surprising result is that the bottom quintile is, on average, not impacted. This is likely driven by a small number of low-income households with significant capitals gains offsetting the gains of those households benefiting from the increase to JobSeeker and CRA.

Figure 5 Dollar Impact relative to disposable income – Income Quintile

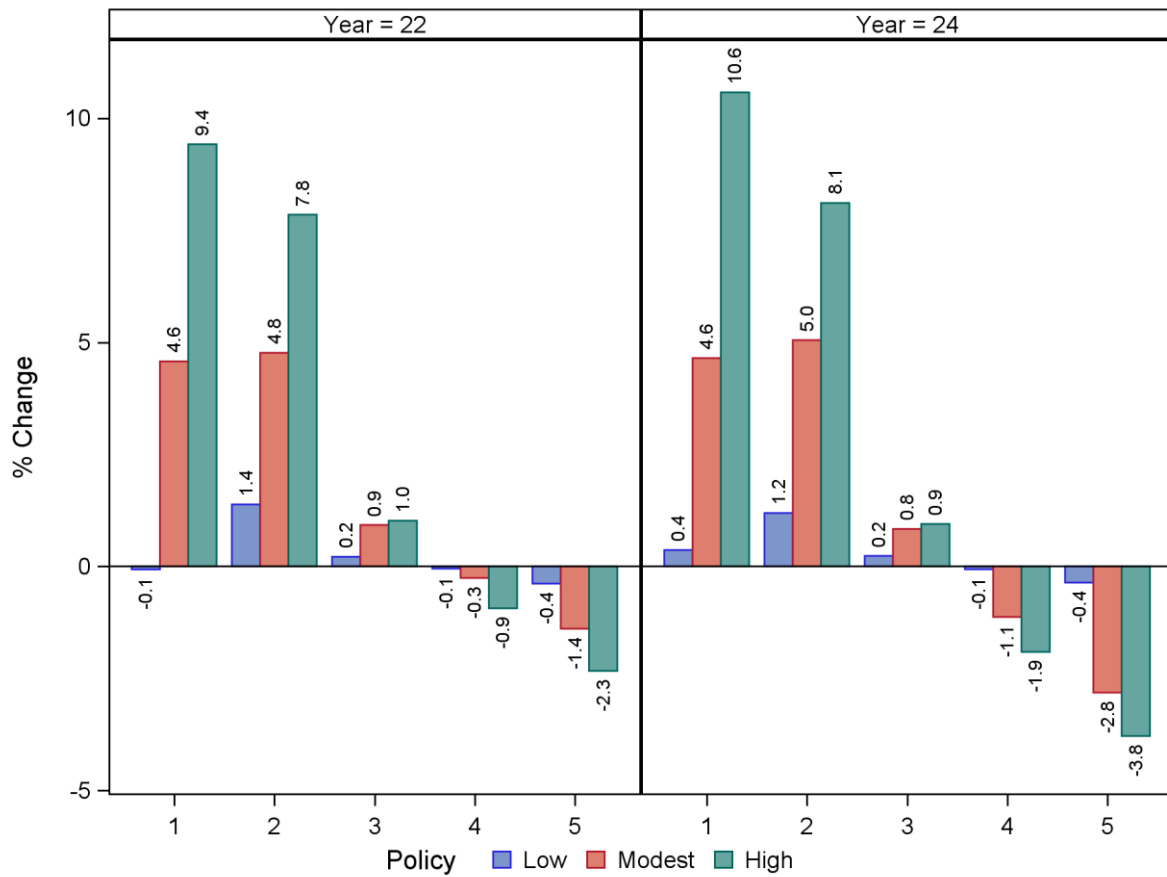


Figure 6 shows the results by wealth quintile. The impact of high wealth but low-income households disappears here and both quintile 1 and quintile 2 benefit across all policy options. Again, the results show a very progressive outcome with low wealth household benefiting and high wealth households worse off. Both Figure 5 and 6 show limited average impacts for households of middle income and wealth.

