Australian Government

Productivity Commission

Superannuation:
Assessing Efficiency
and Competitiveness

Supplementary Paper –
Fiscal impacts of insurance
in superannuation

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The Productivity Commission

The Productivity Commission is the Australian Government's independent research and advisory body on a range of economic, social and environmental issues affecting the welfare of Australians. Its role, expressed most simply, is to help governments make better policies, in the long term interest of the Australian community.

The Commission's independence is underpinned by an Act of Parliament. Its processes and outputs are open to public scrutiny and are driven by concern for the wellbeing of the community as a whole.

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Fiscal impacts of insurance in superannuation

Key points

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- Previous modelling undertaken by others of the fiscal impacts of insurance in superannuation has abstracted from longer-term fiscal costs, in particular the impact on Age Pension reliance.

- The Commission has undertaken cameo modelling to explore the fiscal impacts of insurance in superannuation (including the impact on Age Pension outlays) for different member cohorts. The Commission has not estimated the total net fiscal impact of default insurance in superannuation.

- The Commission's modelling suggests that:

  - the fiscal cost of insurance from increased Age Pension payments (arising from the erosion of superannuation balances) is likely to be material for some cohorts. This casts doubt on the earlier estimates of others of a net fiscal benefit of insurance in superannuation

  - single individuals with Income Protection (IP) insurance are the cohort that is most likely to generate a net fiscal benefit to government (the absolute fiscal impact will be constrained by the relatively low incidence of IP insurance (at 30 per cent of default member accounts) at a national level).

- Net fiscal impacts are only one component of a broader assessment of the total net benefits of insurance in superannuation.

  - In its draft report, the Commission made a number of recommendations to improve insurance arrangements in superannuation, which are on the whole consistent with the Government's insurance measures announced in the 2018 Budget.

  - The Commission also proposed (by way of a draft recommendation) a future holistic and independent review of insurance in superannuation (after improved arrangements have been implemented), to assess the community-wide impacts of default insurance in superannuation and to consider if further regulatory intervention or policy change is required.

This is one of three supplementary papers the Commission is issuing following the May 2018 release of the draft report, *Superannuation: Assessing Efficiency and Competitiveness*. It also follows the receipt of post draft report submissions and public hearings by the Commission. The Commission's draft inquiry report included: a chapter (chapter 8), three draft findings (DFs 8.1–8.3) and six draft recommendations (DRs 14–19) on insurance in superannuation (box 1).

This paper advances the Commission's assessment of the fiscal impacts of insurance in superannuation, as required by the inquiry's terms of reference. The analysis in this paper was completed following the draft report's release. Given the Treasury's technical expertise in fiscal costings and retirement income modelling, the Treasury provided a technical peer review of this paper.

The paper will inform the Commission's final report (to be handed to Government by the end of 2018).

Box 1   Draft findings and recommendations on insurance

The Commission's draft report made a number of findings and recommendations on insurance in superannuation.

Draft findings

- The deduction of insurance premiums from superannuation accounts can have a material impact on member balances at retirement (DF 8.1).

- Default insurance in superannuation offers good value for many, but not for all members (DF 8.2).

- The fiscal effects of insurance in superannuation are complex, and the net effects are uncertain. Existing (public) fiscal estimates overestimate the net fiscal benefits as they do not consider the impact of balance erosion on Age Pension eligibility (DF 8.3).

Draft recommendations

- Make insurance for young members (aged under 25) opt in only, as young members rarely need life insurance (DR 14).

- Cessation of insurance on accounts without contributions for 13 months should be made mandatory, unless members expressly choose otherwise (DR 15).

- Require funds to publicly document rationales on the appropriateness of cover and the balance erosion trade-off (DR 16).

- Funds should adopt the industry code. Adoption of the code should be made a condition of offering MySuper (DR 17).

- ASIC/APRA taskforce to monitor code adoptions, compliance and development (including providing guidance). Industry should be allowed two years to make the 'bolstered' code binding and enforceable (DR 18).

- An independent review of insurance in superannuation should be commissioned within four years to evaluate initiatives to that date and consider further necessary policy intervention (DR 19).

Source: PC (2018, pp. 53–54, 62–64).

What does this paper cover?

