Financial Stress and Social Security Settings in Australia

ANU Centre for Social Research and Methods

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Abstract

The Australian social security system spends around $120 billion dollars in cash transfers to Australian households each year. This money provides a safety net for around 5 million Australian's most of whom have little or no other regular income source due to age, incapacitation, caring responsibilities or unemployment. Payments to these persons do vary substantially as do their financial requirements. This paper considers the latest trends in financial stress and poverty through recent decades but also through the COVID-19 period to better understand the emerging trends and the current state of financial stress and poverty for different types of social security recipients. It contains a particular focus on children and families. We find financial stress has declined through recent decades across the whole population. However, those receiving working age social security payments such as the disability support pension, Carer Payment, Parenting Payment and JobSeeker have been left behind. Their financial stress and poverty levels have worsened through Australia's long economic boom of the last 30 years. The current planned rate of income support will leave 789,000 children in Australia living in poverty (more than 1 in 6 children). Using the relationship between financial stress and income we estimate where additional funding for social security would best be spent and what impact such spending could have on financial stress and poverty in Australia. The report finds that increasing overall social security spending by up to 20 per cent yields strong benefits in terms of reducing poverty and financial stress when targeted towards working age payments with high rates of poverty and financial stress. These include JobSeeker Payment, Parenting Payment Single, Disability Support Pension and Carer Payment.

Acknowledgements

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Executive Summary

This paper considers the latest trends in financial stress and poverty through recent decades but also through the COVID-19 period to better understand the emerging trends and the current state of financial stress and poverty for different types of social security recipients. It contains a particular focus on children and families.

We find severe financial stress has declined through recent decades across the whole population. However, those receiving working age social security payments such as the disability support pension, Carer Payment, Parenting Payment and JobSeeker have been left behind. Their financial stress and poverty levels have worsened through Australia's long economic boom of the last 30 years.

In 2015, 37 per cent of households dependent upon allowances such as the JobSeeker Payment were living in severe financial stress compared to only 3 per cent of those earning wages and salaries.

Poverty for these families increased from 30 per cent to 66 per cent between 1993 and 2017. This compares to 7 per cent for households whose main source of income was wages or salary.

Similarly, the rate of poverty for children in allowance households increased from 25 to 66 per cent between 1993 and 2017.

Severe stress rates for single parents in 2015 were much higher than other family types, with 23 per cent or almost 1 in 4 reporting skipping meals, limiting heater use or relying on charities to get by.

Lower income families are nearly four times more likely to be in severe financial stress compared to middle income families in 2015.

Severe financial stress rates declined for renters over the period 1998 to 2015 but remain four times higher than severe stress rates for purchasers. Regional Australia tends to have moderately higher rates of severe financial stress when compared to capital city regions The current planned rate of income support will leave 789,000 Australian children living in poverty (more than 1 in 6 children).

The report finds that increasing overall social security spending by up to 20 per cent yields strong benefits in terms of reducing poverty and financial stress when targeted towards working age payments, including JobSeeker Payment, Parenting Payment Single, Disability Support Pension and Carer Payment.

A 10 per cent increase in the social security budget alone would lower poverty rates for households whose main source of income is JobSeeker from 88 per cent to 34 per cent and lower severe financial stress by 16 per cent. Such a budget increase would allow JobSeeker to increase to $996 per fortnight, compared to around $566 in December of 2019 (increased to

$620 in April 2021). Working age pensions such as Disability Support Payment, Carer Payment and Parenting Payments could all increase by 13 per cent.

1. Introduction

The current Australian social security system provides a social safety net for those who require financial assistance to help meet their basic costs of living because of age, disability, unemployment, caring responsibilities or other factors limiting 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 or financial stress, subject to a budget constraint or some other constraint?

In this paper we describe the results of modelling that attempts to model the link between financial stress and income levels and by doing so we estimate the 'optimal' way of spending additional money in the social security system to best lower financial stress and poverty rates for low income Australian households, particularly those with children. We include all the major payments in the Australian social security system including JobSeeker (similar to the old Newstart or unemployment payment), age pension, disability support payment, carer payment, parenting payment single, family payments, childcare subsidy and rent assistance.

To motivate our research, we provide estimates of financial stress, poverty and child poverty for different types of households. In particular, we consider households with different major sources of income and also different family types and income levels. The modelling also considers poverty through the COVID-19 period with estimates of poverty prior to, during and beyond the peak of COVID-19. For 2021 estimates we consider a simulation of poverty with and without the $50 per fortnight JobSeeker increase.

Our research is heavily reliant on the ABS' Household Expenditure Survey which since 1998 has asked households about 15 different types of financial stress and deprivation. The literature is not clear on the best way to summarise these measures. We focus on those measures that are the most severe forms of stress. We use a 'count' measure which counts the number of responses indicating stress in each household where the stress measure relates to any of the 9 financial stress measures. We also have selected what we believe to be the three most severe measures of financial stress and use a simple binary measure where a household has responded to any of those three stress questions.

The purpose of this paper is to identify the areas of the current social security system where financial stress and poverty, in particular child poverty, is greatest and to show where

additional funding is best spent. The approach taken attempts to account for some political realities. It is often considered difficult to take money away from people. Lowering cash payments to certain groups may be politically difficult but it is also challenging for those impacted since people are likely to have arranged their lives around payments being at a certain rate.

2. Trends in Poverty and Financial Stress

This section considers trends in financial stress and the poverty gap for different household types in Australia between 1993 and 2017.Estimates are developed using the ABS' Household Expenditure Survey from 1993 to 2015, with additional data from the ABS' Survey of Income and Housing 2017-18 used to estimate poverty rates for 2017. Financial stress rates are only available from 1998 to 2015 due to the ABS only asking respondents about financial stress since 1998[1]. There is particular interest in such trends as the JobSeeker payments have not been lifted in real terms since the early 1990s meaning living standards for those recipients are likely to have fallen relative to the rest of the community during that time.

To estimate the impact of policy change and to develop 'optimal policy' settings we develop several regression models that link financial stress (both count and a binary stress measure) to income levels. This model will be explained later in this section.

Financial stress declined in Australia between 1998 and 2015. During this period there has been considerable economic growth with real GDP per capita gains of around 28 per cent. Between 1993 and 2020 per capita GDP has grown by 53 per cent. With such strong economic growth it would be expected that households have experienced some reduction in overall financial stress. What is less clear is whether the gains of growth have been shared equally. It may be that certain groups in society have not enjoyed such strong increases in income and related to that reductions in financial stress. We know that certain social security payment groups have had no real increase in their payments through this period. We also know that certain groups such as those on JobSeeker, have had their mutual obligations increased to receive the payment. Other payment types such as the disability support pension have experienced tighter eligibility requirements.

Financial Stress in this report is defined in 3 separate ways. All are based on the ABS' 15 different questions relating to financial stress. We exclude the 6 measures related to 'missing out' experiences. Our view is that the financial stress measures are a better indicator of genuine disadvantage than the missing out questions. We use 8 of these measures (which are included in Appendix 1) to create three separate indicators of financial stress.

1) Count of financial stress;
2) Binary measure of severe financial stress;
3) Any financial stress.

The count measure is between 0 and 8 (we remove the management of household income question from the stress measures). The severe stress measure only includes whether a household has experienced any of the measures we consider the most severe forms of

financial stress (financial assistance sought from welfare/community organisations, unable to heat home due to financial reasons or went without a meal for financial reasons. Finally, 'any financial stress' indicates whether a household experienced any form of financial stress[2].

Our decision to not include the missing out forms of financial stress was based on the judgement that some of these measures were not indicative of the same level of deep financial stress as those measure included. There was also a concern that certain demographic groups may be more likely to respond 'don't want it' and hence this would lower the likelihood of responding to the question for financial reasons. For example, it may be that a very old person may be less likely to want to, or be physically able to, go out for dinner or go on a holiday. While there is a degree of subjectivity about this decision, we did not find that their inclusion in the count or financial stress binary variables greatly changed the results in this paper.

For poverty gaps we calculate the gap between a household's income and the poverty line.[3] We use the after-housing poverty gap based on an after-housing costs poverty line of around $385 per week. The poverty gap is a measure of the depth of poverty rather than a simple binary headcount of poverty. The depth measure is a superior metric to the headcount measure as it includes a level of severity and is much less influenced by small policy changes that place a person or household just above or below a poverty line for a given year.

The after-housing version of the poverty gap is based on disposable income subtracting housing costs. Following the recommendation of the ABS we don't include the bottom 2 per cent of the income distribution in our poverty measures (based on pre-COVID-19 income). Further to this, we don't include households with more than a million dollars in net wealth. Unless otherwise specified, poverty estimates are developed using 50 per cent of the median equivalised income as our poverty line. Equivalising income is based on the use of the 'modified-OECD' scale. We also include the headcount measures of poverty and after-housing poverty. Child poverty estimates use the same definitions as above except we only include the share of children under the age of 15 in households that are defined as in poverty. We also include poverty rates that are based on the Melbourne Institute Poverty Lines. The MI estimates are different for different family types and for different numbers of children within couple and single parent families. The MI estimates are based on the original work of the Henderson Poverty Inquiry. The Inquiry is based around work undertaken in the early 1970s and has been updated using per capita income estimates from the Australian Bureau of Statistics.

Table 1 shows financial stress and poverty rate results for Australian households. The financial stress measures clearly show a reduction in stress for each measure. The *count* measure is lower by around 31 per cent since 1998 and the rate of stress is lower for both *severe* and *any* stress. Poverty rate trends are less clear with the after-housing rate increasing modestly since 1993 but the other measure using the Melbourne Institute (MI) Henderson poverty line is lower since 1993. Child poverty has increased since 1993 and is consistently higher than the all-persons rate of poverty.

Table 1: Household Financial Stress and Person Number Poverty Trends

Year	Financial Stress Measures					Poverty Rates and Persons						Poverty Gap
	Count	Severe		Any		After-Housing		MI		Child		
		Rate	000's	Rate	000's	Rate	000's	Rate	000's	Rate	000's	$pw
1993						10.2%	1,765	13.3%	2,305	13.9%	530	$11.60
1998	0.64	6.2%	439	30.0%	2,139	11.3%	2,096	11.3%	2,086	15.5%	580	$9.88
2003	0.57	6.1%	474	26.7%	2,062	10.2%	1,989	8.2%	1,598	13.8%	537	$10.80
2009	0.50	5.7%	479	24.1%	2,021	12.8%	2,750	9.0%	1,924	18.7%	767	$17.50
2015	0.44	5.6%	498	22.2%	1,989	12.1%	2,802	10.6%	2,456	16.3%	710	$15.70
2017						12.7%	3,025	10.2%	2,444	17.5%	789	$18.50

ABS Household Expenditure Surveys, 1993-4 to 2015-16, Survey of Income and Housing 2017-18

Of interest beyond the broad aggregates is how have these trends vary by household type? Are there particular groups in society that are doing particularly well, or bad? The focus in this paper will mostly be on groups in serious financial stress and deep poverty so our preferred measures are either the 'count' or 'severe' measure of financial stress. For poverty we will use a range of measures but focus on child poverty and the overall poverty gap using the after-housing costs version where housing costs are deducted from disposable income.

It is worth noting that the following sections only provide summary statistics of financial stress and poverty for different household types. A higher or lower result for any particular category may be driven by other factors such as income or wealth differences. Conclusions can't directly be drawn to imply that it's the category itself that drives differences in results. For example, single parents would be expected to have higher rates of financial stress than couple parents. The driver may be that they have lower income levels rather than something particular to single parents. The regression modelling in the optimal policy modelling section attempts to overcome such issues by incorporating a wide range of covariates in explaining financial stress.

2.1 Main Source of Income

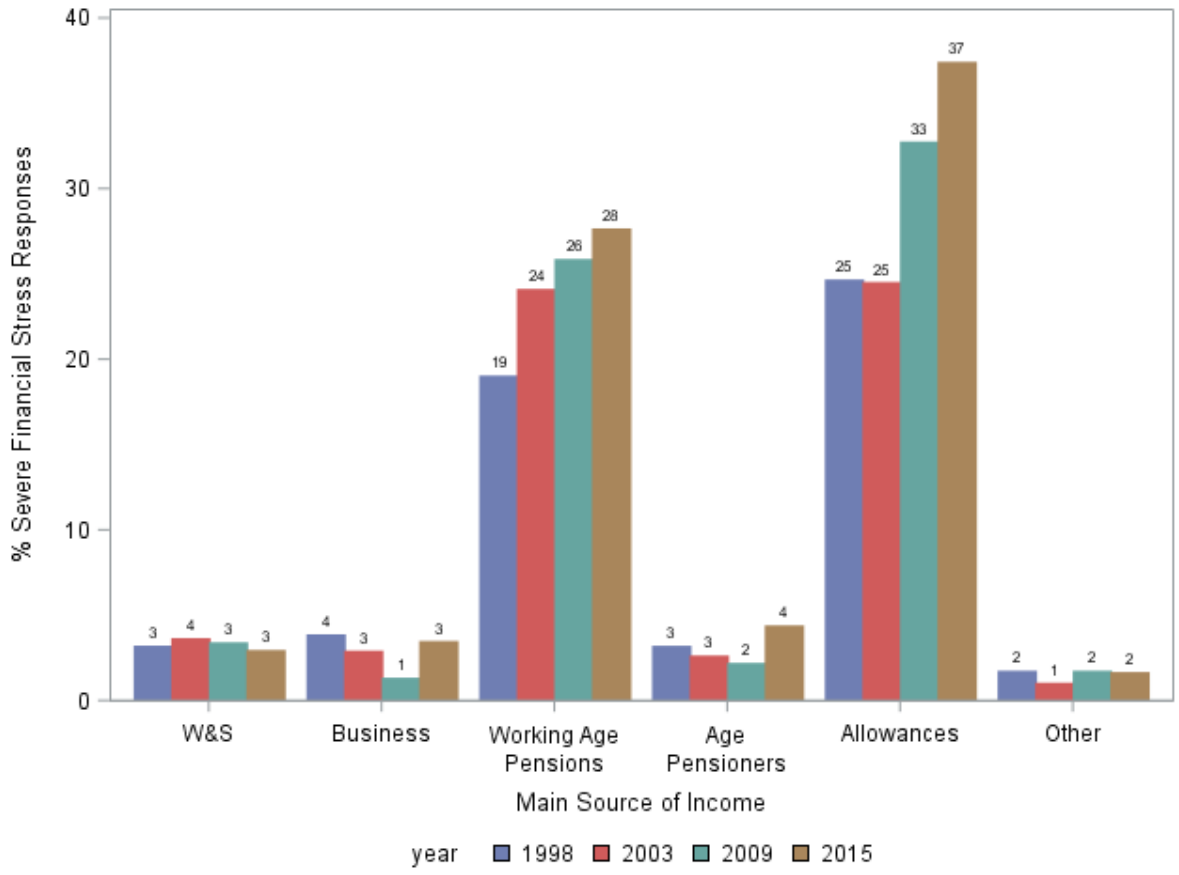
Key findings

- In 2015, 37 per cent on people on allowances were living in severe financial stress compared to only 3 per cent of those earning wages and salaries. In 1998, 25 per cent of allowance households were living in severe financial stress.
- For those on working age pensions, 28 per cent were living in severe financial stress by 2015. In 1998, 19 per cent of these households were in severe financial stress.
- Poverty for families whose main source of income was allowances increased from 30 per cent to 66 per cent between 1993 and 2017. This compares to 7 per cent for households whose main source of income was wages or salary.
- Similarly, the rate of poverty for children in allowance households has increased from 25 to 66 per cent between 1993 and 2017.

In this section we divide households up into their main source of income. The ABS survey data splits households into wages and salaries, business, government benefits and other sources. We further split the government benefits between working age pensions, age pensions and allowances. A further group called 'Other Government Payments' is excluded as the group has only a small sample size.

Working age (adults below pension age – 65 years and under) pensions include the Disability Support Pension (DSP), Carer Payment and Parenting Payment. These payments are typically paid to persons under the age pension age but who are not expected to be in the labour market for the immediate future. Their payments are typically higher than working age allowances where there is usually an expectation that persons will only on the payment for a temporary period. These allowances include the JobSeeker (previously Newstart Allowance) and Youth Allowance payments and various other, but less common payments.