Figure 6 Dollar Impact relative to disposable income – Wealth Quintile

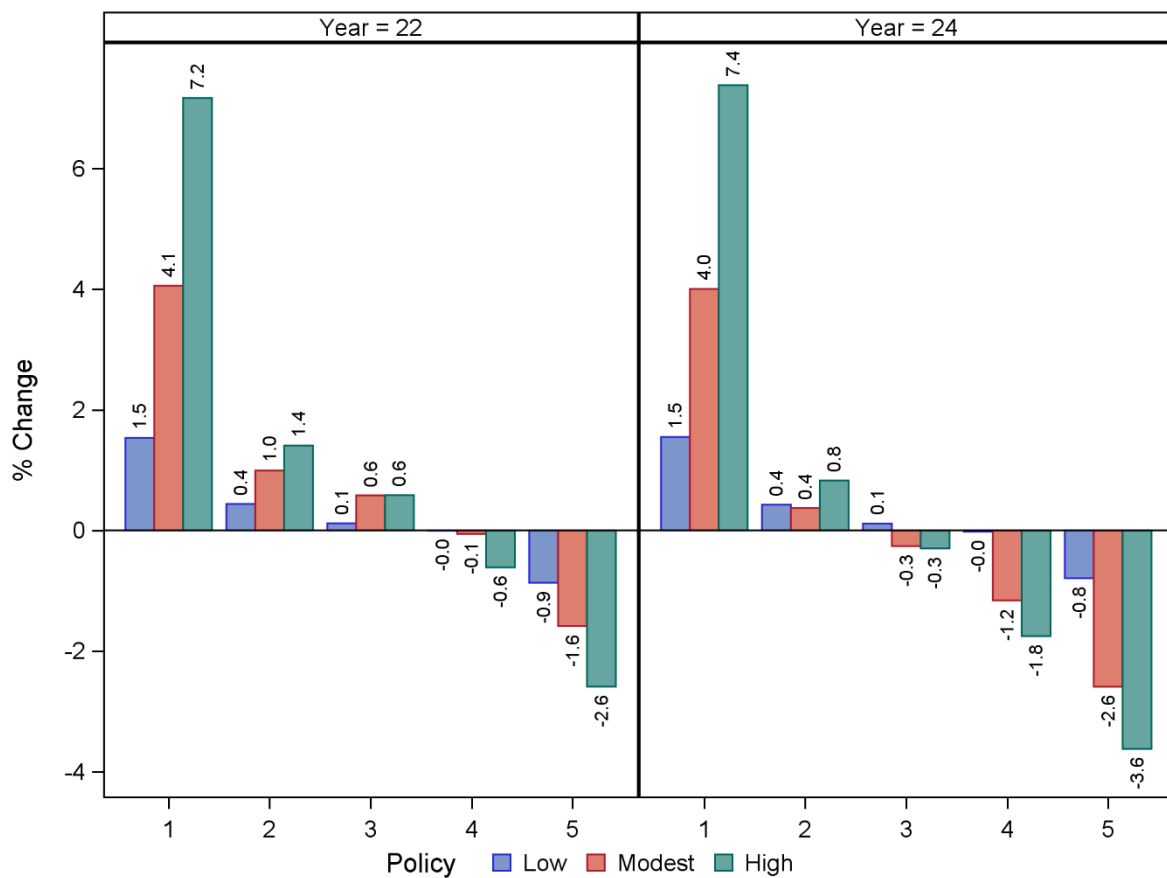
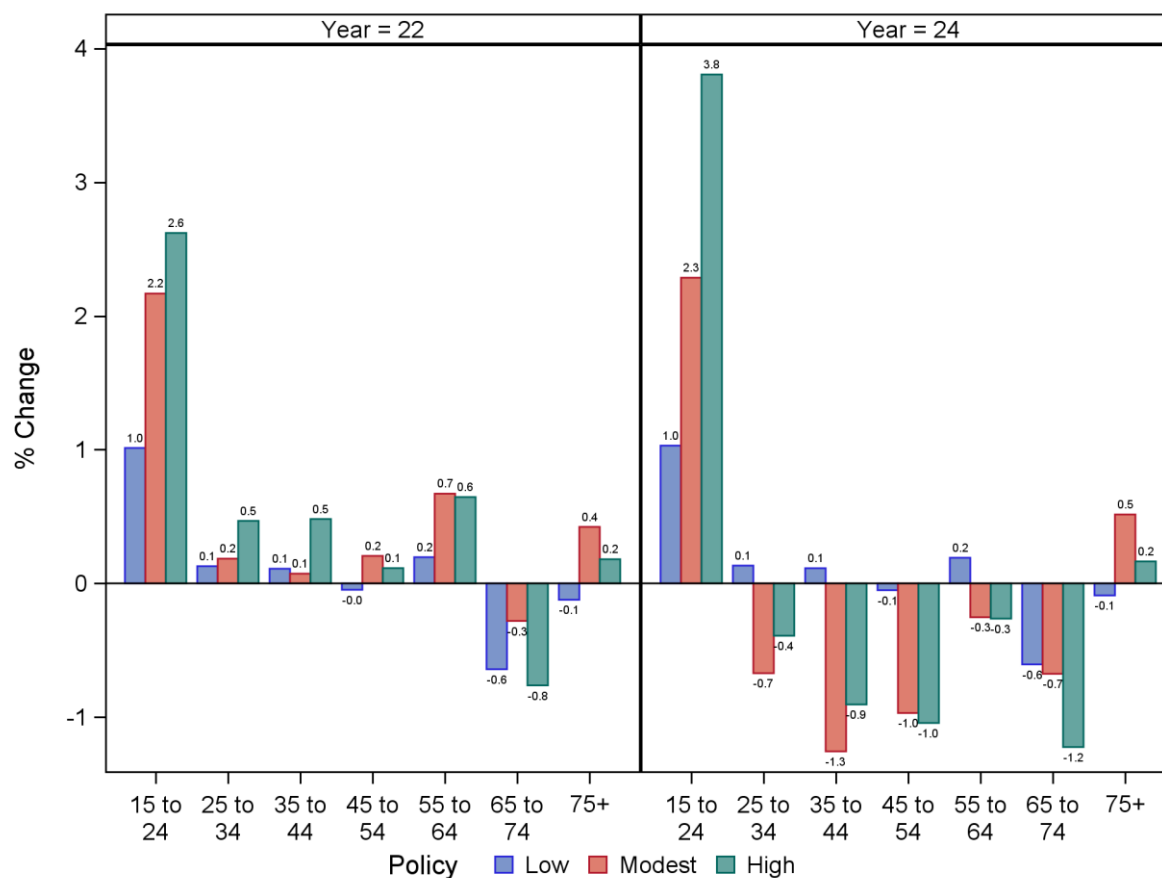


Figure 7 considers the average relative financial impact by age of the head of the household. The relevance of age is partly related to the potential impact of the superannuation changes. The chart shows that the policy changes strongly benefit younger households (15 to 24 years) but middle-aged households are modestly worse off on average. The oldest age category (75 years and over) is better off on average for the 'Modest' and 'High' policy scenarios and unaffected by the 'Low' policy on average.

Figure 7 Dollar Impact relative to disposable income – Age of Head of Household



Gains and Losses Analysis

This next section moves beyond averages and attempts to better understand the actual size of gains or losses. Averages may mask potentially important changes to households. For example, where one low-income household was better off by \$1000 and another low-income household was worse off by \$1000 the average would suggest that on average low-income households are not impacted.

Figure 8 breaks the gains and losses down to seven categories. Three categories for gains, three for losses and a ‘no change’ category. Again, the results are split between 2022 and 2024 financial years due to potential differences arising from our more ambitious policies, not including the stage 3 tax cuts in 2024.

The ‘Low’ policy clearly has no impact on most households, with around 90 per cent unaffected. Around 12 per cent of low-income households are better off and around 4 per cent of high-income households are worse off. There is little difference between 2022 and 2024 as the policy changes are similar between years.

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The 'Modest' policy has a broader impact across the income distribution. The policy incorporates an indexed tax bracket system rather than including the stage 3 tax cuts in 2024. The policy also has a larger increase to various payments and impacts many persons through a change to superannuation taxation that benefits most households but does disadvantage some higher wealth and likely higher income households. Indeed, the modest policy proposal results show that low-income households tend to either have no impact or are significantly better off (more than \$3000 per year). The high-income households tend to be impacted moderately to heavily in the 2022 year and, on average, more substantially towards the \$3000 plus category in 2024 with the stage 3 tax cuts removed.

The 'High' policy distribution of results is similar to that of 'Modest' but with a higher share of households gaining by more than \$3000 per year and losing by more than \$3000 per year. Again, the distribution is heavily weighted towards high income households losing and low-income households gaining. The main policy difference with 'High' relative to 'Modest' is the higher capture of superannuation tax revenue through less generous tax concessions for superannuation. The 'High' policy also uses that additional revenue to make more substantial increases to welfare payments with most areas of welfare increased (with the exception of the age pension).