The terms of reference for the *Superannuation: Assessing Efficiency and Competitiveness* inquiry ask the Commission to consider 'the extent to which current policy settings offset costs to government in the form of reduced social security payments'.

Modelling undertaken to date by others such as Rice Warner (sub. 46) and KPMG (2017) has focused on short-term impacts and abstracted from potential longer-term fiscal costs associated with insurance in superannuation (namely from increased Age Pension payments arising from lower superannuation balances).

The Commission has modelled a range of cameo scenarios for a current new workforce entrant to explore the potential fiscal impacts of insurance in superannuation across an individual's lifetime. The results of this analysis are heavily assumption-driven and thus should only be considered illustrative.

The Commission's analysis does not estimate a total net fiscal impact of insurance in superannuation. Aggregating cameo results to a total fiscal effect would require the development of forward-looking population projections related to income, marital status, homeownership, insurance coverage (including risk loadings) and claim rates. Such an exercise is both substantive in scope and hindered by the paucity of data in this area. The Commission's analysis presented in this paper addresses the requirement in the terms of reference to the extent feasible in the inquiry's (extended) timeframe and given the data available to the Commission.

Notably the Commission's analysis does suggest that the increase in Age Pension outlays due to the inclusion of insurance in superannuation are likely to be material for some cohorts, and that on a per-person basis, individuals with income protection (IP) insurance are more likely to provide a net fiscal benefit to government than individuals with total and permanent disability (TPD) insurance (though IP insurance is included in only one third of MySuper accounts, limiting the absolute fiscal impact).

While important to government and ultimately taxpayers, the net fiscal impacts of insurance in superannuation are not the sole nor primary rationale for improving the arrangements for insurance in superannuation. The Commission made a number of draft findings and draft recommendations designed to improve insurance arrangements in superannuation in its draft report (box 1), which was provided to the Australian Government on 30 April and released on 29 May 2018. As part of the 2018-19 Budget, the Government announced a number of proposed changes to the arrangements for insurance in superannuation. These measures are broadly in line with the Commission's draft recommendations.

Background

Default insurance in superannuation has resulted in broad coverage of the Australian population, but in some cases it can lead to the substantial erosion of members' superannuation savings when they retire (box 2).

Box 2   Key metrics on insurance in super

Footprint of insurance in super

Around 12 million Australians hold insurance — for life, total and permanent disability, and income protection — through their superannuation, with about 80 per cent of these policies provided automatically (requiring members to opt out or amend cover if it is unsuitable).

- About half of all superannuation accounts (and three quarters of MySuper accounts) have premiums deducted for one or more insurance products.

- Life insurance is the most commonly held insurance in superannuation, closely followed by TPD, with IP insurance held by a much smaller number of accounts (only 29 per cent of MySuper accounts include IP insurance).

- An estimated 17 per cent of members have more than one superannuation account with insurance cover.

The insurance premiums that superannuation members pay vary widely.

- Average premiums for automatically-provided default cover are about $300 per year, but can be as high as $2000 per year.

- Members subject to risk loading because they work in more manual or hazardous jobs pay more than white collar workers for equivalent levels of cover — about 20 to 40 per cent more for 'light' blue ratings, while 'heavy' blue products can be more than twice as expensive.

- Members with IP cover will also pay more on average than if their fund only includes life and TPD insurance.

- In total, premiums collected from insurance in superannuation increased by 35 per cent over the past three years to $9 billion in 2016-17 (including an estimated $1.9 billion on unintended duplicate policies).

Balance erosion can be substantial

The deduction of insurance premiums over a member's lifetime reduces their superannuation balance, resulting in less disposable income in retirement.

- Balance erosion can be excessive and highly regressive — having a disproportionate impact on members with low income, intermittent labour force attachment and/or multiple accounts with insurance.