Figure 1: Severe Financial Stress Trends, Main Source of Income



ABS Household Expenditure Surveys, 1993-4 to 2015-16

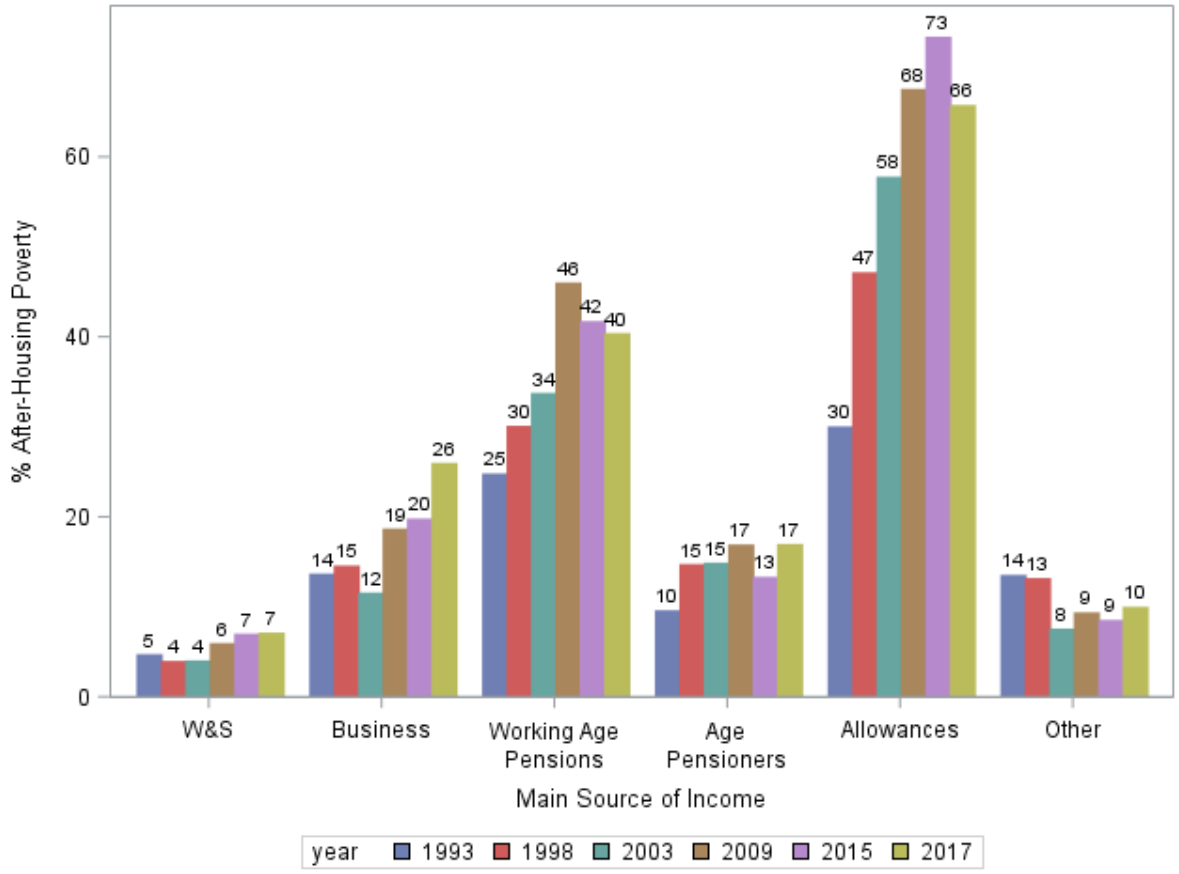
Figure 1 shows the stark difference in the likelihood of severe stress by different sources of income. Wage and Salary, business, age pension and other income categories all have very low rates of severe stress – typically between 1 and 4 per cent of these households' experience severe stress. Since 1998 those households relying on working age pensions

(disability, carer, and parenting payment) and allowances (JobSeeker, Youth Allowance) experienced significant increases in severe financial stress. In 2015, 37 per cent of allowance households were in severe financial stress – up from 25 per cent in 1998. Likewise, working age pension household severe stress rates increased from 19 per cent to 28 per cent.

In terms of the count number we also estimate increases in the average count for working age payment households. Working age pension average count increased from 1.3 to 1.7 out of 8 possible stressors. Allowances households were relatively stable shifting up from 2 to 2.1. This compares to wage and salary households where their stress count lowered from 0.5 to 0.3 – one seventh of allowance households in 2015. Age pension households and business and wage and salary households all have an average count of 0.3, well below that of households mostly reliant on working age payments.

Figure 2 shows the extreme differences between households with different sources of income. Poverty rates are relatively minimal for wage and salary households with current rate of 7 per cent, up from 5 per cent in 1993[4]. Households with business as the main source of income have a poverty rate of 26 per cent in 2017, up from 14 per cent in 1993. This is an interesting contrast between poverty and financial stress, where the latter was quite small for these households. As is well known, weekly business income is known to be a poor indicator of wellbeing given the often variable nature of business income. Age Pension households have poverty rates roughly in line with the national average and with the exception of 1993 have remained relatively constant. The households with the highest rates of poverty are those household's dependent on either working age pensions or allowances or other government payments. Allowance households are particularly prone to poverty with rates increasing dramatically since 1993. Poverty rates have increased from 30 per cent in 1993 to 66 per cent in 2017. Child poverty rates for allowance households have increased sharply from 25 to 66 per cent between 1993 and 2017. It should not surprise that financial stress rates have also increased strongly for these households. Overall, child poverty rates have increased from 13.9 to 17.5 per cent between 1993 and 2017.

Figure 2: After-Housing Poverty Rate Trends, Main Source of Income

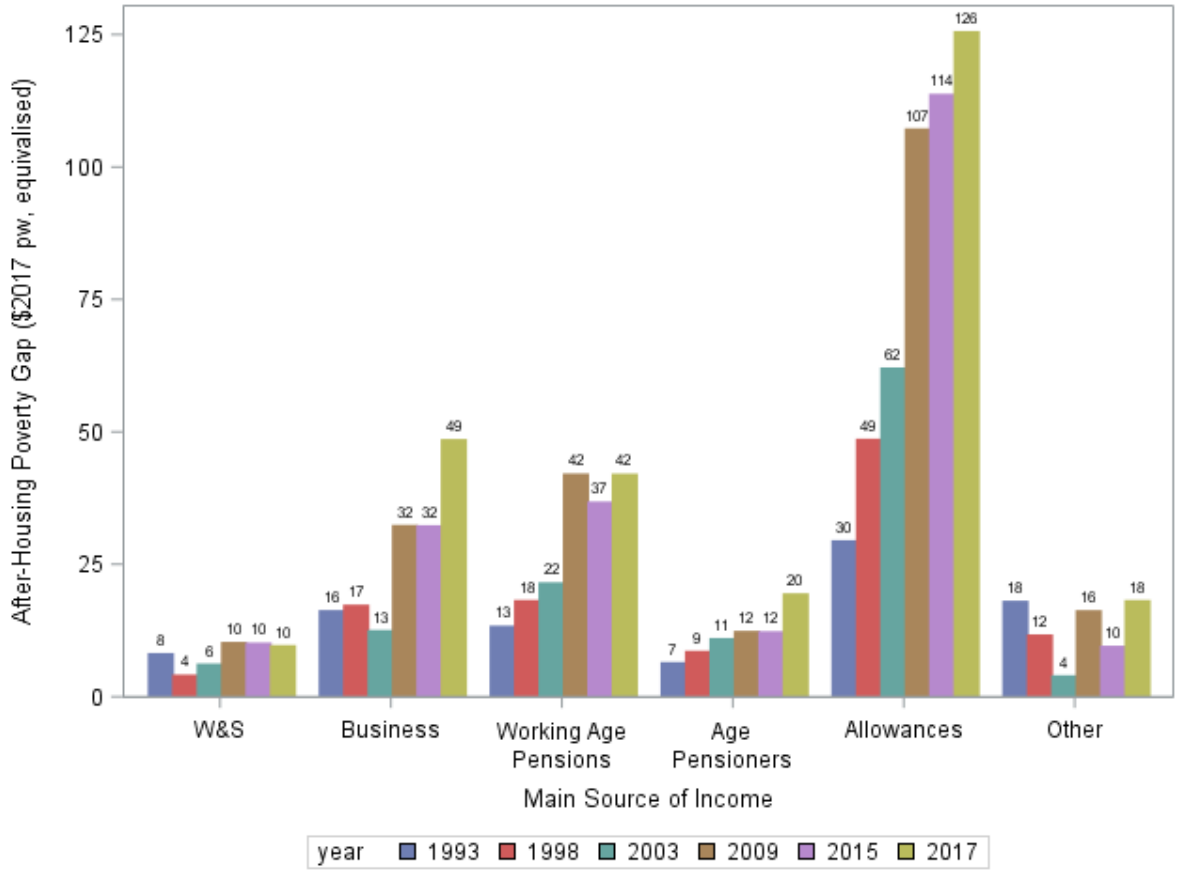


ABS Household Expenditure Surveys, 1993-4 to 2015-16, Survey of Income and Housing 2017-18

Related to the poverty rate is the poverty gap. The poverty gap is similar to the poverty rate except it provides a measure of the depth of poverty. The poverty rate is binary and therefore gives no indication of whether a household is in poverty by a dollar or several thousand dollars. The gap measure overcomes this and arguably provides a stronger measure of poverty and a better sense of the severity of poverty of individual and groups of households.

The results are similar to the poverty rate figure except the trends are stronger. In particular, allowance household's poverty gap increased from $30 per week to $126 per week (in 2015 dollars). In spite of a significant boost to the age pension in the 2009-10 financial year as part of the Harmer pension reforms, there was little reduction in poverty rates or gaps for age pension households – their low poverty rates suggesting most of these households were above the poverty line prior to reforms. The after-housing poverty line and gap trends would be expected to show a more favourable poverty result for age pensioner households compared to the standard poverty rate that does not deduct housing costs. This is due to their high rate of home ownership (outright) and therefore lower average housing costs compared to younger households.

Figure 3: After-Housing Poverty Gap Trends, Main Source of Income



ABS Household Expenditure Surveys, 1993-4 to 2015-16, Survey of Income and Housing 2017-18

2.2 Family Type

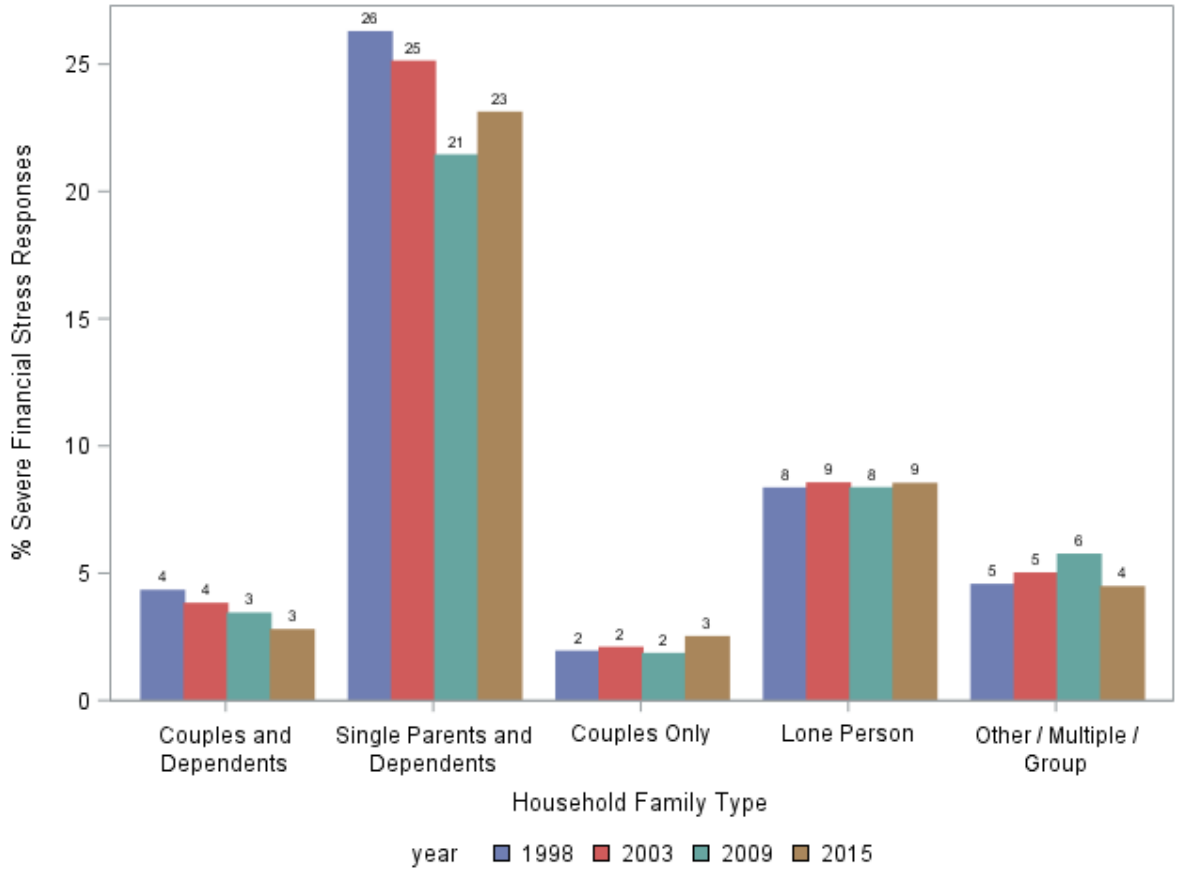
Key findings

- Severe stress rates for single parents in 2015 were much higher than other family types, with 23 per cent or almost 1 in 4 reporting skipping meals, limiting heater use or relying on charities to get by
- In contrast, couples with dependent children reported severe financial stress rates of 3 per cent in 2015
- 31 per cent of single parent families lived in poverty in 2017
- Financial stress is higher for families with children under 5
- In 2015, around 1 in 3 single parent families (30 per cent) with dependent children under 5 years were in severe financial stress
- Poverty rates for this group were also higher, with 51 per cent of families and 56 per cent of children in poverty in 2017.

Figure 4 shows that single parent families consistently have the highest rates of severe financial stress. They are nearly 8 times more likely to suffer severe stress compared to

couples with children families, with 23 per cent in severe stress in 2015. There has been a small reduction in stress for single parent families - largely in line with the overall trend. Overall, couples have the lowest rates of stress, followed by couples with children. Lone persons have the second highest rates of stress. The lowering of severe financial stress in Australia since 1998 has been driven by families with children, while other types of households have not experienced substantial reductions in stress.

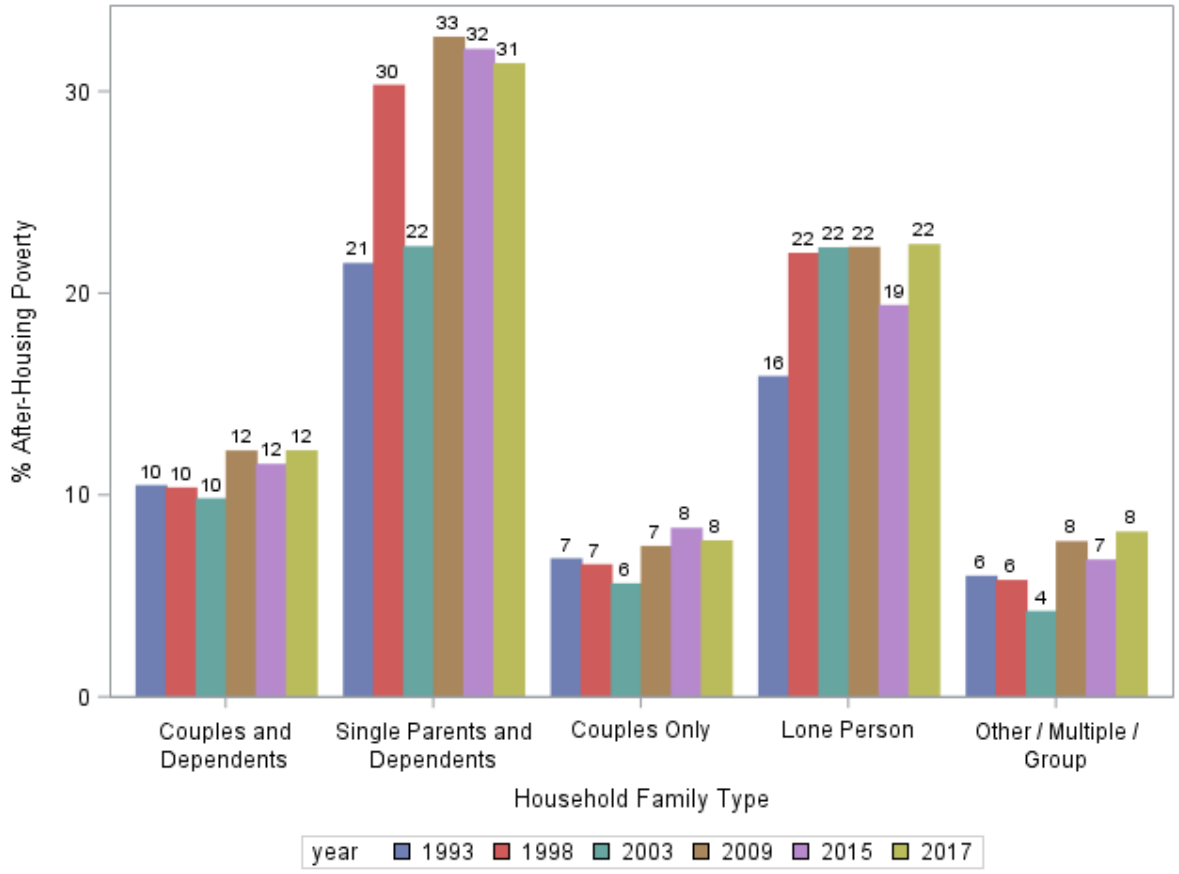
Figure 4: Severe Financial Stress Trends, Family Type



ABS Household Expenditure Surveys, 1993-4 to 2015-16

Figure 5 shows that after-housing poverty rates have increased for single parents and perhaps modestly for lone persons. They are stable for all other household types.