Figure 8 Gains and Losses by low and high income (Quintile 1 vs Quintile 5)

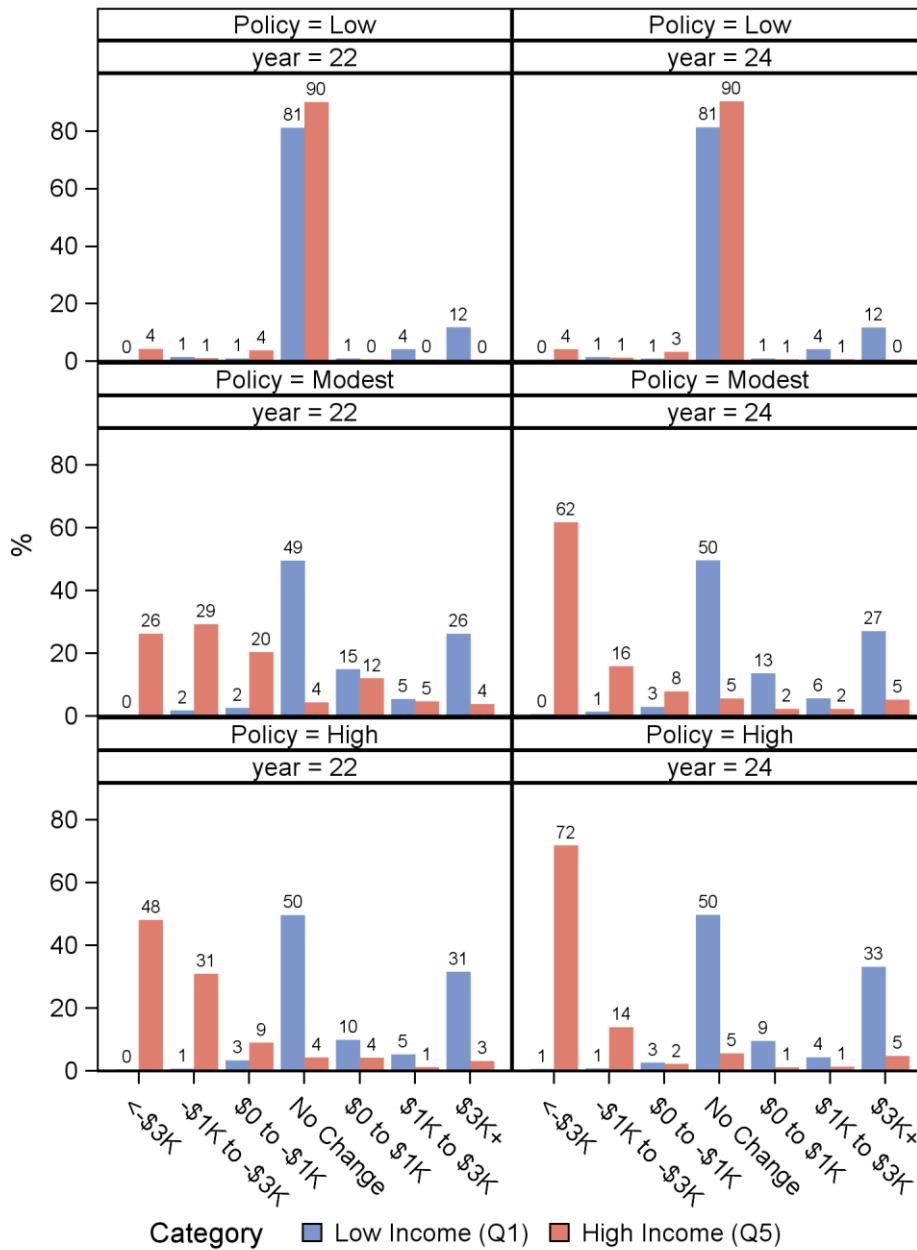


Figure 9 shows the same information as Figure 8 except the households are split by wealth quintiles rather than income quintiles. Wealth is of particular interest for the policy options presented in this paper as a major element of the proposed reform is aimed at superannuation, specifically what we would expect to be higher income and higher wealth households who are in a better position to wear some loss of income (and ultimately wealth) than those persons and households with less income and wealth.

Figure 9 shows that for the 'Low' policy scenario, 90 per cent of high income households are not impacted. This should not be a surprise since most households are not claiming capital gains in any one year and this is the sole source of funding of the 'Low' policy expenditure measures. The increase in

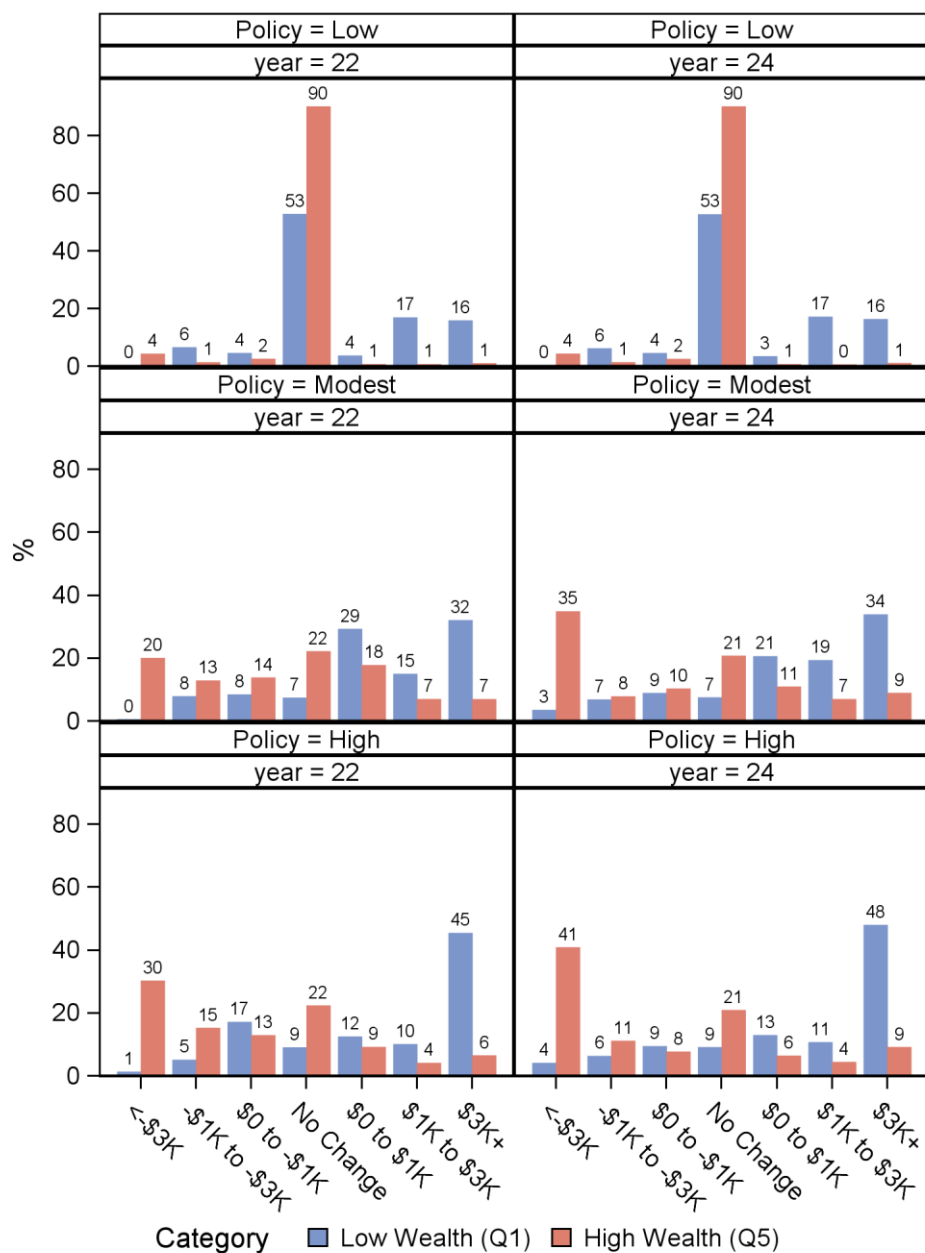
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JobSeeker and CRA clearly assists the low-income households, with very few households losing but a significant share (37 per cent) gaining, and 33 per cent gaining by at least \$1000 per year. Around 4 per cent of higher wealth households (quintile 5) lose more than \$3000 per year (through higher capital gains tax) compared to 0 per cent of low wealth households.