- The reduction in retirement balances for many of these members could reach 14 per cent ($85 000), and for some disadvantaged members could be reduced by over a quarter ($125 000).
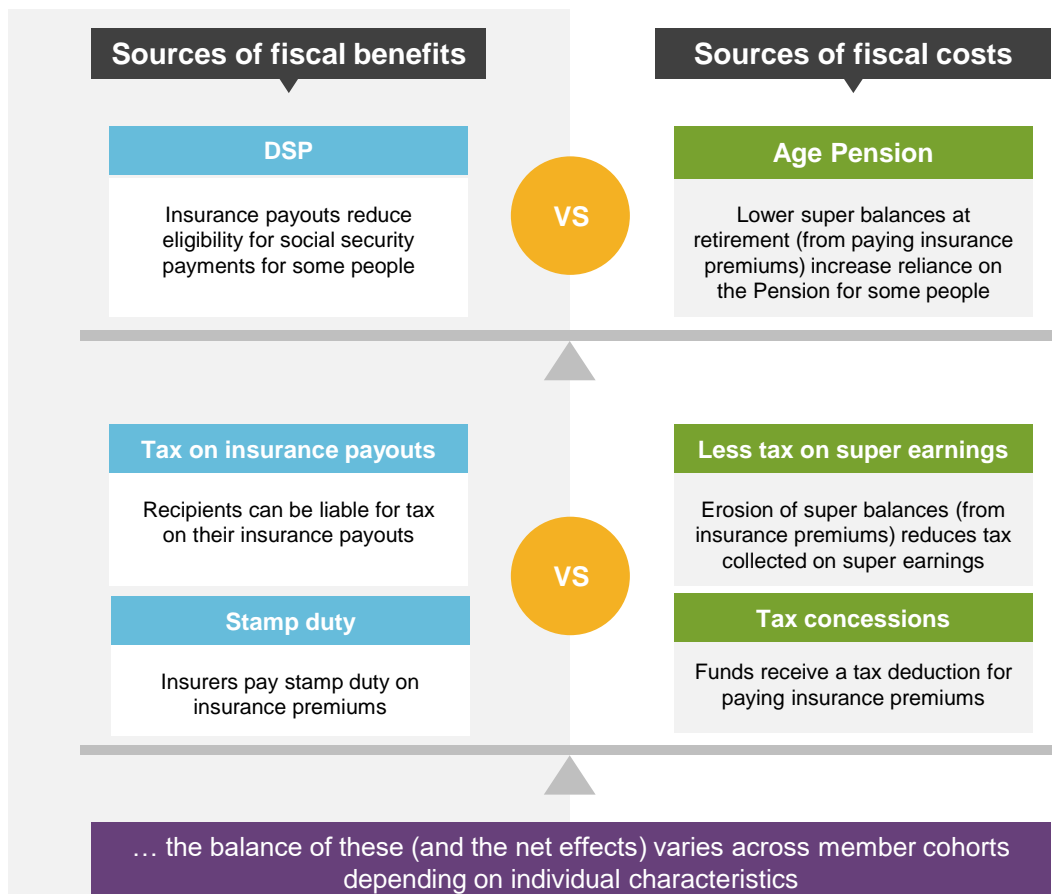
Source: PC (2018, chapter 8).

One of the arguments made by some to support the case for having insurance in superannuation as a default is that it results in a net fiscal benefit to government by reducing social security outlays (KPMG 2017; Rice Warner, sub. 46). (In this paper, fiscal benefits and costs refer to changes in government revenue — they do not refer to changes in the amounts paid or received by individuals.)

However, there are two broad aspects to the opposing fiscal effects from insurance in superannuation (figure 1):[1]

- on the one hand, claim payouts may reduce eligibility for social security payments, primarily Disability Support Pension (DSP) payments

- but on the other hand, erosion of superannuation balances through the deduction of insurance premiums will lead to greater Age Pension payments for some members.

Figure 1   **Fiscal impact of insurance in super — a world of swings and roundabouts**

Sources of fiscal benefits

DSP

Insurance payouts reduce eligibility for social security payments for some people

VS

Sources of fiscal costs

Age Pension

Lower super balances at retirement (from paying insurance premiums) increase reliance on the Pension for some people

Tax on insurance payouts

Recipients can be liable for tax on their insurance payouts

Stamp duty

Insurers pay stamp duty on insurance premiums

VS

Less tax on super earnings

Erosion of super balances (from insurance premiums) reduces tax collected on super earnings

Tax concessions

Funds receive a tax deduction for paying insurance premiums

… the balance of these (and the net effects) varies across member cohorts depending on individual characteristics

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[1]   The implicit counterfactual in this framework is that if individuals did not have insurance in superannuation, then they would not obtain any additional insurance outside of superannuation.