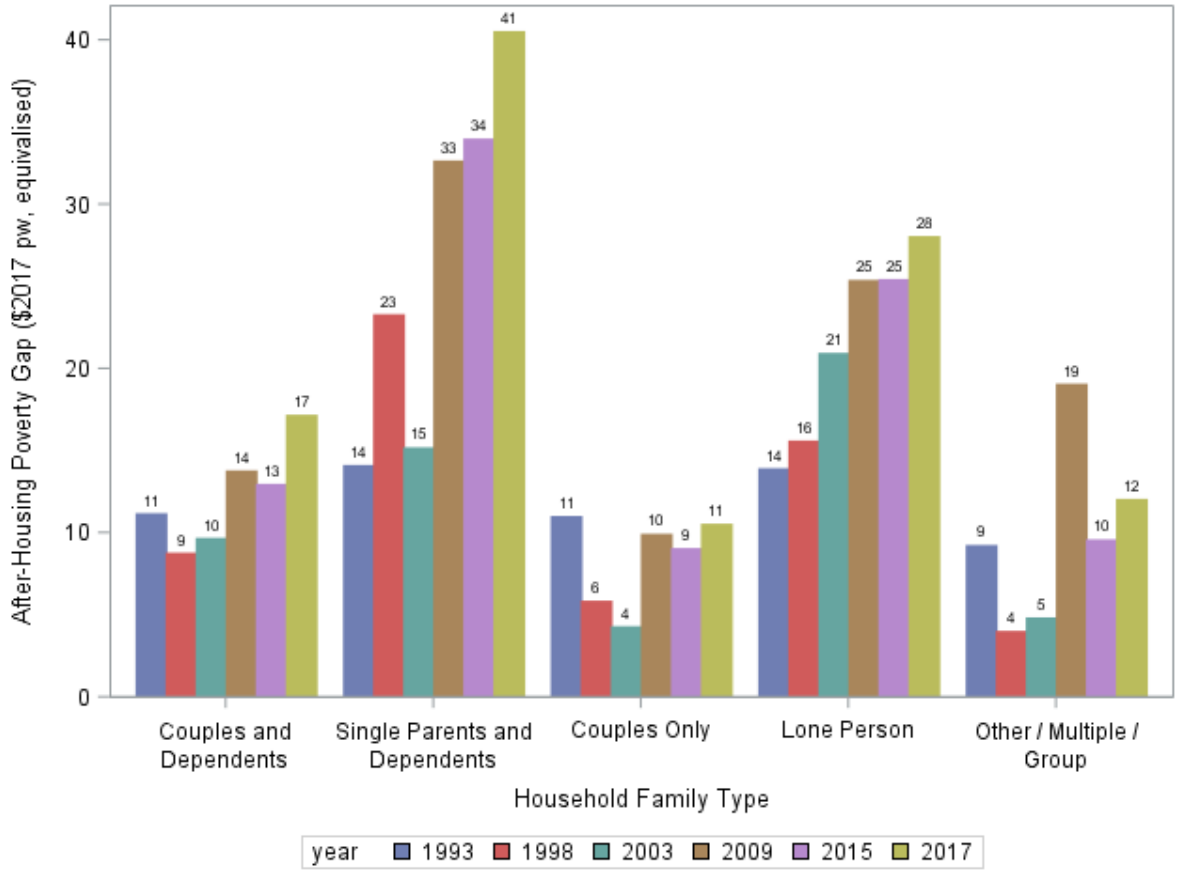
Figure 5: After-Housing Poverty Rate Trends, Family Type



ABS Household Expenditure Surveys, 1993-4 to 2015-16, Survey of Income and Housing 2017-18

Figure 6 shows that poverty gaps have also increased for single parents with average gaps increasing from $14 to $41 per week in 2017 dollars. There have been some increases for couples with children, however these are off a relatively low base. As per the poverty rate the gap has also increased for lone persons with gaps increasing from $14 per week to $28 per week since 1993. While poverty rates have, depending upon definition, largely remained unchanged, poverty gaps have increased across the board.

Figure 6: After-Housing Poverty Gap Trends, Family Type



ABS Household Expenditure Surveys, 1993-4 to 2015-16, Survey of Income and Housing 2017-18

The evidence on child poverty is that poverty is increasing. For couples with kids the after-housing rate is moderately higher at around 14.1 per cent for 2017. The picture is somewhat clearer for single parents with child poverty rates increasing from 24.8 per cent to 40 per cent. We estimate a total of 789,000 children under the age of 15 are in poverty in Australia using the after-housing measure for 2017.

We estimate that both person and child rates of poverty, are higher for families with children under the age of 5. For couple families with children, the after-housing poverty rate for the families with younger children is 15.3 per cent and 10.2 per cent for families with older children. For single parents the contrast is stronger, with poverty rate for families with a child under 5 at 50.7 per cent compared to 25.4 per cent for families with children all 5 or older.

Financial stress rates are also higher for the families with younger children with couple families with at least one child under 5 estimated to have a rate of severe financial stress of 3 per cent compared to 2 per cent for the older families. Severe stress rates are much higher for single parent families, rate in younger child families at 30 per cent and the rate in older child families at 21 per cent in 2015. The pattern is similar for the financial stress count measure.

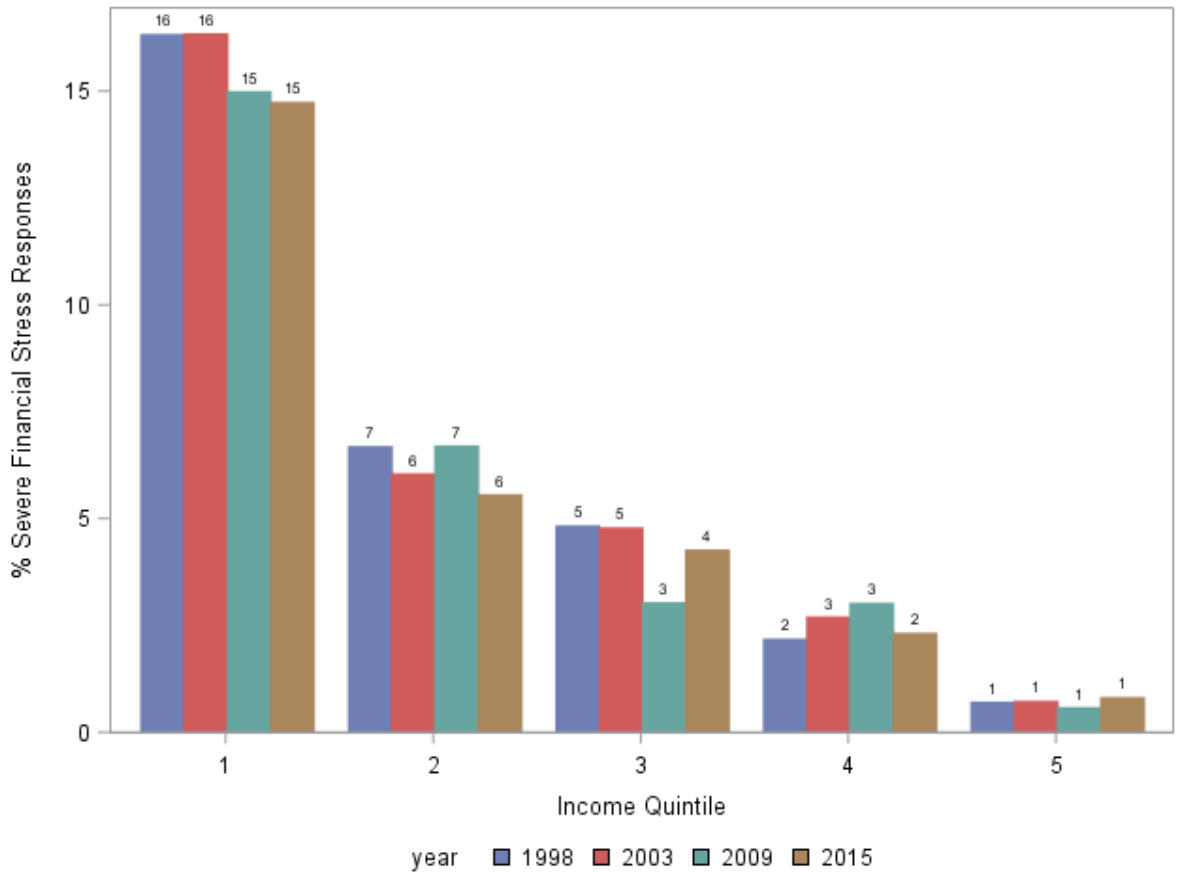
2.3 Income Level

Key findings

- Lower income families (quintile 1) are nearly four times more likely to be in severe financial stress compared to middle income families in 2015
- Severe financial stress in single parent families is substantially higher regardless of income, with single parents with relatively high income (quintile 4) having a higher stress rate than a couple family with children in the lowest income quintile

Poverty statistics by income level are to some extent trivial as it will always be the case that only the lowest income households will be defined as being in poverty. For technical reasons there is usually a small amount of (after-housing) poverty in higher income categories as some households have very significant housing costs, either through choice or necessity. In this section we focus on financial stress measures for different income levels to better understand the relationship between income and financial stress.

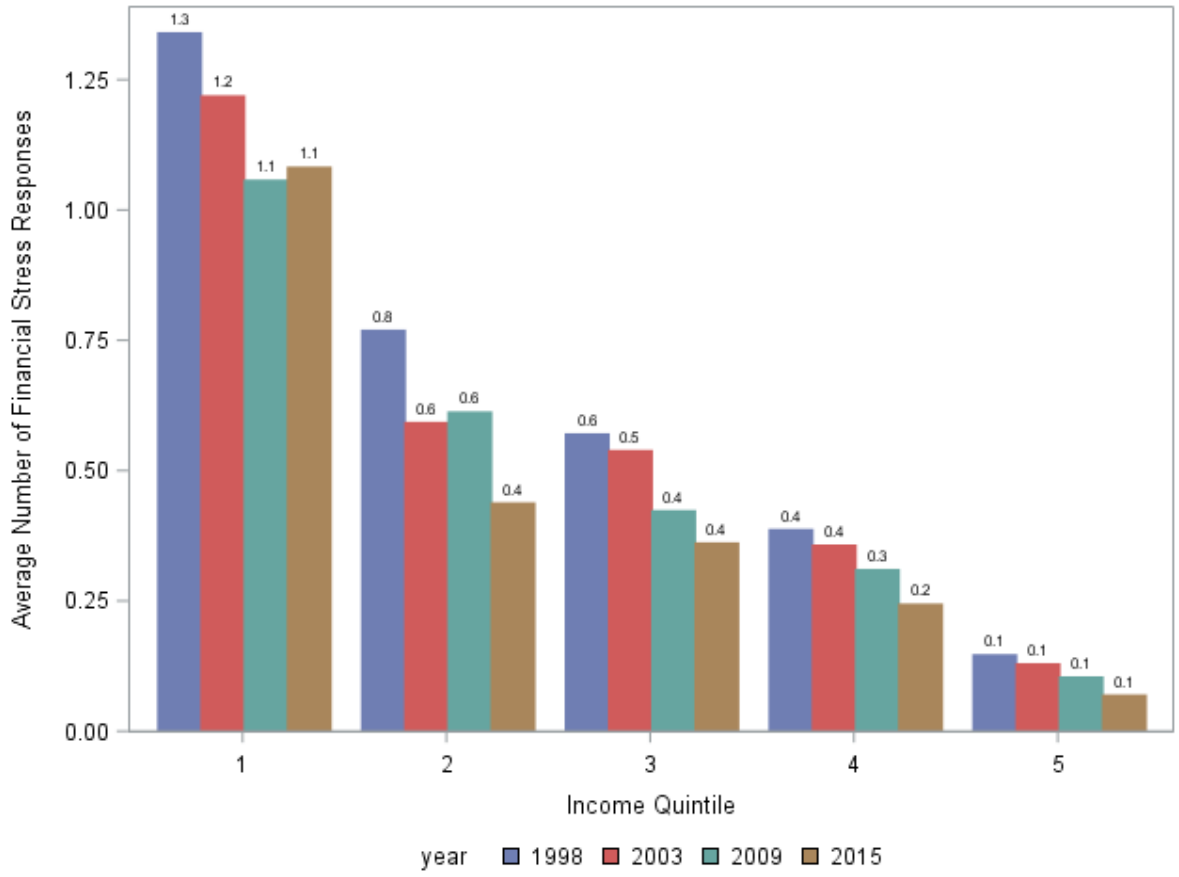
Figure 7: Severe Financial Stress Trends, Income Quintiles (equivalised disposable income)



ABS Household Expenditure Surveys, 1993-4 to 2015-16

Figure 7 shows a clear relationship between income and severe financial stress. The lowest income households (quintile 1) have a 15 per cent probability of experiencing some form of severe financial stress. This is nearly 4 times that of a middle-income family (quintile 3) and 15 times that of a high income household (quintile 5). There has been a modest reduction in financial stress since 1998 for the quintile 1 while the other categories have experienced little change.

Figure 8: Financial Stress Count Trends, Income Quintiles (equivalised disposable income)



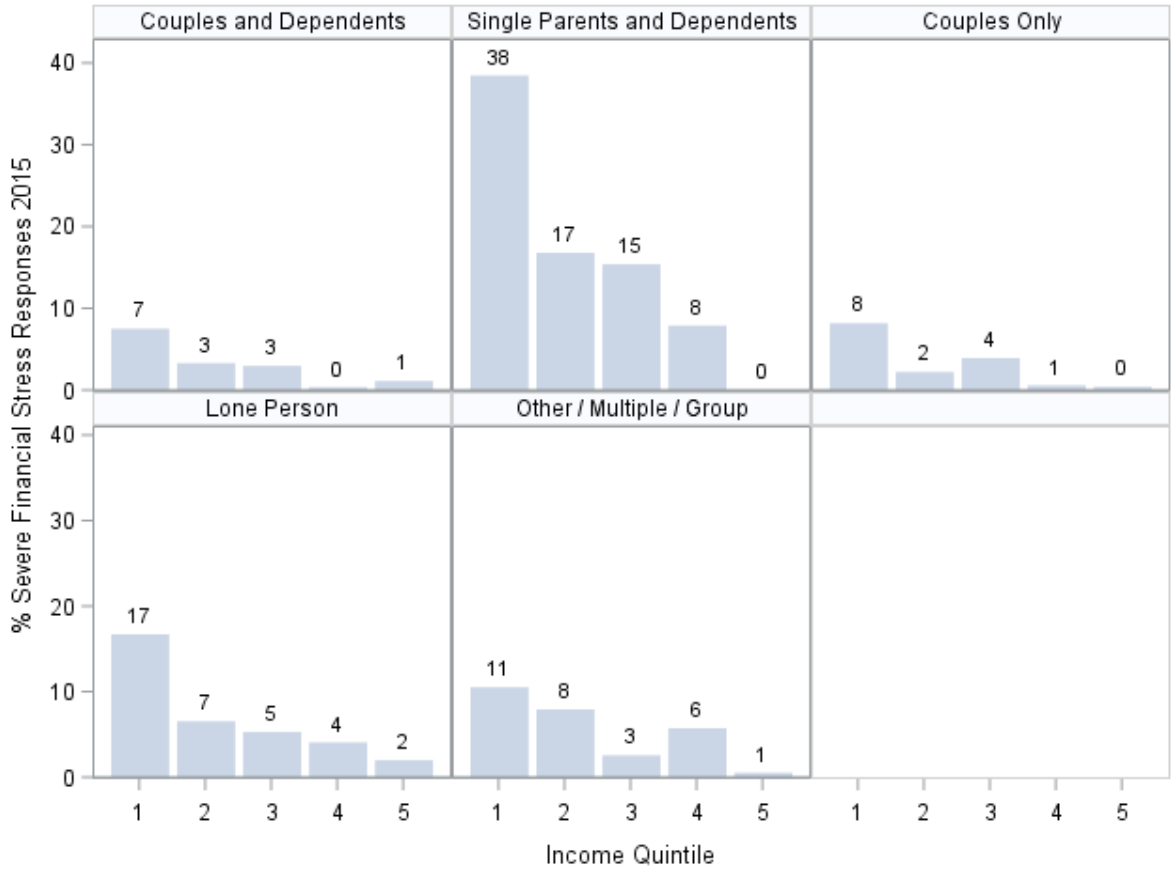
ABS Household Expenditure Surveys, 1993-4 to 2015-16

Figure 8 shows a more substantial downward trend in the count of stress responses. This trend is consistent throughout the income distribution. We observe lower rates of stress as income increases, however the gradient isn't as marked as it was for severe stress.

Figure 9 clearly shows that for family type there is a strong relationship between income and severe financial stress. While this holds for all family types it is noteworthy that for a given income level single parents report much higher rates of severe financial stress than other family types. Lone persons, to a lesser extent, also exhibit higher severe stress rates than other family types. While it was expected that single parents would experience more financial stress than other family types it is interesting that even holding incomes constant, we find that single parent families still face much higher stress rates. The stress rates are so much

higher that a single parent with a relatively high income that places them in quintile 4 (between the 60th and 80th percentile) has a higher stress rate than a couple family with children in the lowest income quintile. This result indicates that there are factors other than income specific to single parents that dramatically increase their risk of severe financial stress. Such factors could include, low wealth, being time-poor, limited financial or other support from friends and family. The results for the count of financial stress are similar to those in Figure 9 but with moderately less impact by income quintile.