In the 'Modest' policy, 32 per cent and 34 per cent of households in the bottom quintile of wealth are ahead in 2022 and 2024 respectively by \$3000 per year or more. Virtually no low wealth households lose by \$3000 a year or more. For high wealth households the situation is reversed, with 20 per cent in 2022 and 35 per cent in 2024 losing by more than \$3000 per year. Around 20 to 30 per cent of both high and low wealth households are not impacted by the 'Modest' policy change.

In the 'High' policy, gains and losses are again magnified somewhat. 45 per cent and 48 per cent of low-income households are ahead by more than \$3000 per year in 2022 and 2024 respectively. 30 per cent and 41 per cent of high wealth households are behind by \$3000 per year in those same years. Around 20 per cent of high-income households are not impacted by the 'High' policy but the share of 'no change' households is reduced for low-income households as the welfare changes are more broad-based for the 'High' policy scenario. Again, virtually no low wealth households are impacted by more than \$3000 per year.

Figure 9 Gains and Losses by low and high wealth (Quintile 1 vs Quintile 5)



A general caveat for all the results above is that these results relate to a ‘static’ simulation. By this we mean that we take a snapshot of time and there are no behavioural responses. If considered through time you would find that the results may be less dramatic from year to year or decade to decade as households transition between income and wealth levels. Behavioural changes are difficult to estimate and are more likely to impact the results over the longer term as people respond to the altered set of incentives that the suggested policies entail. The superannuation changes will have dynamic impacts into the future. For example, higher superannuation tax will mean that some (mostly high income and wealth) retirees in the future will have smaller superannuation balances (all other things being equal). Of course ‘other things’ are rarely equal and investment behaviour will likely change as a result of such policy

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change. For example, individuals or couples may decide to invest less into super and more into housing or the stock market. Alternatively, they may invest more into superannuation to ensure their nest egg at retirement is not impacted. Attempting to figure out such behavioural change is beyond the scope of this research and in any case is subject to considerable debate and uncertainty.

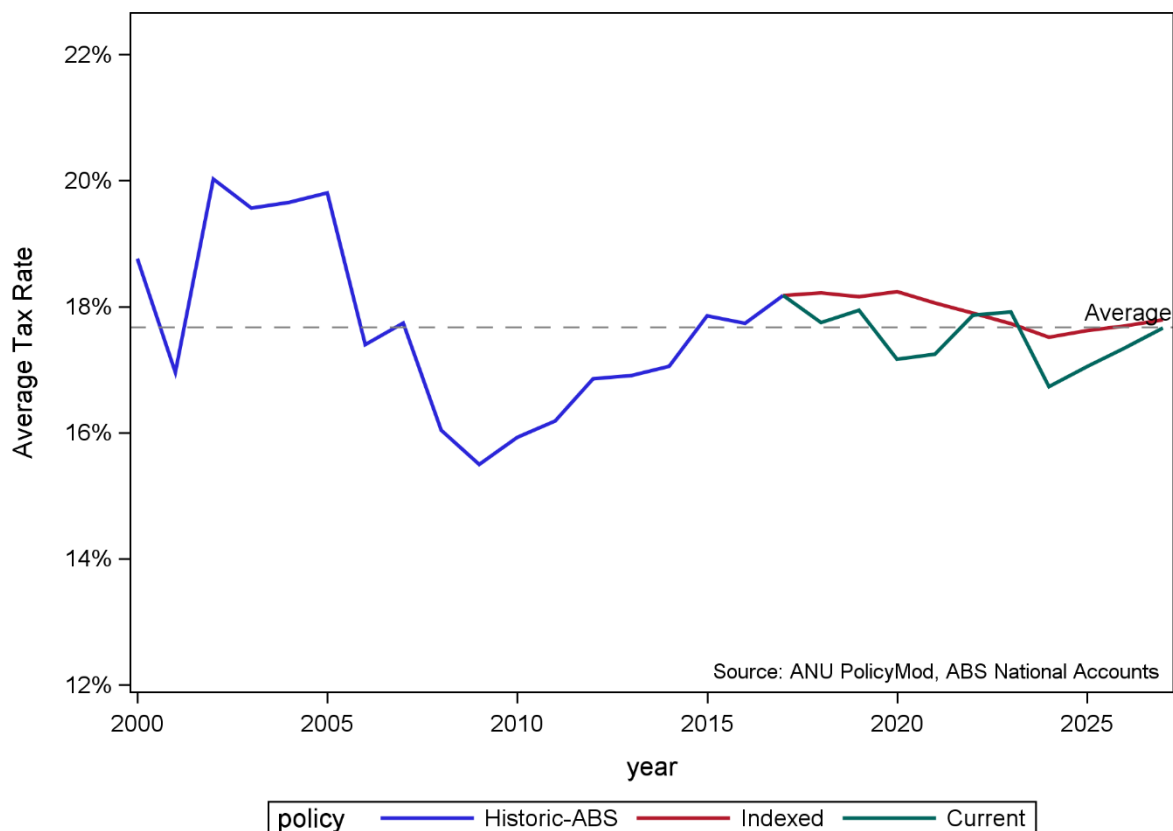
Overall, we find that the three policy options are very progressive with respect to income and wealth levels. The payment increases were designed to lower poverty (reduce the poverty gap) and financial stress so it should come as no surprise that low-income households (which are by definition more likely to be in poverty and are far more likely to be in financial stress (Phillips 2021)) benefit the most. The burden of paying for a more generous welfare system falls upon the tax system and by design we have attempted to shift that burden onto areas that are lightly taxed (superannuation and capital gains) and also re-designed the personal income tax system in such a way that is arguably fairer, with thresholds linked to wages rather than ad-hoc changes that, in the case of the Government's stage 3 tax cuts, clearly benefit higher income and higher wealth households.