There are also taxation considerations.[2]

- IP and TPD claims both have tax implications, which increase the fiscal benefits of insurance in superannuation.

  – TPD payouts can either be taken as a lump sum or a super income stream. The taxable component of lump sums are taxed at 22 per cent.[3] Super income streams are taxed at the recipient's marginal tax rate less 15 per cent. More details are presented in appendix A.

  – IP payments are considered taxable income and are taxed at the marginal tax rate.

- Insurance premiums reduce superannuation savings and thus reduce the tax collected on superannuation earnings. This increases the fiscal costs of insurance in superannuation.

- Superannuation funds receive a tax deduction for the insurance premiums that they pay to insurers, which increases the fiscal cost of insurance. In most cases, the tax deduction will be equal to 15 per cent (the tax rate on contributions and earnings) of premiums paid.

- Stamp duty on insurance premiums is payable to State and Territory governments, which increases the fiscal benefits of insurance (at the whole-of-government level). Stamp duty is usually paid by insurers on behalf of the funds. The rates differ across jurisdictions but are typically around 10 per cent for TPD and IP insurance and 5 per cent for life insurance (MLC 2017).

The balance of these opposing effects will determine the net fiscal effects of insurance in superannuation.

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[2] While the tax impacts of insurance in superannuation are not explicitly mentioned in the terms of reference, they have been included in the Commission's assessment to provide a more complete picture of the fiscal impact of insurance in superannuation.

[3] The tax-free component of a disability benefit is calculated by working out proportion of the working life that the individual will miss due to their permanent disability. The tax payable is greater for individuals who are closer to retirement (though the rules change from age 60).

Underlying drivers

Setting aside the tax effects for a moment (they are conceptually simple), the net social security impact of insurance in superannuation will ultimately depend on the:

- underlying eligibility of households for pension payments (both DSP and Age Pension)

- likelihood of an insurable event occurring

- magnitude of the insurance-related impact (that is, the size of the insurance premiums that erode balances and the size of the claims that directly reduce social security payments).

The payment rates, and assets and income tests for the DSP and the Age Pension are identical.[4] Therefore differences in payments between individuals are due to differences in eligibility for payments and in the degree to which payments are tapered. Eligibility and tapering rates are determined by couple status, homeownership, household income and household assets. From this we can infer that:

- couple households with very high incomes and assets will likely never access either the DSP or Age Pension, limiting the scope for insurance to provide fiscal benefits for this cohort

- households with very low incomes and assets will likely access the full Age Pension in retirement and the full DSP if they suffer a disability (regardless of whether they receive a TPD payout), which reduces the likelihood of insurance providing fiscal benefits for this cohort. (This only applies to households with very low incomes, as cameo scenarios from the Commission's model — using default assumptions — suggest that even new workforce entrants on low incomes are projected to have savings in retirement that will initially reduce the Age Pension payment rate. This is attributable to individuals receiving the Superannuation Guarantee for their whole working life)[5]

- households who fall between these two extremes will drive the net social security outlay impact of insurance in superannuation.

Drawdown rates on assets — both in retirement and after receiving a disability benefit — are also key as they determine how quickly individuals receive the full DSP or Age Pension payment rate. Drawing down quickly (or storing funds in assets that are not included in the assets test — like the family home) will limit the scope for insurance in superannuation to provide any fiscal effects (either positive or negative).

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[4] There are some slight differences between the two payments in terms of in eligibility rules and other available allowances, including rent assistance.

[5] This suggests that there is an important distinction between analysing the net fiscal benefits for a cohort of individuals aged 21 today compared with an older cohort of individuals, or a point-in-time estimate.

Estimates by others

KPMG (2017) estimated that the current insurance in superannuation settings result in a net decrease in government outlays of between $0.65 billion and $1.85 billion over 10 years in constant prices compared with the scenario where there is no default group insurance in superannuation. The analysis considered the effects of: reductions of DSP payments ($3–4.2 billion); additional tax revenue from tax on insurance benefits ($2.9 billion); and offsetting tax concessions of $5.25–6.4 billion.

- The analysis only considered the effect of IP insurance on DSP payments — lump sum life and TPD payments were considered generally unlikely to be sufficiently high to disqualify a recipient from DSP eligibility. The analysis assumed that the DSP saving is equal to 37.5 per cent of the IP benefits paid to recipients who would otherwise qualify for the DSP.