Figure 9: Severe Financial Stress, Family Type by Income Quintiles



ABS Household Expenditure Surveys 2015-16

2.4 Tenure Type

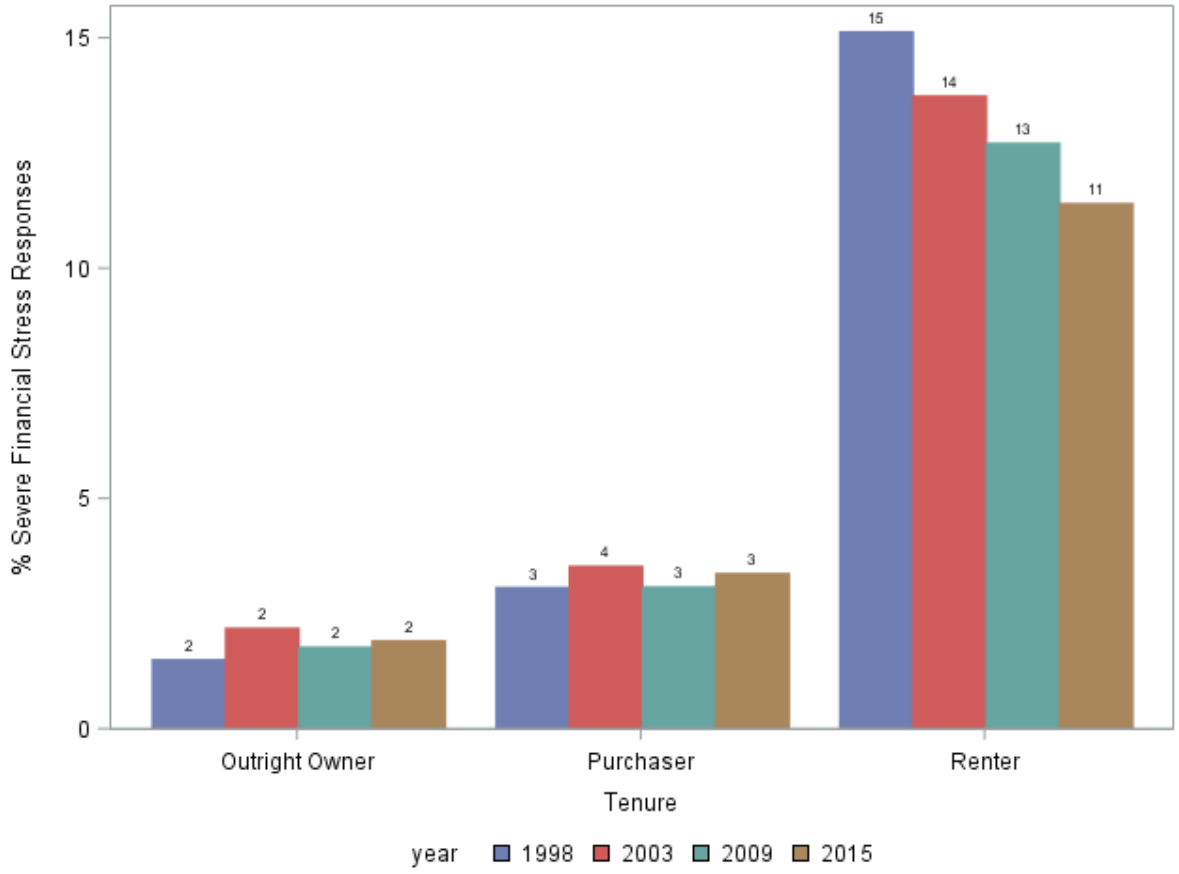
Key findings

- Severe financial stress rates declined for renters over the period 1998 to 2015 but remain four times higher than severe stress rates for purchasers

Severe stress rates have marginally increased for outright owners and those purchasing a house, albeit from a relatively low base. Severe financial stress rates are considerably higher

for renter households when compared to those purchasing. This would be expected due to purchaser households typically having higher incomes. Renter stress lowered substantially between 1998 and 2015. The pattern is similar for the count form of financial stress except that purchaser households have also enjoyed some reduction in stress.

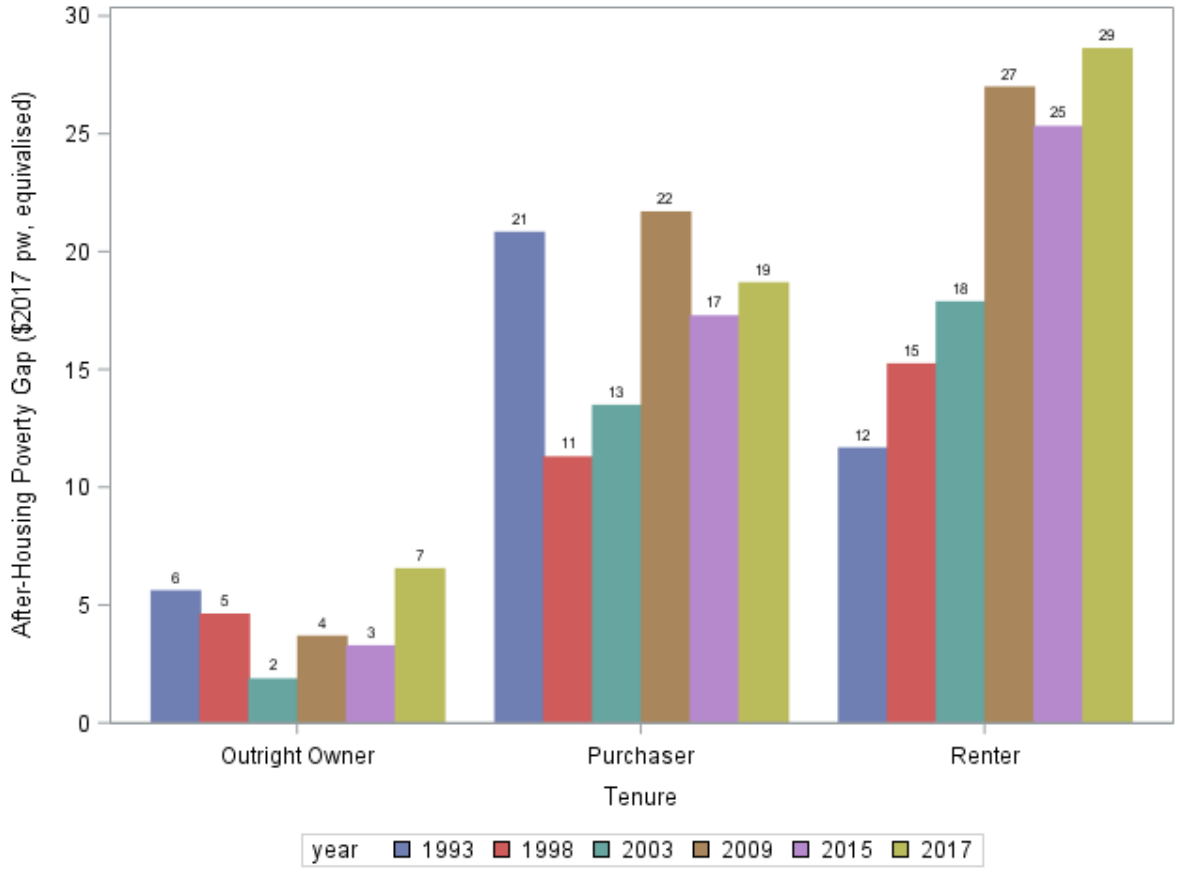
Figure 10: Severe Financial Stress Trends, Tenure Type



ABS Household Expenditure Surveys, 1998-89 to 2015-16

The poverty gap is shown in Figure 11 for different tenure types. Perhaps surprisingly we find the opposite trend to that of financial stress with the poverty gap increasing for renter households since 1993. We also find a modest increase for purchaser households. The relationship between financial stress and poverty rates is not clear and not necessarily a strong correlation. A challenge faced with this sort of analysis is that there may be confounding factors such as changes in the population structure of renters, which has been a population that has grown strongly in recent years. Regression analysis undertaken used in the optimal policy modelling section of this paper considers a more detailed analysis of financial stress where we do attempt to account for other factors such as income and wealth.

Figure 11: After-Housing Poverty Gap Trends, Tenure Type



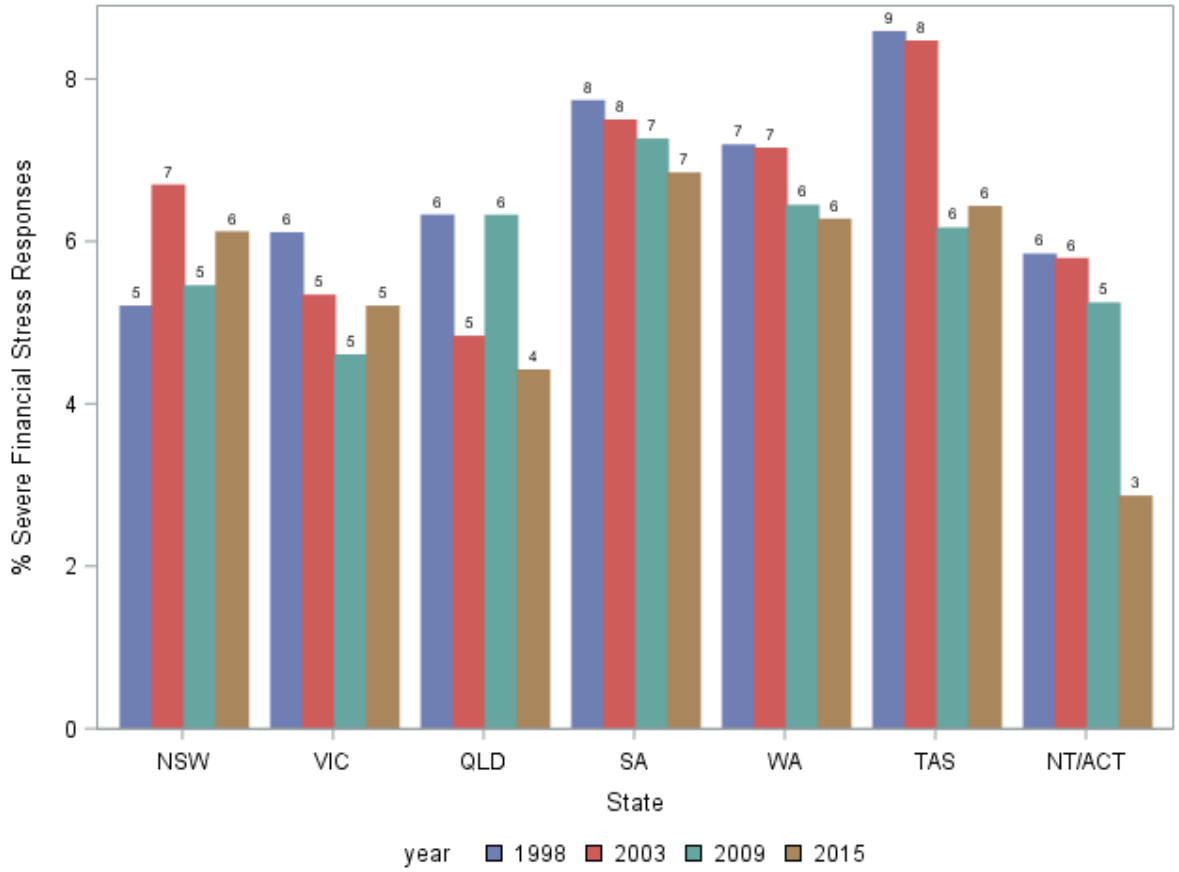
2.4 Regions

Key findings

- Regional Australia tends to have moderately higher rates of severe stress when compared to capital city regions
- With the exception of Queensland and Tasmania, renters in regional areas are more likely to experience severe financial stress compared to capital cities, with 8 per cent of renter households in Sydney in severe stress compared to 20 per cent in regional NSW in 2015.

Financial stress is relatively even between the states of Australia. The general reduction in financial stress is common to all states and territories. Tasmania and the territories have enjoyed the largest falls in severe financial stress. South Australia has the highest rate of severe financial stress in 2015, just ahead of Tasmania and New South Wales.

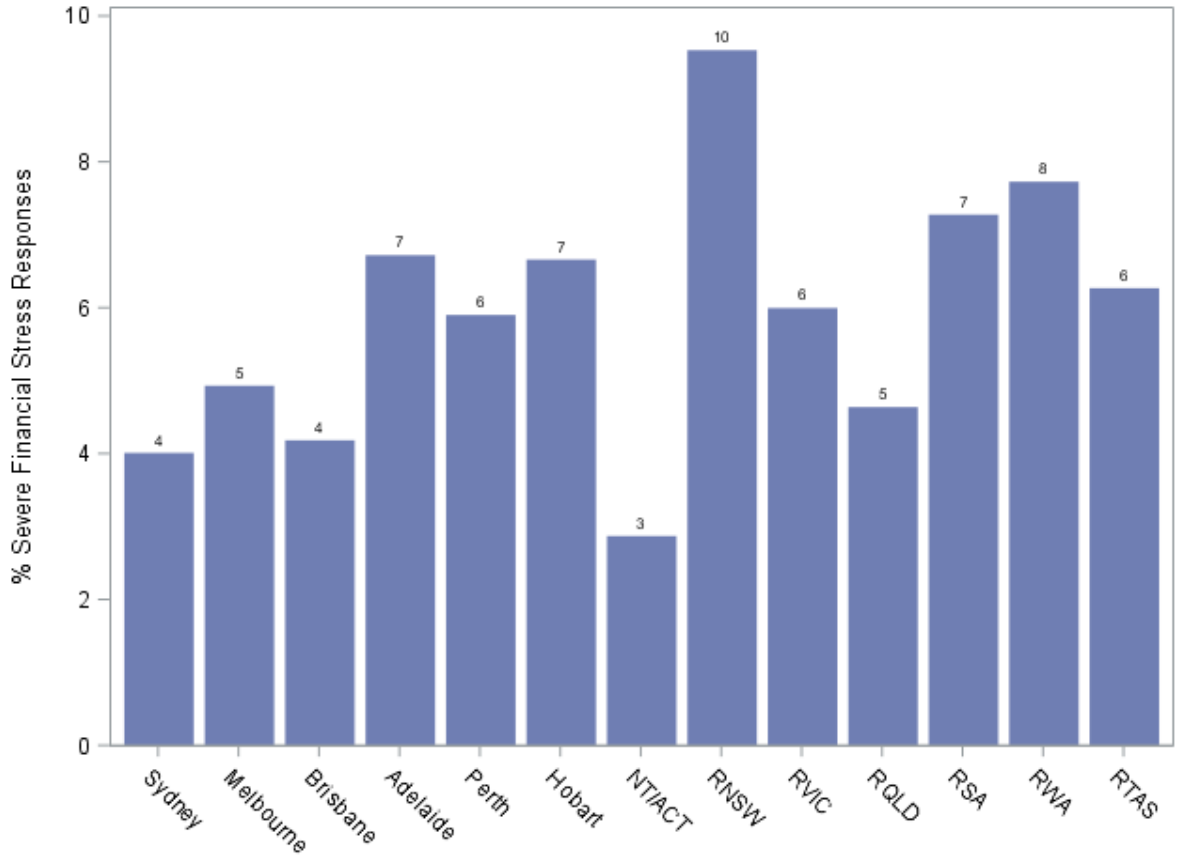
Figure 12: Severe Financial Stress Trends, State



ABS Household Expenditure Surveys, 1998-89 to 2015-16

Figure 13 shows that regional Australia tends to have moderately higher rates of stress when compared to capital city regions. The lowest rate of severe stress is in the combined territories at just 3 per cent in 2015. The highest rate of severe stress is in regional NSW at 10 per cent. Sydney, Melbourne and Brisbane all have relatively low stress rates at around 4 to 5 per cent. Regional areas of South Australia, Western Australia and Tasmania all have above average severe stress rates.

Figure 13: Severe Financial Stress, Regions, 2015



We do find that renter households are much more likely to experience financial stress in regional Australia compared to capital cities. For example, 8 per cent of Sydney renter households are in severe stress compared to 20 per cent in regional NSW in 2015. Queensland and Tasmania are the only states where severe stress is higher in the capital than the rest of the state.

Average poverty rates and poverty gaps are fairly similar between the states. They have all estimated poverty rates of around 12 per cent since 1993 but with some minor variation year to year and state to state. The territories have lower poverty rates, currently sitting on 8 per cent. Poverty gaps have increased in real terms in each state and the combined territories between 1993 and 2017.

3 Poverty Estimates through COVID-19

In response to the emerging and anticipated economic impacts of COVID-19, a range of measures were implemented by the Australian Government. The Australian Government July 2020 Economic and Fiscal Update (Overview Fact Sheet) estimates the additional expenditure on COVID-19 economic response measures as being $164.1 billion. Two of the more significant measures were increases in the level of social security benefits through the coronavirus supplement paid to recipients of the JobSeeker payment and the Parenting Payment and a large-scale wage subsidy scheme (the JobKeeper payment). It is forecast that the cost of the JobKeeper payment will be $85.7 billion over the forward estimates (all of the expenditure) for fiscal years 2019/20 and 2020/21 and the cost of income support for individuals and payments to support households is forecast to cost $28.1 billion over the forward estimates for the same period.[5] To put this in context, this compares to pre COVID-19 social security expenditure of about $120 billion per year on cash payments. The second wave of COVID-19 in Victoria is expected to increase these numbers.

The JobKeeper payment was announced on 30 March 2020 and initially was to be in place for six-months ending on 27 September 2020 with a review after three months to inform Government decisions about the future of JobKeeper. Following the three-month review the Government announced that the JobKeeper Payment would be extended until 28 March 2021 with a lower rate of payment from 28 September 2020 with two tiers of payment.