The three policy options vary in respect to magnitude of change. The 'Low' option represents around \$4 billion per year in spending while the 'Modest' and 'High' options increase that expenditure by \$10 billion and \$20 billion. The higher cost options clearly have more significant impact than lower cost options.

Implications for trends in personal income taxation

A significant element of the 'Modest' and 'High' policy options is a personal income tax system that indexes income thresholds with income growth rather than *ad-hoc* changes as has typically been reflected in Australia's approach in recent decades. Over the forward estimates period (2022-23 to 2025-26), indexing tax thresholds does increase revenue as we do not include the Government's stage 1, 2 and 3 tax cuts. Figure 10 shows the aggregate picture on the impact of such policy change.

Figure 10 Average Household Tax Rate – Current, Past and Projected



It is worth considering the history of tax reform via Figure 10. Changes in the economy mean that change in the average tax rate may not always directly relate to policy changes to the personal income tax system. However, it is not surprising to see large reductions in average tax rates in the second half of the 2000s decade where governments lowered tax rates and increased tax thresholds significantly. From 2010, in the absence of policy change up until 2017, there were significant increases in the rate, almost entirely due to bracket creep or fiscal drag, with wages growth pushing individuals into higher income tax brackets or, at least, higher shares of income in higher tax brackets.

The Government’s 10-year tax plan (stage 1,2 and 3) contributed to reductions in average personal income tax beyond 2017. It should be noted that these reductions are much more modest than those of the previous decade. With a little bracket creep beyond the end of stage 3 tax cuts (2024) we project that average tax rates will return to roughly the 20-year average. By indexing tax thresholds with wage inflation and not including the tax cuts of the 10-year tax plan, we end up at a similar point by 2027 but in the intervening years some additional tax is received – helping to fund the increases in spending outlined earlier in the report.

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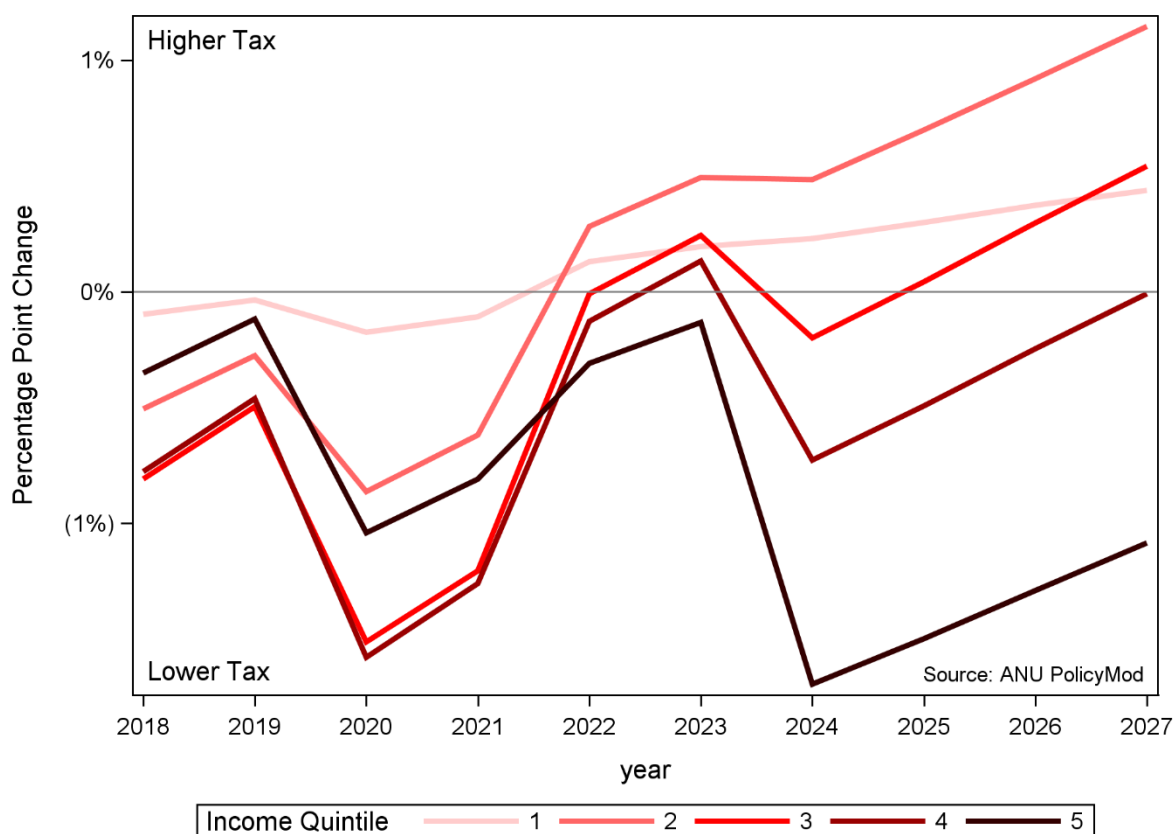
While the Government's tax plan does make some significant tax cuts (even beyond bracket creep) perhaps what is of more interest is the distribution of those tax cuts. Previous work suggests that the gains mostly accrue to high income individuals and households.

Figure 11 shows the results of a simulation of the current ten 10-year tax plan against that of an indexed tax system which factors in wages growth. The estimates show that on average higher income households receive a more significant reduction in tax when compared to an indexed tax system (2017 tax thresholds indexed to wages growth).

The highest income groups (quintile 5) receive the greatest benefit by 2024 with a near 2 percentage point reduction in their average tax rate. By 2027 they will receive a reduction in tax of a little more than 1 percentage point.

The lowest two income quintiles will, from 2022, pay a higher rate of tax and of particular concern quintile 2 (between the 20th and 40th percentile of the income distribution) will pay more than 1 percentage point higher. The low- and middle-income tax offset in 2020 combined with other changes to thresholds and rates does mean that all households are better off (on average) for 2020 and 2021 under the 10-year tax plan. Figure 10 shows quite clearly that the 10-year tax plan from 2022 onwards benefits higher income households, at the expense of lower income households.