Under the first phase of the JobKeeper, Payments from 30 March to 27 September 2020 payments are made to eligible employers[6] of $1,500 per eligible employee (irrespective of their prior or current hours and earnings). Eligible employees are those who were employed by an eligible employer as either a non-causal employee or long-term casual employee on 1 March 2020 and were aged 18 years or older at 1 March.[7] From 3 August 2020 eligible employees has been extended to include individuals who were employed on 1 July 2020.[8] In this paper we term this the June JobKeeper Payment setting.

From 28 September 2020 until 28 March 2021 eligibility for the JobKeeper payment will be based on businesses experiencing the relevant decline in turnover in the immediately preceding quarter. JobKeeper will be paid at a reduced rate of $1,200 per fortnight from 28 September 2020 to 3 January 2021 for employees who were working for 20 hours or more a week in the reference work (1 July 2020) and $750 per fortnight for employees working less than 20 hours per week in the reference week. From 4 January to 28 March 2021 the JobKeeper Payment rate will be further reduced to either $1,000 per fortnight for those working more than 20 hours per week in the reference work and $650 per fortnight for those working less than 20 hours per week. In this paper we model the policy setting of JobKeeper payments of $1,200/$750 per fortnight and term this the July JobKeeper Payment setting.

In late March the Government introduced the temporary Coronavirus (COVID-19) Supplement of $550 per fortnight until 27 September 2020.[9] In this paper this is termed the June COVID-19 Supplement policy. From 28 September to 31 December 2020 the COVID-19 Supplement was reduced to $250 per fortnight, before being cut to $150 from 1 January

2021. In this paper this is termed the July COVID-19 Supplement policy. The COVID-19 Supplement is paid to those receiving the JobSeeker Payment, Youth Allowance and Parenting Payment (Partnered or Single).[10]

These policies have several stated objectives. According to the review of the JobKeeper payment by the Australian Treasury (2020, p. 14) the objectives of the JobKeeper payment are to: support business and job survival while strong health restrictions are in place; preserve the employment relationship between individuals and firms; and provide needed income support. The level of social security payments have been increased to reduce the financial impacts of those who are without work due to COVID-19.

It is clear that these two payments have boosted the incomes of Australians above what they would have been if the social security system had been left more or less as is during the COVID-19 period. However, it is less clear who has benefited the most. This section presents estimates of the impact of the changes to the social security payments (JobKeeper and JobSeeker COVID-19 policies) on poverty and financial hardships experienced by Australian households and how different types of households have been impacted. The impacts of the JobKeeper and JobSeeker payments are modelled using a combination of data from the ANU Centre for Social Research and Methods COVID-19 tracking surveys and the microsimulation model PolicyMod.

3.1 COVID-19 Scenario Modelling

In this section, three separate combinations of policy and economic scenarios are modelled. These, in our assessment represent reasonable, past current and future outcomes:

1) Base Case: Pre-COVID-19 economy and policy trajectory for December 2019 (the no COVID-19 counterfactual scenario);
2) Scenario 1: Peak COVID-19 June COVID-19 policy and June 2020 economy;
3) Scenario 2: April 2021 policy settings (JobKeeper and JobSeeker supplement removed) and April 2021 economy (COVID-April 2020 Sim);
4) Scenario 3: April 2021 policy settings (JobKeeper and JobSeeker supplement removed) but without the JobSeeker payment $50 per fortnight increase and April 2021 economy (COVID-April 2020);

For Scenario 1 we model 3.5 million Australian's on the JobKeeper payment and 1.8 million persons on JobSeeker. Prior to COVID (Base Case) there were around 814,000 persons on the JobSeeker payment (either Newstart or Youth Allowance – other). By April 2021 we assume that the JobSeeker recipients are around 1.3 million persons. This latter figure includes a simple trend analysis of recent JobSeeker numbers and adding an additional 100,000 persons from the pool of persons who previously were on JobKeeper[11].

In simple terms we are comparing pre-COVID-19 with peak-COVID-19 and post-COVID-19. For post-COVID-19 we apply 2 scenarios; one with the $50 JobSeeker increase and one without the increase, to determine its impact.

While this paper explores several counterfactual outcomes based on several policy and economic settings, we do not model all the policy measures implemented during the pandemic. The policy measures associated with the response to COVID-19 which are not considered in this paper include:

- allowing early access to superannuation for people financially affected by COVID-19;
- payments to encourage residential construction (HomeBuilder);
- a range of measures to support small or medium sized businesses including a tax free cash flow boost payment to employers, and underwriting a proportion of unsecured loans to Small to Medium Enterprises;
- temporary changes to insolvency laws that are designed to allow businesses to resume normal operation once the COVID-19 crises has passed;
- increasing and extending the instant asset write-off; and
- industry specific support for the child care sector, aviation industry and communications, cyber safety and the arts;
- The two $750 Economic Support Payments to social security, veteran and other income support recipients and eligible concession card holders

The reason for the focus on JobSeeker and JobKeeper payments is that they are the largest expenditure item associated with the policy response to COVID-19 and hence the most likely to directly impact on poverty. These payments were also the main social security cash stimulus payments to Australian households during the COVID-19 period[12].

This paper models the impacts of the following two COVID-19 policies:

- Increased rate of payment for the JobSeeker payment[13] (COVID-19 Supplement) and the associated relaxation of the JobSeeker Partner Income test; and
- Introduction of the JobKeeper wage subsidy payment.

3.2 Data, modelling methodology and measures of poverty

All analysis is undertaken using the ANU Centre for Social Research and Method PolicyMod model of the Australian tax and social security system and relates to the 2020-21 financial year. PolicyMod is based on the Australian Bureau of Statistics Survey of Income and Housing (2017-18) and is benchmarked to a range of administration data sets to improve modelling of social security payments and taxation.

A particular challenge for this research is that the new JobKeeper payment and the expanded JobKeeper supplement are applied to many 'new' recipients. PolicyMod normally models eligibility and entitlement to payments through applying a set of rules. For example, if your family has an income below a certain threshold we can estimate your entitlement to family payments depending upon the age and number of children in the family – information which is all provided in the underlying survey data. The ABS Survey of Income and Housing 2017-18 obviously predates JobKeeper and thus does not provide data on JobKeeper.

There is a lack of data available to us on the characteristics of those receiving JobKeeper other than the industry in which they are employed. In order to provide some information on the characteristics of those receiving JobKeeper a question on receipt of JobKeeper (and receipt of JobSeeker) two questions were added to the August 2020 ANUpoll/COVID-19 impact monitoring survey, replicating questions from the ABS Household Impacts of COVID-19 Survey.[14] This data will be made available at the unit-record level through the Australian Data Archive, unlike the data collected by the ABS which has only been made available in aggregate form.

ANUpoll is a regular survey run by the ANU Centre for Social Research and Methods and which is conducted using the Life in Australia™ (LiNA) panel. ANUpoll is Australia's only probability based online panel and allows for Australia's only nationally representative longitudinal survey with data from pre- and post-COVID-19. The longitudinal nature of the data means we can model the characteristics of people who have moved from employment to JobKeeper or JobSeeker from February to August 2020.[15]

For JobKeeper, a probit regression model is used to estimate the individual level characteristics associated with reporting having received the JobKeeper Payment and the results of this model are used to impute people on the PolicyMod basefile who were previously employed and meet several other necessary requirements for these payments. The August 2020 ANUpoll understates the number of people on JobKeeper. This principally occurs due to some people not being aware they are receiving the payment as they are still working and either receiving the standard JobKeeper payments or their employer is paying them the JobKeeper payment in addition to some other supplementary wage. While this is not ideal, we do believe that the ANUpoll provides a strong basis (and the only basis we are aware of) for identifying the characteristics of those persons most likely to receive the two payments (based on those who report receiving the payment) and our imputation process accurately estimates the number of recipients are imputed onto PolicyMod.

The imputation process for new recipients of the JobSeeker payment also uses data from the August 2020 ANUpoll to estimate a model of the characteristics of those who move from employment earlier in the year (February) to not employed in August and then using this to impute receipt of JobSeeker on the PolicyMod base file. Details of both the JobKeeper and JobSeeker regression models are provided in Appendix A.

For each of the policy and economy scenarios we calculate a range of outcomes including poverty gaps and poverty numbers and rates.

The modelling for each scenario does not consider any behavioural impacts and so represents a static perspective of policy impacts. We were also unable to estimate any additional income some persons who receive JobKeeper or JobSeeker may receive. We have simply set their employment income (business and wages and salaries) to zero. We know this may not be the case for all and from this perspective this paper represents a worst-case scenario. However, we expect the vast majority of recipients will not receive additional wages or salaries or business income and don't expect such an adjustment would make a considerable difference to the results. The modelling is also not able to fully model all aspects

of JobKeeper and JobSeeker such as JobKeeper's exclusion of casuals who had not been employed for the 12 months prior to the cut-off date. The modelling also does not include any impacts that may flow from changes to superannuation that allows some people to use a share of their superannuation balance to assist with household costs, as this represents a temporal transfer in income, rather than an increase in income over a person's lifetime. Our modelling focusses on regular weekly income and does not attempt to account for changes in wealth as households and persons potentially dip into reserves.

3.3 Modelling Results for Poverty through COVID-19 in Australia

Key findings

- By April 2021 there will be 124,000 more children in poverty than pre-COVID and 163,000 more than at the peak of COVID-19 in June 2020.
- Prior to COVID-19, around 3.7 million people were in poverty, including over 624,000 children
- This decreased during COVID-19 due to the coronavirus supplement, with the number of people in poverty declining to just under 3.5 million, including 585,000 children despite the economic crisis
- With the economic recovery still ongoing, and only a $50 increase in allowances, over 4.2 million people are expected to be in poverty from 1 April 2021, including almost 750,000 children
- Prior to COVID-19, 39 per cent of children in single parent families lived in poverty, with the Coronavirus supplement reducing this rate to 17 per cent
    - With the replacement of the coronavirus supplement ($550 per fortnight) with a $50 per fortnight increase, child poverty rates for single parents will return to 41 per cent compared to 13 per cent for children in couple families.
- Removing the Coronavirus Supplement but increasing JobSeeker by just $50 per fortnight we estimate will increase single parent child poverty rates for children under 5 from a low in June 2020 of just 12 per cent to 46 per cent by April 2021.
- The coronavirus supplement reduced poverty rates for those on JobSeeker from 88 per cent to 26 per cent. Following the removal of the supplement as well as the $50 per fortnight increase poverty rates are expected to return to 85 per cent.

In this section we develop estimates of poverty rates and poverty gaps for different points in time through COVID-19. Our first estimate is for just prior to COVID-19 – December 2019. We then estimate poverty estimates at the peak of COVID-19 for Australia in June 2020. At this point there were around 3.5 million Australian's on the JobKeeper payment and 1.8 million persons on JobSeeker. While the economic impacts in terms of downturn in hours worked and persons employed were at a peak it was also a time where payments were most generous with some people receiving more in benefits than they were previously earning through their labour income. We then estimate two separate scenarios for April of 2021. Firstly, we include the Government's recently announced increase to the JobSeeker payment and secondly we simulate the impact without that increase. By April the JobKeeper payment has been removed and the JobSeeker supplement payment has been completely removed having been gradually tapered down since its original $550 per fortnight payment.

Table 2 shows that the initial poverty rate for December 2019 was 14.4 per cent or almost 3.7 million persons. The poverty rate for children was a little higher at 15.6 per cent or 624,000 children under the age of 15. At the peak of COVID-19 in June 2020 there was a small reduction in poverty both with respect to the poverty rate measures and the poverty gap. The largest reduction was to child poverty. Earlier research suggests that had the original settings of the social security system been kept, a near doubling of poverty rates was expected at the peak of COVID-19 in June 2020 (Phillips 2020). The near doubling of JobSeeker and the $1500 JobKeeper payment ensured those people who were unemployed or placed on JobKeeper were unlikely to be in poverty.

Table 2: COVID-19 period estimated poverty rates

	Pre-COVID Dec 2019	COVID-Peak June 2020	COVID-April 2021	COVID-April 2021 Sim
AH Poverty Rate	14.4	13.7	16.6	17.2
AH Poverty Persons (000s)	3,663	3,484	4,240	4,392
AH Child Poverty Rate	15.6	14.6	18.7	19.7
AH Child Poverty Children	624	585	748	788
AH Poverty Gap	17.1	15.9	19.5	20.4
Poverty Rate (MI)	13.8	13	15	15.5
Poverty (MI) Persons (000s)	3,519	3,315	3,825	3,953

Source: PolicyMod, ANU

By April 2021 the JobKeeper payment will be removed and JobSeeker will continue at a new higher rate of around $620 per fortnight - $50 a fortnight above the pre-COVID rate. This rate while higher than pre-COVID rates is significantly lower than that of the peak of COVID-19 in June 2020. While the payment is lower there has been a significant improvement in labour market conditions with most people previously on the JobKeeper payment expected to be back in jobs paid by their employer and the number of persons on JobSeeker is also expected to be lower than at the peak of COVID-19 in June 2020.

Federal Treasury estimates that as JobKeeper is removed at the end of March around 100,000 persons will shift on to the JobSeeker payment. In our 'COVID-April 2021' we have attempted to incorporate changes to both payments and the number of persons on the JobSeeker payment. By April 2021 we estimate that the poverty rate will increase to 16.6 per cent, an increase of 2.2 percentage points on pre-COVID rates and 2.9 percentage points

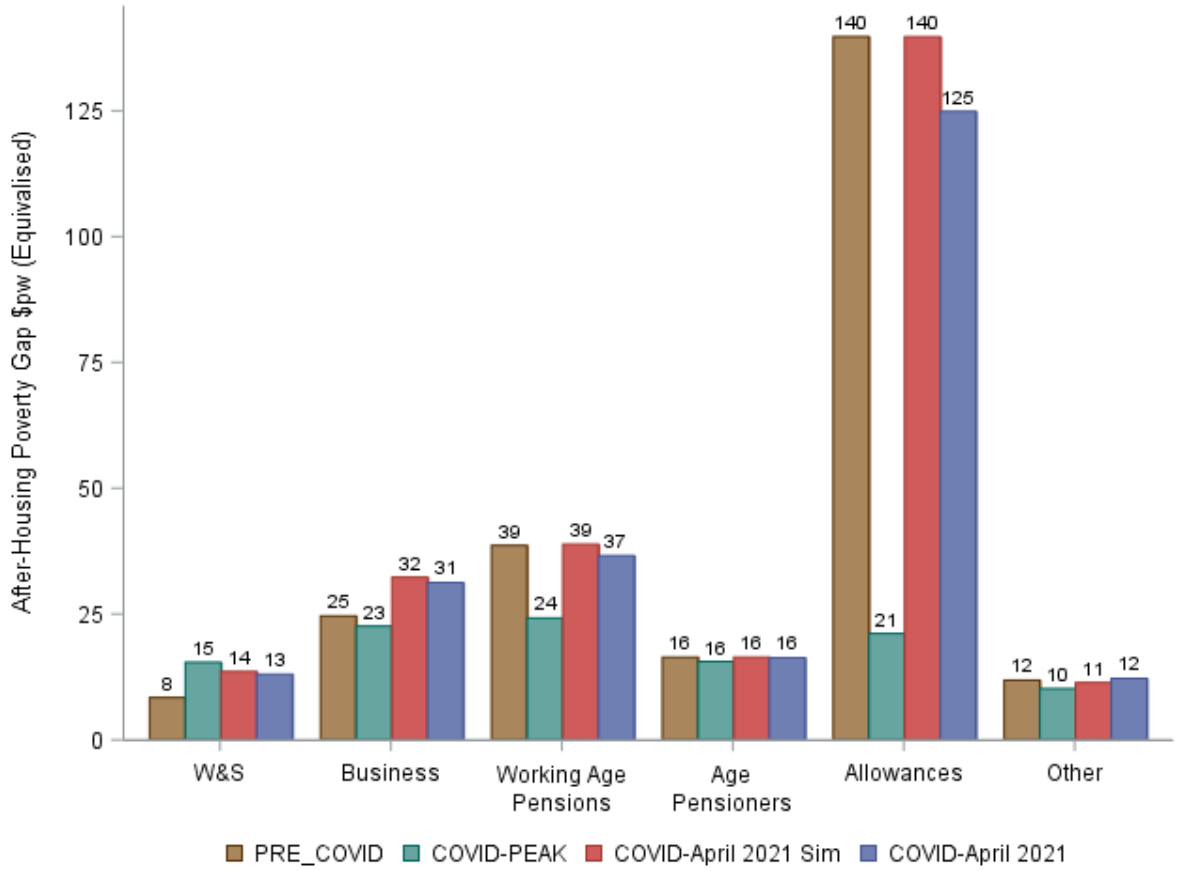
higher than COVID-peak rates. The poverty gap increases by 14 per cent to $19.5 per week and the child poverty rate will increase by 3.1 percentage points from the pre-COVID period to 18.7 per cent or 748,000 children. Had the government not increased JobSeeker rates by $50 per fortnight, poverty would have increased moderately higher. The poverty rate would be 17.2 per cent and the child poverty rate would be 1 percentage point higher at 19.7 per cent or 788,000 children under the age of 15.

In the remainder of this section we consider the impacts of policy and economic changes through COVID-19 for a selection of different demographic and socio-economic groups.

Figure 14 shows the dramatic impact of the COVID-19 supplement on those households most likely to receive the payment. For allowance households (JobSeeker) the increased payment led to a dramatic fall in the poverty gap from around $140 per week (on a per adult or equivalised basis) to just $21 per week. Some of the payment also went to those on working age payments (parenting payment) which led to some reduction in the poverty gap for these households. A modest increase in the poverty gap (from a very low base) for households with wages and salaries was likely due to some of these households shifting to other sources of income, most likely JobKeeper and to a lesser extent JobSeeker. For some of these households this would mean a reduction in income. This is a very significant outcome that during a global pandemic and domestic economic recession poverty gaps were reduced. This is entirely due to the significant increase in the JobSeeker and the level of JobKeeper both being well above the relative poverty line during the period considered in this study.

The $50 per fortnight increase in the payment which has been legislated for payments beyond the end of March 2021 increases the poverty gap for allowance households from $21 per week during COVID-19 to on average $125 per week. This represents a slight decrease from the pre-covid poverty rate of $140 per week. This indicates that a significant reduction in the poverty gap requires a much more significant payment increase that the $50 per fortnight increase.

Figure 14: After-Housing Poverty Gap, Main Source of Income



A similar story occurs for the poverty rate, with a very significant fall in the poverty rate for allowance households. The poverty rate for allowance households falls from 88 per cent to 26 per cent at the peak of COVID-19 in June 2020. The $50 per fortnight increase set for beyond late March significantly increases the poverty rate again to 85 per cent.

Figure 15: After-Housing Poverty Rate, Main Source of Income

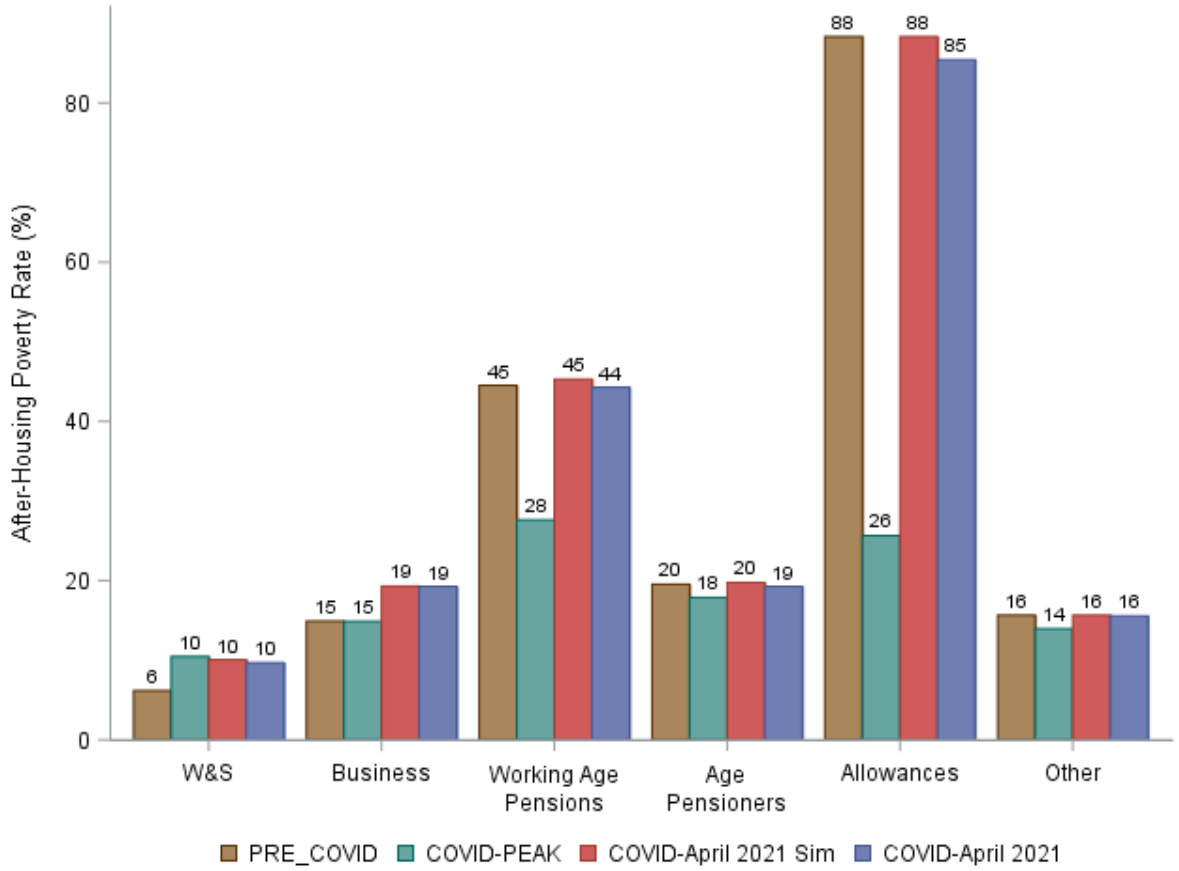
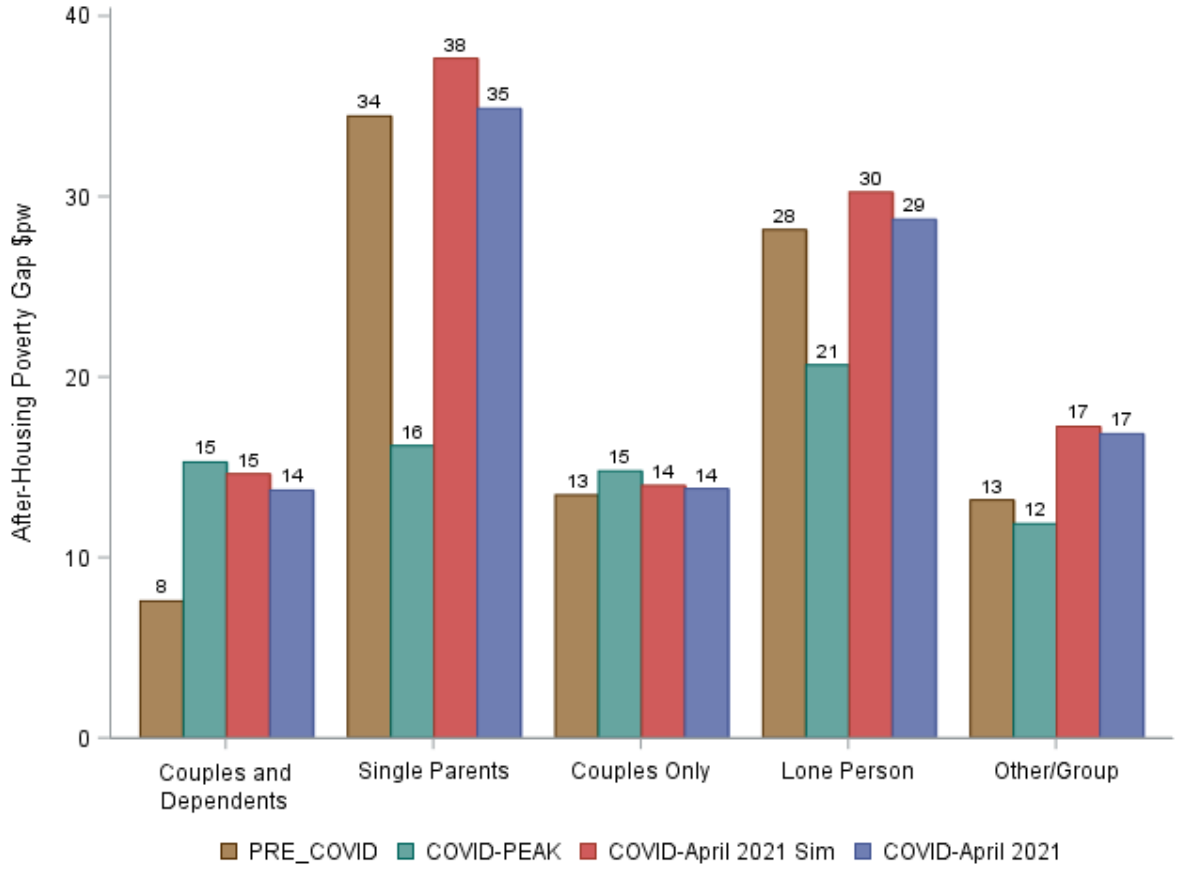


Figure 16 shows that the poverty gap lowered significantly for single parents during COVID-19. The COVID-19 supplement was extended to single parents both on the JobSeeker payment and the parenting payment single payment. The reduction was so significant that the poverty gap for single parents was actually lower than that of couple families with children at June 2020. The COVID-19 supplement is also estimated to have significantly lowered the poverty gap for lone persons. For couples and couples with children we estimate that the poverty gaps were increased modestly. This would be due to any benefits, whether JobSeeker or JobKeeper, their disposable income actually lowered in the case where they transition from employment to these payments. As we transition out of COVID-19 we estimate for April that poverty gaps return for pre-COVID levels for lone persons and single parents and are increased for couples and couple families with children.

Figure 16: After-Housing Poverty Gap, Family Type



The poverty rate for children in Figure 17 shows a similar pattern to that for the poverty gap displayed in Figure 16. The rate of poverty for children is significantly lower in single parent households due to the COVID supplement. The poverty rate is reduced to 17 per cent at the peak of COVID-19 in June 2020 where it was 39 per cent prior to COVID. By April with the COVID-19 supplement and JobKeeper removed, the poverty rate for children returns to 41 per cent which is slightly above pre-COVID rates. The driver of is the expectation of slightly lower employment rates and that JobSeeker will only be $50 per fortnight higher than pre-COVID levels.

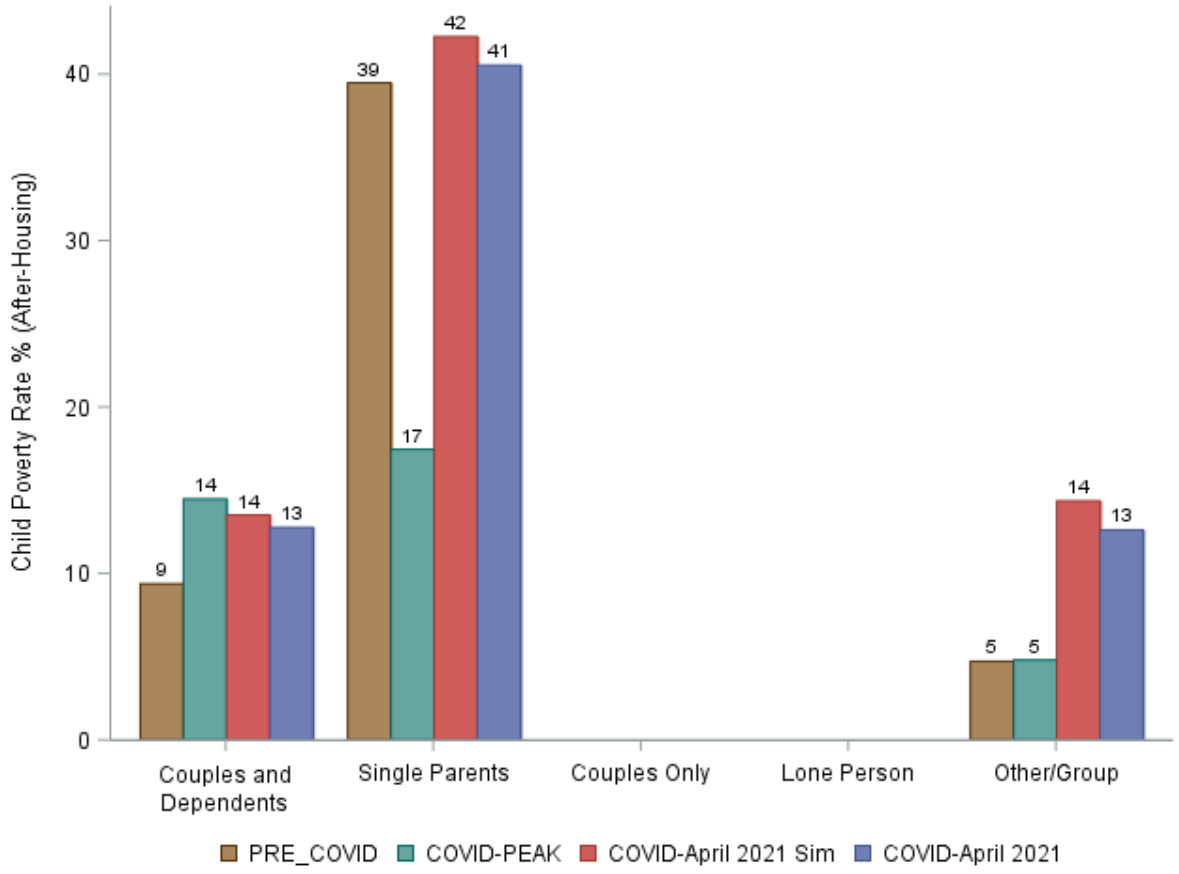
The impacts are very different between single and couple families with children, depending on the age of the youngest child. The child poverty rate for single parents with at least one child under 5 is expected to increase from a low during the peak of COVID-19 (June 2020) of 12 per cent to 46 per cent by April 2021. For those with older children, the June 2020 low of 21 per cent increases to 37 per cent by April 2021.

Couple families with children are less impacted by COVID-19 with respect to changes in the Coronavirus Supplement and more impacted through changes in economic circumstance. For couple families with children it is also the case that poverty rates for both all persons and children are higher for those families with younger children. Tougher economic conditions have impacted families with younger children more so than those with older children. Pre-COVID poverty rates for couples with children were modestly higher for younger families (9.4

compared to 9.0 per cent for older families). Child poverty rates were higher for couple families with children under 5 at 10.4 per cent compared to 8 per cent for older child families.

We estimate that by April the all person poverty rate will be 13.6 per cent for younger child families and 11 per cent for older children families. Child poverty rates will also be higher for younger child families at 14.5 per cent compared to 10.3 per cent for older children families.

Figure 17: After-Housing Poverty Rate for children, Family Type



4 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 expand upon earlier research that focused on the poverty gap and use measures of financial stress rather than the poverty gap. We also place a stronger emphasis on the politically possible by focussing on options that don't include reductions in payments.

In this paper, we describe the results of a new methodology and modelling tool for optimising the social security system to achieve a particular outcome. The illustrative case used is minimising financial stress and poverty. We do this by using a microsimulation approach that involves altering welfare payments (or other parameters) to minimise financial stress, 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. For developing our algorithm we have chosen to develop a measure that we believe provides a reasonable indicator of deep stress. This measure is the count of financial stressors faced by a household squared. We square the response so as to place more emphasis on households in deep stress. We limit the stress questions included in our study to the 8 that are most likely to represent deeper forms of stress, excluding the management of household income question. These are included in Appendix 1. 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 we develop an econometric model that links income and financial stress. In simple terms, we use 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 we can estimate the impact of changing social security payments for a given household on their financial stress level[16]. The modelling approach adopted is similar to that taken by Bray (2001) but with a more extensive range of variables including wealth and

interaction terms between our income and wealth measures and demographic variables. Our key interest was 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. We anticipated the inclusion of such terms will provide better estimates of the link between income and financial stress for such families.

A complexity arises in that financial stress is a squared count variable and most households record a 'zero' for the number of stress responses. The standard linear model violates the assumption of normality of error terms in this situation and we therefore employ a negative binomial regression model which is a standard approach to use where using 'count' data with a large number of zero responses. A number of other potential modelling approaches were tried such as the 'zero-inflated' negative binomial and the poisson regression. Neither of these approaches appeared to greatly alter the results of our modelling. Appendix 2 provides the regression parameters for the model used.

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. Our 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, 1000 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 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. The social security system also has important impacts on work incentives (e.g. effective marginal tax rates), income inequality and horizontal equity. The results of our research should be taken with this limitation in mind. With that said, social security payments ideally at least should provide a social safety net where limiting deep financial stress is a priority.

An expected benefit of modelling social security payments based on financial stress rather than 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. A relative poverty measure is blind to these issues.

4.1 Financial Stress Optimal Policy Modelling Results

Key findings

- Increasing social security budgets by up to 20 per cent results in strong reductions in poverty and financial stress for spending targeted towards to allowances and working age pensions.
- Increasing overall social security spending by 10 per cent (resulting in a JobSeeker rate of around $1000 per fortnight or $380 per fortnight increase), would lower the poverty rate of households on allowances by almost half, from 88 per cent to 34 per cent and lower financial stress by almost 16 per cent
- A 20 per cent increase in overall social security spending would increase JobSeeker payments by $460 per fortnight and ensure around 3 out of 4 allowance households and 9 out of 10 working age pension households were not living in poverty

To understand the potential financial stress reductions and the optimal payment levels associated with such reduction we model 4 separate scenarios for social security expenditure. We model a 5, 10, 20 and 40 percent increase to the system. The current system roughly involves $120 billion a year in spending on the major payments. The payments we consider including the following:

a) Age Pension
b) Working Age Payments - Disability Support Pension (DSP), Carer Payment and Parenting Payment Single (PPS)[17]
c) JobSeeker Payment
d) Family Payments
e) Childcare Subsidy
f) Rent Assistance

Figure 18 shows the possible reductions in financial stress by using an optimal policy modelling approach to allocate payments for our simulated increases in social security

budget. We estimate a 10 per cent increase in the budget would lower financial stress for allowance households by about 16 per cent. Gains in other types of households are more limited as optimal policy modelling directs most of the additional 10 percentage points of spending to allowances, with Working Age Pensions also increased. A 40 per cent increase in spending lowers allowance household stress by 21.2 per cent and lowers working age payment household stress by 22.6 per cent.