Figure 11 Income Quintile Average Tax Rates of Ten-year Tax Plan – Indexed proposal



Long term implications for superannuation balances

The ‘Modest’ and ‘High’ policy scenarios propose important changes to superannuation taxation, moving from a (mostly) flat tax rate of 15% to a progressive tax rate. The progressive rate would be based on an individual’s top marginal tax rate (including medicare levy) minus a discount of either 15 percentage points (‘High’ policy) or 20 percentage points (‘Modest’ policy). Both proposals increase the taxation of superannuation (at least through the forward estimates period 2022-23 to 2025-26) and therefore reduce the size of tax concessions through superannuation.

The current superannuation tax concessions for superannuation are estimated to be just over \$40 billion per year over the forward estimates (Treasury 2022) which matches up closely with that estimated in this paper at around \$40 billion. Superannuation is, in theory, designed to provide for a relatively comfortable retirement living standard for most people.

The proposed policies will have implications for retirees with most retirees impacted through changes to their retirement superannuation balances and income streams. The majority of lower income and wealth

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persons will benefit from higher expected superannuation balances at retirement. However, some higher income and wealth people will have modestly lower balances.

In this section we estimate the impact on retirement balances from the policy changes. Ideally, it should be the case that only persons with superannuation balances well in excess of what are reasonable levels will be adversely impacted and those with low to modest balances have larger superannuation balances at retirement⁸.

To investigate the impact of policy change we use a dynamic version of the ANU PolicyMod model and considered the distribution of expected retirement balances for three age groups: 15-34; 35-49; and 50 to 64, for both males and females. The impact for persons aged over 65 years is mostly covered in the static analysis shown in the earlier analysis in this paper. The impact was felt through lower income for higher income retirees since there is the potential for some retirees to pay some more income tax than is currently the case.

Those aged 15 to 34 years in 2022 would (where they retire at 65) have benefited from a superannuation guarantee of at least 9 per cent for all of their working career and the majority of their career at the 12 per cent rate (legislated to begin in 2025). Those aged between 35 and 49 years in 2022 will have also spent the vast majority of their working career with a super guarantee of at least 9 per cent and potentially a significant amount of time with a rate greater than 9 per cent. Those aged 50 and over may have a significant period of their working career without superannuation and/or at a rate between 3 and 9 per cent – below the current rate of 10 per cent and the 12 per cent rate for 2025 and beyond. The older groups have benefited from very strong returns in recent years and may have benefited from less restrictions on superannuation contributions in years gone by.

We estimate the distribution of superannuation balances for each of these groups for the current policy and compare with the 'Modest' and 'High' policies with regard to their proposed changes to superannuation tax rules. We consider the 10th, 25th, 50th (median), 75th, and 90th percentiles of superannuation balances at retirement. The 10th percentile relates to the superannuation balance 10 per cent along the distribution of all balances, implying if you ranked the incomes of 100 people from lowest to highest the 10th percentile would be the person with the tenth lowest income. The 50th percentile is the median or the half way point of the distribution. This logic continues up to the 90th percentile which is the start of the top 10 per cent of superannuation balances.

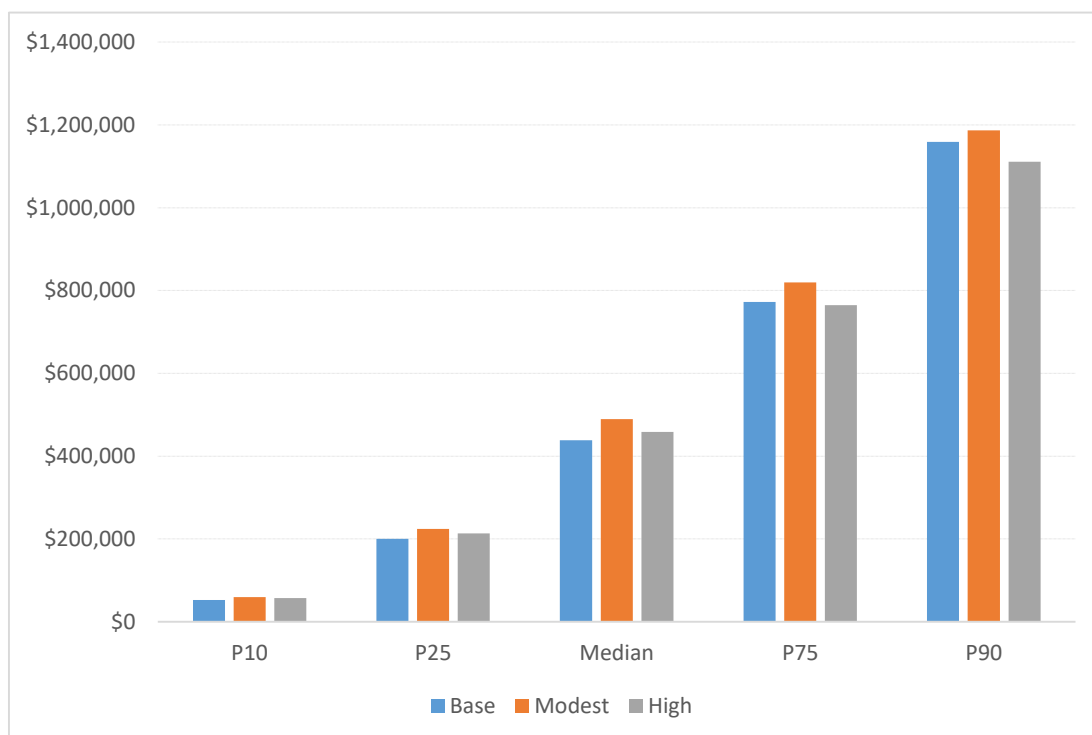
⁸ There is no agreed level that superannuation balances should be prior to retirement, however Association of Superannuation Funds of Australia (ASFA) recommends \$545,000 for a single and \$640,000 for a couple for a 'comfortable' lifestyle. This estimate assumes funds are drawdown by death and used in combination with the age pension. <https://www.superannuation.asn.au/resources/retirement-standard>

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Figure 12 shows the distributional results for projected retirement balances for the current and proposed superannuation policy. We find that the proposed policies do improve superannuation balances for low- and middle-income individuals. The only decreases in balances are for those people expected to be at the higher end of the superannuation balance distribution. Groups we would expect to have the greater financial challenges and rely heavily on the age pension are all expected to improve their balances.