Figure 18: Financial Stress Count, Main Source of Income

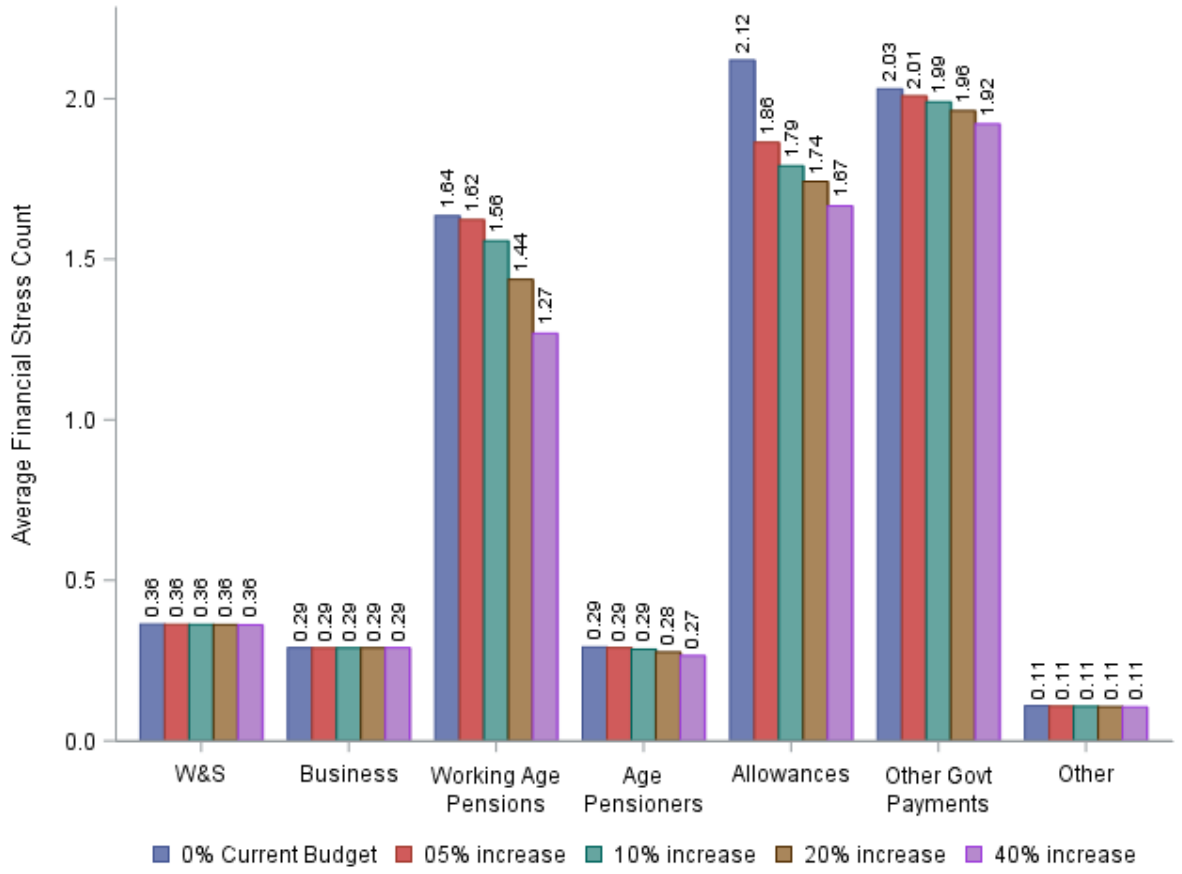


Figure 19: After-Housing Poverty Rate, Main Source of Income

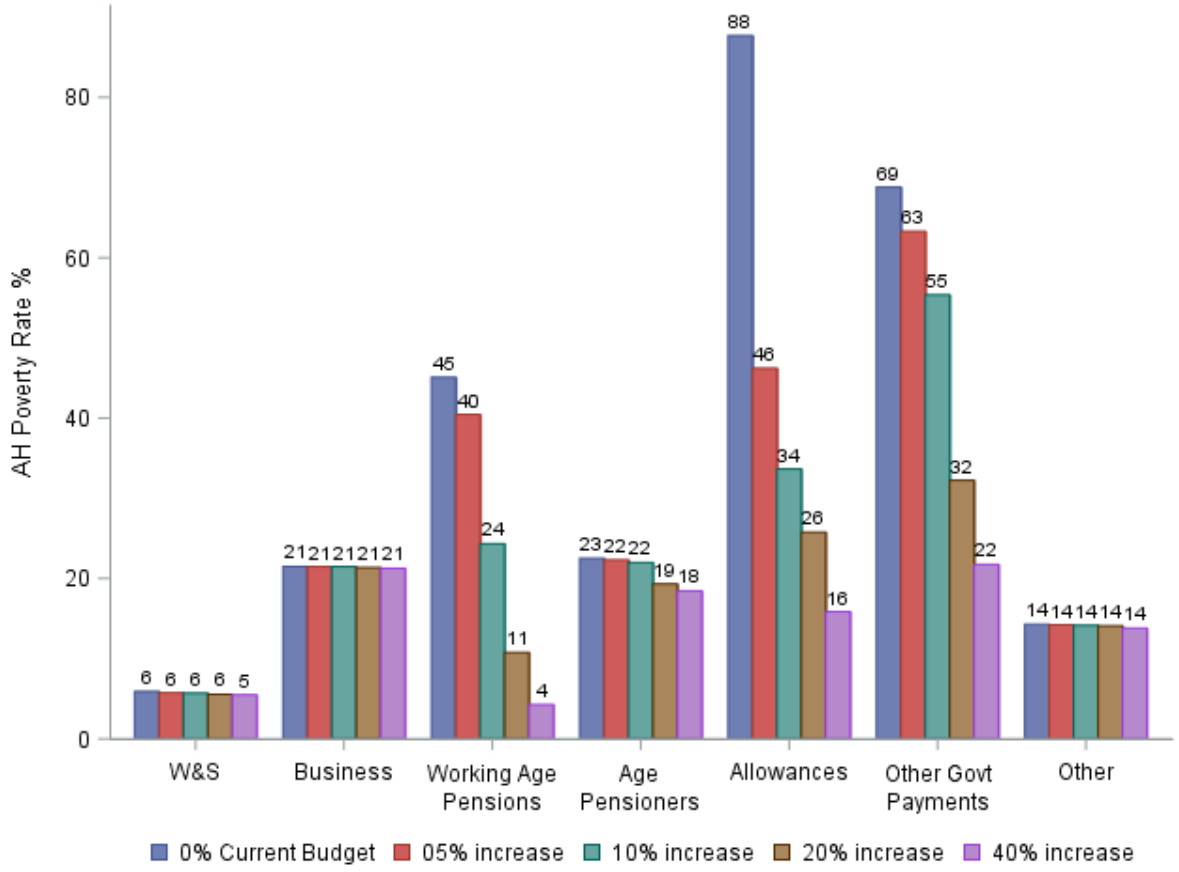


Figure 19 shows a more impressive reduction for the poverty rate. Allowance household poverty rate lowers from 88 per cent to 34 per cent with just a 10 percentage point increase in payments or overall spending increase of $12 billion. A 20 per cent increase in payments lowers the poverty rate to just 26 per cent. Likewise, working age pensioners would enjoy very large reductions in poverty.

The optimal policy modelling directs most additional funding to allowances and working age pensions. These are also the households we know from previous sections that have by far the highest rates of financial stress and poverty. Figure 20 shows the comparison of current rates with optimal policy rates for each major payment type. Table 3 shows the same information but only for our selected budget changes. We exclude the age pension, family payments and child care as all remain at current values regardless of budget change modelled.

Table 3: Current (Pre-COVID December 2019) vs Optimal Policy Settings by change in social security budget (including supplements)

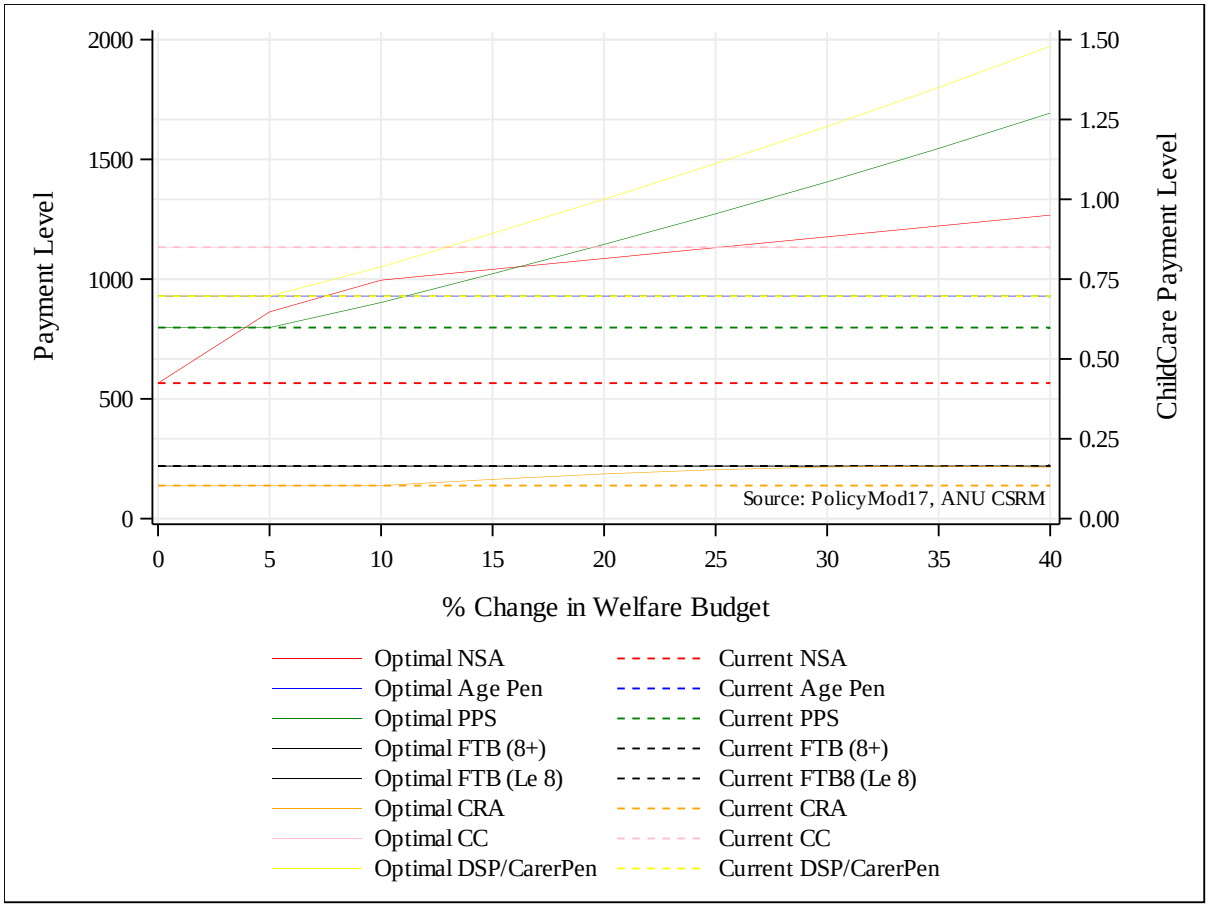
Overall Social Security Budget	JobSeeker $pf	Disability/Carer Pension $pf	Parenting Payment $pf	Rent Assistance $pf
Dec 2019 rate	*566*	*929*	*798*	*138*
+5%	863	929	798	138
+10%	996	1051	902	138
+20%	1086	1334	1145	187
+40%	1267	1972	1693	215
April 2021 Rate	*620*	*953*	*850*	*141*

Note: Payments that were not increased in the optimal policy modelling scenarios are excluded. These include Age Pension, Family Payments and the Childcare Subsidy. Parenting Payment rates include the Pension Supplement, which is also included in the Disability Support and Carer Pension rates in addition to the energy supplement.

The modelling shows that if your only interest was lowering financial stress then increases in the social security payments are best directed at working age payments. The age pension and family payments would not be increased. In Figure 20 we also split family payments into payments to families with younger and older children (split at age 8 for youngest child)[18]. While the younger children do have higher financial stress rates the modelling would suggest the better way to lower financial stress for children with families is through the parenting payment which is directed at single parent families with at least one child under the age of 8. The modelling does also suggest increasing rent assistance, however, only once the budget is increased by more than 10 per cent.

Figure 20 shows that for a 5 per cent budget increase the JobSeeker payment would be increased to $863 per fortnight (from a December 2020 payment of $565), while JobSeeker would increase to around $1000 per fortnight given a 10 per cent increase. A 20 per cent budget increase would see that increase $1086 per fortnight and a 40 per cent budget increase would increase the payment to $1267 per fortnight. Similarly, a 5 per cent budget increase would add nothing to all the other payments with all additional money be directed firstly to JobSeeker. A 10 per cent budget increase would however see DSP increase from it's current level of $929 to $1050 per fortnight. Parenting Payment would also increase from $797 to $902 per fortnight. A 40 per cent budget increase would see a dramatic increase in working age payments with Parenting Payment increasing to $1693 and DSP increasing to $1972 per fortnight.

Figure 20: Optimal Policy Modelling payment rates



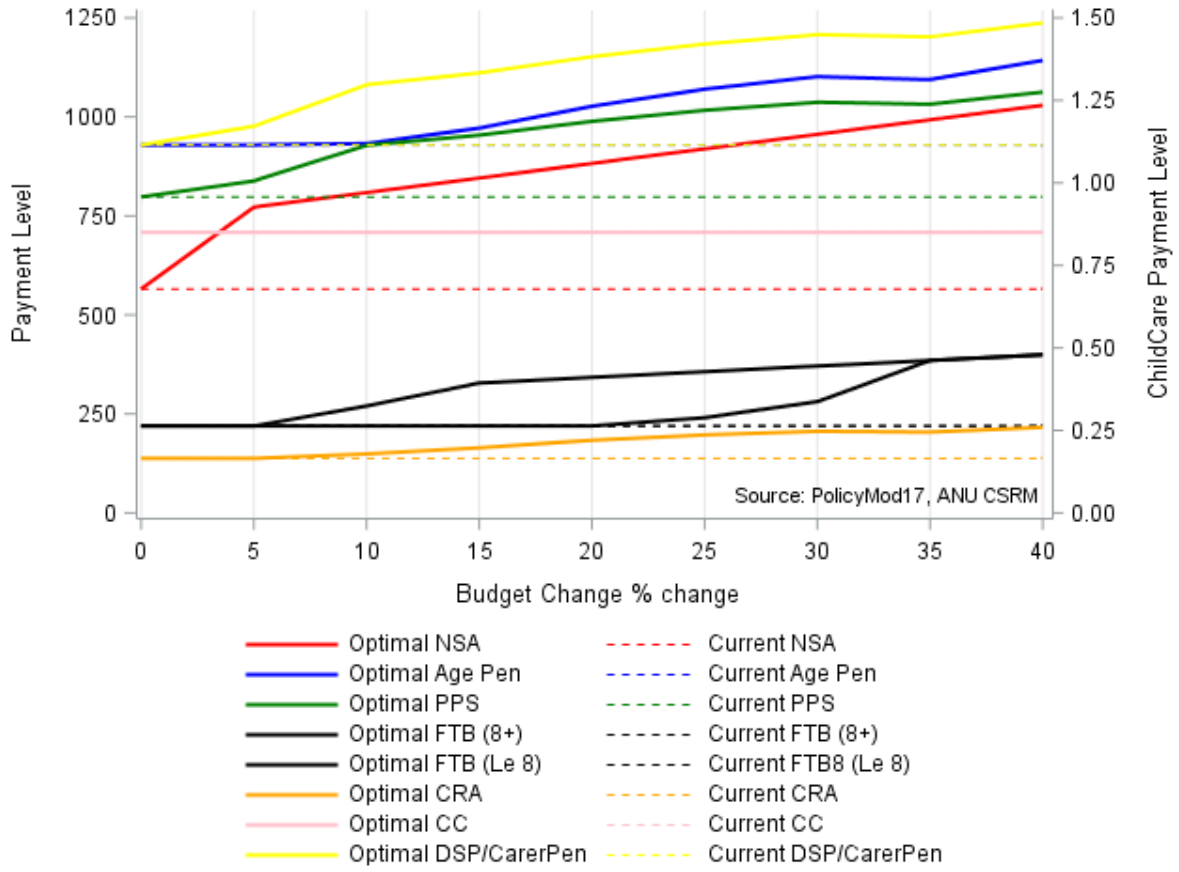
The optimal policy modelling demonstrated above provides plenty of scope for individual payments to increase significantly. Given the quite extreme differences in financial stress for certain payment types such as allowance and working age payments the modelling does direct the vast majority of money to these payment types. The modelling can be adjusted to not allow such large increases and the expected result would be that other payments would naturally increase. There would still be reductions in modelled financial stress, however, the reduction would be modestly smaller.

Figure 21 shows a more restricted version of optimal policy modelling where instead of allowing individual payments to increase by up to 60 per cent beyond current levels on top of the budget increase the payment can only increase by 30 per cent. Under this condition working age payments are more constrained in their increase and other payments such as family payments (particularly for younger families) are shown to increase at much lower budget increase levels. The Age Pension and rent assistance would both be lifted from 10 and 15 per cent budget increase points. The only payment not to be increased is childcare. It's useful to remember that childcare is not strictly speaking a payment that is meant to act as a safety net. The childcare subsidy is designed to assist in the cost of childcare principally (but not solely) to assist secondary earners return to work.

Under this more restricted modelling the budget increase allows for additional funding to be spread a little more evenly across the payments. This will mean that the overall level of

financial stress will not be lowered by the same extent as the previous modelling, however it does mean that a wider group of households would benefit from lower financial stress. The modelling for the maximum budget increase of 40 per cent only increases DEP to $1237 and JobSeeker increases to $1029 per fortnight. We do estimate an increase to family payments (both younger and older versions) to 82 per cent beyond current levels. Rent assistance increases by a similar 81 per cent. The Age pension increases by a more modest 12 per cent. Again, childcare subsidy is unchanged.

Figure 21: Optimal Policy Modelling payment rates – less flexible



The optimal modelling discussed above has considerable flexibility and as such does not necessarily provide a single 'perfect' solution. The modelling is best used to assist policymakers to better understand the relative needs of different household types, particularly those who interact with the social security system.

In summary, the results show that the households with the most financial stress are those mostly reliant on working age payments – either pensions or allowances. Regardless of the budget increase modelled these are the payments where directing more cash assistance provides the largest reductions to financial stress. The results also tend to suggest that the families who would gain the most from greater financial assistance tend to be singles – either single parents or lone persons. Payments that target these families are most likely to have the most benefit in terms of lowering both financial stress and poverty in Australia.

5. Summary and concluding comments

Financial stress has lowered for Australians since 1998. This stress has lowered across the income distribution as it has for many other variables we have considered such as region, tenure type and family. The likely driver of such reductions has been the strong growth of the Australian economy through recent decades However, those receiving working age social security payments such as the disability support pension, Carer Payment, Parenting Payment and JobSeeker have been left behind. Their financial stress has worsened through Australia's long economic boom of the last 30 years.

Changes in poverty and the poverty gap have shown no clear pattern but there appears to be some modest increases in poverty for all persons and some more significant increases in child poverty. The poverty gap has increased in real terms. This means that it's not clear that the poverty rate has gotten worse but it is clear that those in poverty have fallen further behind.

Child poverty rates have increased from 13.9 per cent in 1993 to 17.5 per cent by 2017 meaning that around 789,000 children under the age of 15 (more than one in six) are in poverty.

The group with the most concerning increases in both poverty and financial stress are those persons heavily reliant upon working age social security payments. Severe stress rates are both much higher for these household types compared to any other category considered in the research, with 37 per cent of allowance households in severe financial stress in 2015, compared with 25 per cent in 1998.

Working age payment poverty rates and poverty gaps have also increased dramatically with allowance household poverty rates increasing from 25 per cent to 66 per cent between 1993 and 2017. Their poverty gap has increased from $30 per week to $126 per week on a single adult basis in 2017 dollars. Those on working age pensions also are estimated to have very high and increasing rates of poverty and financial stress.

Poverty and financial stress are much higher for single parents than other family types. A single parent family is estimated to have severe financial stress rates nearly 8 times that of a couple family with children. Likewise, their poverty rates are 31 per cent compared to 12 per cent for couple families.

Financial stress and poverty rates are much higher for single adult households compared to couple households. This holds for whether the households have children or not.

We estimate a strong relationship between income and stress. High income households have a 1 per cent change of severe stress while for low income households that increases to around 15 per cent.

Single parent financial stress is dramatically higher for low income families than other low income families indicating greater need for a given income. Middle income single parents face higher stress rates than low income non-single parent families.

We find that both couple and single parent families with children have higher rates of financial stress and poverty (both persons and child) where the youngest child is under the

age of 5. Families with the youngest child over the age of 5 have lower rates and this is expected to be caused by greater employment opportunities for the parents as children progress to school.

Renter households face much higher stress than home owners. We also find that renters in regional areas face higher stress than those in capital cities. Sydney has the lowest state capital city stress rate.

Through COVID-19 there was a very significant drop in poverty rates (both all person and child poverty rates) and poverty gaps for those households previously on welfare payments thanks to the COVID-19 supplement.

While the overall rate of poverty declined from 14.4 to 13.7 per cent the rate for allowance households fell from 88 per cent to 26 per cent at the peak of COVID-19 in June 2020. For working age pension households the rate fell from 45 to 28 per cent. The COVID-19 supplement was directed at allowance households and some working age pension households on parenting payment.

At the peak of COVID-19 in Australia (June 2020) poverty rates and gaps also declined substantially for those family types identified earlier as most at risk of poverty and financial stress. Single parent poverty dropped from 34 per cent to 16 per cent and lone person rate fell from 28 to 21 per cent. Some other household types such as couples and couples with kids did have some increase in poverty due to income falling from employment and JobKeeper and or JobSeeker not fully compensating.

For those family and household types most impacted by COVID-19, poverty rates largely returned to previous levels as social security payments returned to pre-COVID rates. The $50 pf increase to JobSeeker from April is expected to have a negligible impact in lowering poverty.

Optimal Policy Modelling using financial stress as the objective to be minimised can be a useful way to better understand the relative needs of different household types. A simple poverty analysis assumes that all households of a certain number of adults and children have the same financial needs. We show that to lower financial stress any additional expenditure is best directed towards working age social security recipients which includes those receiving DSP, Carer Payment, Parenting Payment and JobSeeker.

Payments such as the Age Pensions, family payments, rent assistance and childcare tend to have relatively less impact on financial stress and as such our modelling requires more significant budget increases before directing additional money to those payments.

The potential reductions to financial stress from increasing social security payments is reasonably modest but we estimate for the payment types with most stress (allowances and working age pension) a rough rule of thumb is that over the more modest budget increases of up to 20 per cent financial stress (count) can be lowered by a similar per cent. The impact on financial stress does diminish as expenditure is increased.

The impact on poverty is more substantial with working age payment households. A 20 per cent increase in spending on social security would lower the poverty rate for allowance households from 88 per cent to just 26 per cent and for working age pensions the reduction is from 45 per cent to11 per cent.

The finding that financial stress reductions are considerably smaller than those for the poverty measure is related to two related matters. The poverty line is an arbitrary figure and it is quite possible that only a small change in income can remove a household from poverty. This of course may not mean that a family no longer has any financial problems. Financial stress is more complex. A small increase in income may lower the probability of financial stress but it doesn't eliminate it. The financial stress in both modelled form and in reality is more complex as there are many more factors feeding into financial stress such as the level of wealth, whether a house is rented or owned or being purchased, the age of those persons in the household and so forth. Beyond that, there is considerable unexplained variation in financial stress. Some households have a greater ability to manage money. Some may naturally be more risk averse and there are many other factors driving financial stress that have not or cannot be modelled.

Optimal policy modelling to some extent is best at showing where priorities lie as opposed to being definitive about what rates different payments should be. It is quite clear that whether the goal is reducing financial stress or poverty, the first priorities for lowering financial stress and poverty are the payments received by working age persons. The disability support payment, carer payment, parenting payment and those on JobSeeker. Their current payment levels are, at least with respect to financial stress and poverty either much lower than other payments (JobSeeker) or even where they are the same or similar to the Age Pension our modelling suggests that their needs are greater than other beneficiary types.

Our modelling does not mean that increasing other payments, such as the age pension or family payments or childcare subsidies, will not lower financial stress or poverty. Increasing these payments would indeed lower financial stress and poverty. It is just that in relative terms their needs are not quite as significant and that additional spending won't lower financial stress or poverty quite as much on a dollar for dollar basis.

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Appendix 1 – Financial Stress Measures

Financial Stress Measures, ABS Household Expenditure Survey 1998, 2003, 2009, 2015	
1.	Assistance sought from welfare/community organisations due to shortage of money
2.	Pawned or sold something due to shortage of money
3.	Sought financial help from friends/family due to a shortage of money
4.	Unable to heat home due to shortage of money
5.	Went without meals due to shortage of money
6.	Whether could not pay gas/electricity/telephone bill on time due to shortage of money
7.	Whether could not pay registration/insurance on time due to shortage of money
8.	Ability of household to raise emergency money ($2000 dollars)

Appendix 2 – Financial Stress Regression Parameters for Count Model

Parameter	Category	DF	Estimate	Pr > ChiSq
Intercept		1	5.54	0.01
Log Disposable Income		1	-0.02	0.95
Log Net Wealth		1	-0.52	<.0001
Log Household Size		1	0.43	<.0001
Head Employed FT		1	4.98	<.0001
Head Employed PT		1	2.24	0.01
Head Unemployed		1	-0.80	0.32
Head NILF		0	0.00	.
Family with children		1	-1.86	0.07
Age of Head, no children	<35	1	-1.08	0.28
Age of Head, no children	<50	1	0.36	0.71
Age of Head, no children	<65	1	0.45	0.63
Age of Head, no children	<75	1	0.61	0.37
Age of Head, no children	75+	0	0.00	.
Main Source of Income	Wage	1	-3.45	0.03
Main Source of Income	Business	1	-4.05	0.06
Main Source of Income	Working Age Pensions	1	-0.90	0.58
Main Source of Income	Age pension	1	2.75	0.15
Main Source of Income	Allowance	1	-1.91	0.26
Main Source of Income	Other Government	1	-1.87	0.30
Main Source of Income	Other Income	0	0.00	.
Family type by Income	Couple with children	1	-0.02	0.04
Family type by Income	Single Parent	1	0.03	0.00
Family type by Income	Couple Only	1	-0.31	0.00
Family type by Income	L:one Person	1	-0.29	0.00
Family type by Income	Other	0	0.00	.

Tenure By Income	Own Outright	1	-0.06	0.00
Tenure By Income	Purchasing	1	0.04	0.01
Tenure By Income	Renter	1	0.05	0.00
Tenure By Income	Other	0	0.00	.
Income Source by Income	Wage	1	0.66	0.01
Income Source by Income	Business	1	0.88	0.00
Income Source by Income	Working Age Pensions	1	0.07	0.78
Income Source by Income	Age pension	1	-0.55	0.05
Income Source by Income	Allowance	1	0.23	0.37
Income Source by Income	Other Government	1	0.21	0.44
Income Source by Income	Other Income	0	0.00	.
Employment Status by Income	Head Employed FT	1	-0.75	<.0001
Employment Status by Income	Head Employed PT	1	-0.34	0.00
Employment Status by Income	Head Unemployed	1	0.16	0.22
Employment Status by Income	Head NILF	0	0.00	.
Age by Wealth	Family with children	1	0.11	0.16
Age by Wealth	<35	1	0.20	0.02
Age by Wealth	<50	1	0.11	0.19
Age by Wealth	<65	1	0.08	0.31
Age by Wealth	<75	1	0.00	0.95
Age by Wealth	75+	0	0.00	.
Source of Income by Wealth	Wage	1	-0.07	0.36
Source of Income by Wealth	Business	1	-0.16	0.13
Source of Income by Wealth	Working Age Pensions	1	0.10	0.16
Source of Income by Wealth	Age pension	1	0.11	0.20
Source of Income by Wealth	Allowance	1	0.11	0.14
Source of Income by Wealth	Other Government	1	0.10	0.20
Source of Income by Wealth	Other Income	0	0.00	.
Sex of Head by Income	Male	1	-0.02	0.00
Sex of Head by Income	Female	0	0.00	.
State	NSW	1	2.57	0.04
State	VIC	1	1.36	0.28
State	QLD	1	2.44	0.06
State	SA	1	2.54	0.05
State	WA	1	1.79	0.17
State	TAS	1	0.32	0.81
State	NT	1	-0.74	0.68
State	ACT	0	0.00	.
Region	Capital City	1	-2.04	<.0001

Region	Rest of State	0	0.00	.
State by Income	NSW	1	-0.61	0.01
State by Income	VIC	1	-0.47	0.04
State by Income	QLD	1	-0.51	0.03
State by Income	SA	1	-0.46	0.05
State by Income	WA	1	-0.44	0.06
State by Income	TAS	1	-0.08	0.72
State by Income	NT	1	-0.45	0.11
State by Income	ACT	0	0.00	.
region by Income	Capital City	1	0.16	0.02
region by Income	Rest of State	0	0.00	.
State by Wealth	NSW	1	0.16	0.04
State by Wealth	VIC	1	0.18	0.03
State by Wealth	QLD	1	0.10	0.20
State by Wealth	SA	1	0.07	0.41
State by Wealth	WA	1	0.13	0.12
State by Wealth	TAS	1	0.05	0.54
State by Wealth	NT	1	0.32	0.00
State by Wealth	ACT	0	0.00	.
Region by Wealth	Capital City	1	0.08	0.00
Region by Wealth	Rest of State	0	0.00	.
Higher Education of Head	University	1	1.44	0.01
Education by Income	University	1	-0.27	0.00

Endnotes

1 Poverty rates are calculated based on ABS income survey data between 1993 and 2017. Financial stress data is only available for household expenditure survey data from 1998 to 2015.
2 More detail is provided in Appendix 1 for the financial stress variable definitions.
3 The poverty line used is based on the PolicyMod basefile for 2020-21 using the pre-COVID-19 version of the model and is thus held constant for all of the scenarios modelled in this paper.
While the poverty rate is quite low for wage and salary households they still make up around 40 per cent of households in poverty due to being the most numerous type of household.
5 This includes the COVID-19 Supplement ($16.8 billion), the JobSeeker Partner Income Test measure ($2.0 billion) and the two $750 Economic Support Payments to social security, veteran and other income support recipients and eligible concession card holders ($9.4 billion).
6 In order to be an eligible employer the business must be a business or not for profit organisations and to have experienced a substantial decline in turnover. The required reduction in turnover is 30% for businesses with turnover of $1 billion or less, 50% for businesses with turnover of more than $1 billion and 15% for registered charities. Ineligible employer categories include Australian government agencies, local governing bodies, and entities wholly owned by an Australian Government agency or local governing body.
7 Long-term casuals are people who have been employed on a regular and systematic basis over a 12-month period and who are not a permanent employee of any other employer. Employees also need to be an Australian resident with the meaning of the Social Security Act 1991 or the Income Tax assessment Act 1936 and the holder of a Subclass 444 (Special Category) visa.
8 Sole traders may be eligible for the JobKeeper scheme if their business experienced a downturn that meets the eligibility criteria.
9 Various changes have been made in order to make it easier for people to access income support payments or to relax means testing of benefits. Until 24 September 2020 the asset means test has been suspended as has the Liquid Assets Waiting Period. From 25 September 2020 these meant tests will be reinstated. The Ordinary Waiting Period for eligibility for income support payments have been waived until 31 December 2020. Job seekers' mutual obligation requirements were suspended from 24 march to 8 June 2020. Mutual obligation requirements have been progressively reintroduced since 9 June and from 4 August job seekers mutual obligation requirements have been largely reintroduced but no payment suspensions or financial penalties are being applied (expect of a job seeker refuses an offer of suitable employment).
10 The COVID-19 supplement is also paid to those receiving Austudy, ABSTUDY (Living Allowance), Farm Household Allowance, Special Benefit or Department of Veteran's Affairs Education Scheme and the Eligible New Enterprise Incentive Scheme participant.
11 The 100,000 figure is at the lower end of the Treasury forecast for between 100,000 and 150,000 persons to transition from JobKeeper to JobSeeker at the conclusion of the JobKeeper payment at the end of March 2021. There are some additional complexities around income testing changes that have not been modelled here.
12 It is not clear whether the JobKeeper payment is classed as a social security payment as the payment was paid to the employer, however, the payment was used to fully or partially pay worker wages.
13 Our modelling adds the JobSeeker Coronavirus Supplement to The JobSeeker payments including Youth Allowance, Parenting Payment and the old Newstart Allowance payment.
14 A screening question was first asked: 'Which of these descriptions applies to what you have been doing for the last 7 days?' with the first option being 'In paid work (or away temporarily) (employee, self-employed, working for your family business).' Respondents were then asked one of two additional questions, depending on their response to the employment question, and using the same introductory statement: 'We would now like to ask you about whether you have received any of the Government stimulus payments or benefits in response to COVID-19.' For those who said they were employed, we asked 'Are you currently receiving the $1500 JobKeeper payment from your employer?'. For those who were not employed, we asked 'Are you currently receiving the temporary $550 supplement per fortnight that was made available for eligible income support recipients?'
15 At the time of writing this paper the August 2020 ANUpoll was still in the field. The analysis is based on a sample of 1,904 individuals out of an expected full sample of about 3,100, weighted based on their February 2020 population weights. The vast majority of respondents complete online, with a small proportion of respondents enumerated over the phone in order to ensure that the sample is representative of the offline population.

16 The econometric modelling of financial stress is complex. It is possible that the estimated equation may suffer from unobserved heterogeneity (differences). To the extent that these, or any other omitted variables, are correlated with income this will bias the results. Further modelling using a longitudinal data set such as HILDA, may allow for such factors to be controlled for or reduced.
17 Due to the relatively small PPS and Care Payment population and sample size in PolicyMod we included PPS and Carer Payment into a single working age payment. Any increase or decrease in their optimal payment will be applied to their current respective level.
18 The split at age 8 was made to line up with the shift from parenting payment to NewStart for single parents. We also used this split to ensure a reasonable sample size for the optimal policy modelling algorithm.