Figure 12 shows the distribution of retirement balances (at age 65 years) for all persons in Australia currently aged between 15 and 64. Retirement balances for the bottom 10 percent point (P10) of balances right up to the 90th percentile (P90) are all higher than the base or current policy for the 'Modest' policy. For the 'High' policy, where a 15 per cent discount is applied to top marginal rates rather than the current policy of mostly a flat 15 per cent, the balances are higher for P10 up to P50 (median). The 'High' policy lowers expected balances for P75 and P90. The most significant reduction is for the P90 (top 10 per cent of expected superannuation balances) where there is expected to be a 4.3 per cent drop from \$1.16 million to \$1.11 million – both remain a comfortable balance for retirement for an individual and significantly above the asset thresholds where the age pension cuts out for singles of \$816,000 for a renter or \$600,000 for a homeowner.

Figure 12 Expected Retirement Balance distribution at age 65 years for all persons aged 15 to 64 years in 2022 by policy, PolicyMod Dynamic



The biggest gains from the suggested policy change are for the bottom 10 percentage point of superannuation balances at retirement under the 'Modest' policy with a 13.8 per cent increase, raising

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balances from \$52,400 to \$59,700. The 'High' policy increases balances of the bottom 10 percent to \$57,500 or 9.6 per cent. The 'Modest' policy increases typical or median (P50) balances by 11.8 per cent from \$438,000 to \$490,000. The 'High' policy leaves expected balances 4.6 per cent higher at \$458,000⁹.

Figure 12 combines all persons aged 15 to 64 years. Superannuation is expected to continue 'maturing' over the next half century mostly thanks to the super guarantee increasing to 12 per cent by 2025, having been as low 3 per cent when first introduced in the early 1990s. There are also important differences between men and women, with women tending to have lower superannuation balances, particularly older women today who have typically worked less than men and typically being paid less for the work they have done. The gap between males and females is expected to shrink over time as female participation in the workforce increases relative to male rates in recent decades.

Noting such dynamics at play with superannuation, Figure 13 provides details for the expected retirement balances of age and sex for the different policy options. Age is split into three categories; 15 to 34 (early career), 35-49 (mid-career) and 50 to 64 (late-career). The expected superannuation balances at retirement of the early career group benefit from the majority of their accumulation years being at the 12 per cent superannuation guarantee rate. They also benefit from our assumed 1.5 per cent real growth in wages and therefore contributions. The mid-career group's expected superannuation balances will also benefit from many years of high contributions and higher real incomes – but on average 17.5 fewer years. The late-career group may enjoy a small number of years at the higher contribution rate and some real wage growth but 15 fewer years than mid-career persons and 32.5 fewer years than early-career persons.

⁹ Percent changes and dollar figures presented may not exactly match due to rounding of dollar figures.

Figure 13 Age by Sex expected superannuation balances at retirement distribution, PolicyMod Dynamic

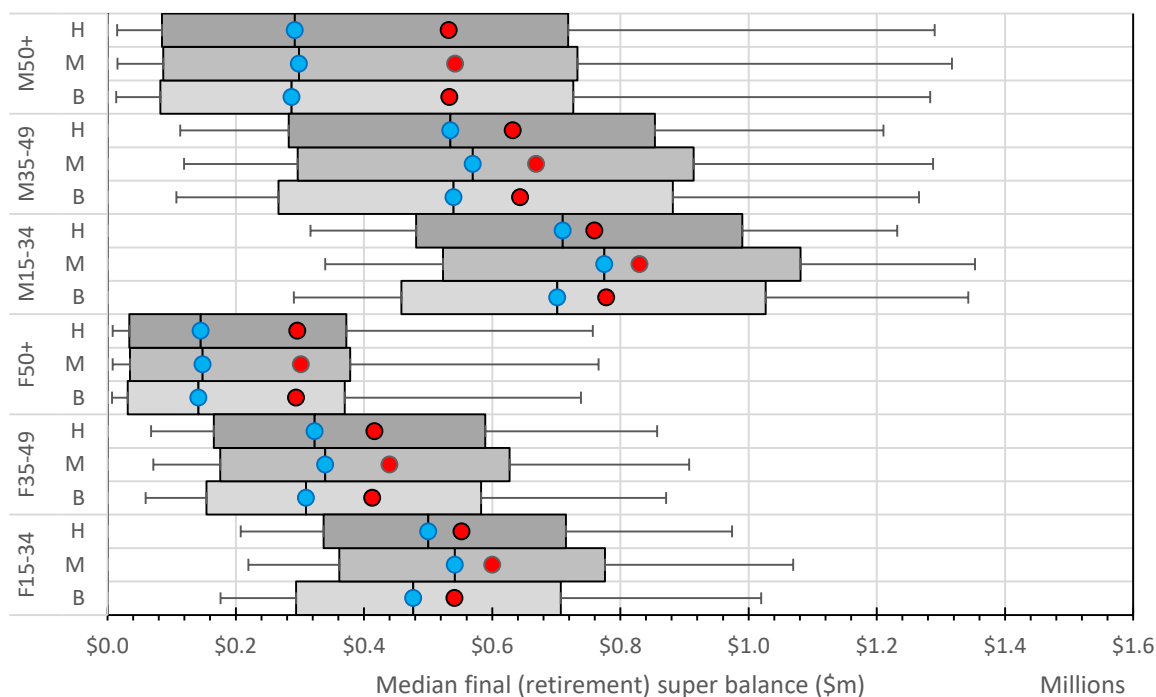


Figure 13 shows the dramatic difference that more years in a ‘mature’ superannuation system and higher incomes will do for expected superannuation balances. Clearly the early career persons are expected to retire with significantly more than late career persons, particularly for the lower balance percentiles. For example, the bottom 25th percentile of superannuation balances at retirement for males is expected to be \$459,000 for those currently aged 15-34 whereas those aged 50 to 64 are expected to only reach \$82,600. For women the 25th percentile figures are \$294,000 and \$31,500 – indicating an expected continuation of superannuation gaps into the future by gender but overall there is substantial gains in retirement balances for both males and females.

The Figure shows some helpful gains for those early career persons with lower wealth levels for both men and women from the proposed policy change. Gains of around 23 percent for women and 14 percent for men for the 25th percentile of superannuation balances. A 25 year old women today at the 25th percentile would benefit from a gain in their expected balances from the current policy from \$294,000 to \$362,000. At the other end of the scale, a male who is 25 today at the 90th percentile of retirement balances would drop from an expected balance of \$1.35 million to \$1.23 million under the ‘High’ policy scenario (8.9 per cent reduction).

The model’s expectation around median superannuation balances shows some improvements resulting from the proposed changes to superannuation in this paper. For women, the youngest age group would be expected to increase their retirement balances from \$477,000 to \$542,000 for the ‘Modest’ policy

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change and to \$500,000 for the 'High' change. For young men the median balance currently is expected to increase from \$702,000 to \$775,000 for the 'Modest' policy and \$710,000 for the 'High' policy. For middle and older aged persons the expected median superannuation balances are smaller than those projected for the youngest cohort but generally remain favourable or close to unchanged for both policies relative to the current policy.

The modelling shows that women are expected to retire with significantly lower superannuation balances. Females in younger cohorts are expected to make considerable gains in the future with higher expected retirement balances. These gains are due to greater workforce participation over working age years, higher superannuation guarantee rates and higher real wages in the future. In spite of these significant gains, females are expected to still lag well behind males for each age cohort. Women are expected to remain roughly 20 years, a generation, behind their male counterparts. This implies that women who are 45 today and who retire in 20 years will be in a similar position to males retiring today. They will be around 43 per cent behind their 45 year old male counterparts. A more progressive approach to superannuation taxation, such as those proposed in this paper, would improve this situation modestly. Under the 'High' and 'Modest' proposals the gap shrinks to around 40 per cent.

An important implication of the modelling is that the superannuation balances are mostly not adversely impacted by the policy change but where there are some modest reductions those impacts are for very high superannuation balances. These superannuation balances may be a little smaller but such change is unlikely to impact longer term age pension liabilities for the Government. Those persons most likely to receive the Age Pension will typically retire with superannuation balances that will either be similar or higher than under the current policy.

In summary, the detailed age by sex analysis of expected superannuation retirement shows that the main beneficiaries of policy change would be younger people with low to moderate expected superannuation balances. The gains are large enough to make a difference for the lower wealth persons, being up to around 25 per cent larger superannuation balances at retirement. The largest negative impacts would be those persons who are already expected to have very significant superannuation balances (well over a million dollars and in the top 10 per cent of the superannuation distribution). The impacts are relatively minor with the largest negative impact being an 8 per cent reduction in retirement balance for the top 10 per cent of young males - \$1.23 million down from \$1.34 million.

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Appendix A: Optimal Policy Modelling

The current Australian social security system provides a social safety net for Australians who require financial assistance to help meet their basic costs of living because of age, disability, unemployment, caring responsibilities or other factors that limit their ability to be in paid employment. The system also provides targeted assistance to families with dependent children, based on income level. The system helps to alleviate poverty and redistributes income from higher-income to lower-income households.

Over time, the system has evolved into a complex system of payments that vary in eligibility requirements (e.g. disability, age, whether a person is studying, whether a person has dependent children, the age of dependent children), payment rates, thresholds for private income above which the rate of government benefit is reduced, rate of withdrawal of payment as private income increases, indexing of payments to increases in the cost of living, and treatment of the incomes of other people in the income unit.

The complexity of the social security system makes it challenging for policy makers to assess what changes should be made to the system to achieve policy objectives, and the implications of changes to the system. This can be posed as a question: How could the system be optimised to better achieve a policy goal, such as poverty reduction, subject to a budget constraint or some other constraint?

In this paper, we use a recently developed modelling tool, Optimal Policy Modelling, for optimising the social security system to achieve a minimum of financial stress and poverty (Phillips 2018). We do this by using a microsimulation approach that involves altering welfare payments (or other parameters) to minimise financial stress and poverty, subject to a range of constraints, such as the overall social security budget or relationships between payment rates. The simulations are undertaken using the ANU Centre for Social Research & Methods microsimulation model of the Australian tax and transfer system (PolicyMod).

Financial stress is a more direct way of measuring financial difficulties than poverty measures. Relative poverty measures don't guarantee financial stress. For some households, a given relative poverty line may be more than enough to live on while for others it may not be enough, depending on factors such as the cost of living, for example housing costs. In developing the ANU algorithm this paper uses a measure of deep stress. This measure is the count of financial stressors faced by a household squared. The squaring of the response variable ensures more weight is placed on households in

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deeper stress. Stress questions included in our study are limited to the 8 that are most likely to represent deeper forms of stress, excluding the management of household income question (Phillips 2021). We simply felt that our interest was the deeper forms of stress which are likely to be most relevant to households in receipt of social security payments.

A methodological challenge in using financial stress rather than poverty measures for optimal policy modelling is determining the link between changes in social security payments (income) and financial stress. There is a direct link between changes to social security payments and poverty rates and the poverty gap – more money equals a lower poverty gap for those under the poverty line. The link is not so straightforward for financial stress.

To determine the link between income and financial stress Phillips (2021) develops an econometric model that links income and financial stress. In simple terms, a regression model that links the square of the number of financial stress responses from each household to a range of economic, demographic and household level variables. One of these variables is income and by varying income the impact of changing social security payments for a given household on their financial stress level is estimated. The key interest is to understand the impact of changes in income on financial stress. We include a range of interaction terms to better understand this relationship for groups that are most likely to be impacted by changes in social security payments.

In principle, the problem of determining the rates of payment that result in the lowest financial stress could be solved by running the microsimulation model repeatedly while varying the payment rates. However, this approach is not practicable because the number of times the model would need to be run with different combination of payment rates is enormous, and this would take an infeasible amount of time. To overcome this problem, we have developed a new methodology that drastically reduces the number of simulations required. The OPM methodology involves first creating a dataset that relates different combinations of the rate of social security payments to total financial stress in Australia using a microsimulation model of the Australian tax and transfer system.

In the version of the work reported in this paper, 2500 combinations of the rate of social security payments are simulated. The relationship between payment rate and financial stress is then estimated using a linear regression model that provides parameter values for an equation that describes how changes in payment rates affect financial stress. This equation can be used to

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determine 'optimal' payment rates, subject to constraints such as a budget constraint or changes from current payment levels.

Establishing statistical relationships between payment levels and the policy objective variable (financial stress) significantly reduces the size of the problem by allowing use of standard mathematical programming techniques to optimise payment rates to achieve a particular objective. This approach means that it is not necessary to simulate a vast number of combinations of payment rates.

The modelling in this paper optimises outcomes with respect to financial stress and poverty and then averages the two results. The social security system also has important impacts on work incentives (e.g. effective marginal tax rates), income inequality and horizontal equity.

An expected benefit of modelling social security payments based on financial stress rather than just that based on poverty lines is that there are likely to be significant differences between both household types and individual households with respect to their relative needs. A relative poverty line-based approach as previously modelled (Phillips 2018) assumes for example that a retiree couple's poverty line is the same as that of a couple where both are working. It is well known that employed persons under the age of retirement are likely to have significantly higher living costs than persons who are retired. A retiree for example may also have significant wealth from which to draw upon. A relative poverty measure may not fully account for the likely impact of such wealth. A financial stress measure in this sense arguably is a better basis for determining relative needs of different household types. A financial stress measure is also perhaps a better measure of the financial needs of some categories of social security payments such as those on disability support or the Carer Payment. Both of these categories of payment may well have significantly higher costs due to their disability or carer requirements.