- Additional tax receipts arising from insurance payouts were estimated using an average tax rate of 9 per cent on default insurance claim payments (of approximately $3.5 billion per year) multiplied by 90 per cent (which is the assumed proportion of insurance that would not be taken up under an opt-in only setting).

- Tax concessions were applied to life, TPD and IP insurance premiums. Unlike life and TPD insurance premiums, IP insurance premiums are tax deductible when paid for outside superannuation. Thus a tax concession (a fiscal cost) was only incurred for the 90 per cent of members who were assumed to not take out IP insurance outside of superannuation.

- The analysis used industry superannuation and insurance data to estimate the population of members with default insurance and the default cost and benefits offered.

Rice Warner (sub. 46) also estimated that removing insurance from superannuation would result in a net cost to the Australian and State and Territory governments — it estimated increased social security payments from removing default insurance at around $1.66 billion per year in constant prices.

- The estimated increase in social security payments was mostly associated with fewer TPD claims being paid out (accounting for $1.54 billion), but also included fewer life ($36 million) and IP ($85 million) claims.

- The analysis estimated that stamp duty collections from removing default cover would decrease by $270 million per year.

- Rice Warner also stated that the quantum of claims paid from default insurance policies (which it estimated at $4 billion per year) could be considered a good approximation of the reduction in taxation revenue and spending in the economy that would arise from removing default opt-out insurance from superannuation.

While both analyses find that default insurance in superannuation provides a net fiscal benefit to government, the drivers are different. The KPMG result is attributable to a fiscal benefit associated with IP insurance and additional tax revenue on insurance payouts.

In contrast, the Rice Warner analysis indicates that most of the fiscal benefit is associated with TPD insurance. Notably, both analyses are partial in that neither considered the effects of superannuation account balance erosion (flowing from the payment of insurance premiums by members) on Age Pension eligibility.

Together these analyses illustrate that assessing the fiscal impacts of insurance in superannuation is not mechanistic nor straightforward. It requires many well-informed assumptions, which can be resource-intensive to develop, along with more than a modicum of judgment.

The Commission's approach

Model

The Commission has developed a cameo model for assessing the net fiscal impact of insurance in superannuation for an individual aged 21 today over their lifetime. The Treasury's Excel Model of Retirement Incomes (EMORI) forms the basis of this model (box 3). It has been adapted by the Commission to look at the impact on savings and social security outlays when individuals make TPD and IP insurance claims (these features are not included in EMORI). Life insurance claims have not been considered as they are materially more difficult to model.[6]

Box 3	**Excel Model of Retirement Incomes (EMORI)**

The Excel Model of Retirement Incomes (EMORI) is a spreadsheet cameo model (developed by The Treasury) that simulates retirement income and taxation outcomes for hypothetical individuals or couples for each year of their working life and retirement. It includes:

- superannuation contributions, earnings and drawdowns
- Age Pension eligibility
- superannuation tax concessions
- income in working life and retirement
- non-superannuation wealth.

Sources: Wett (2017), The Treasury (pers. comm., 29 September 2018).

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[6] The difficulty arises because assumptions need to be made about who would receive any payout if an individual dies (that is, a spouse, children, or parents) and whether these individuals would be eligible for any government assistance. That said, the costs to government from life insurance in superannuation (that is, the Age Pension and tax effects) can be estimated as they are incurred by individuals who do not claim, avoiding the aforementioned difficulties. The Commission has not modelled these costs as they can be inferred from TPD insurance scenarios — life insurance premiums are typically of a similar magnitude to TPD insurance premiums.

The Commission's adapted model takes an individual (or couple) aged 21 with a range of assumed characteristics (such as income, type of insurance, retirement age) and calculates their lifetime savings, social security payments and taxes paid:

1. where an individual does not make an insurance claim over their lifetime

2. where an individual does make a claim at some point in their life (the model is run separately for each possible claim age between 22 and 64 inclusive — the years in which individuals are assumed to have insurance).

Possible claim outcomes are then weighted by the probability that individuals make a claim at a given age. Outcomes are also discounted by the probability that individuals may die at some point in the future. This means that all results presented in this paper are expected (or average) impacts.[7]
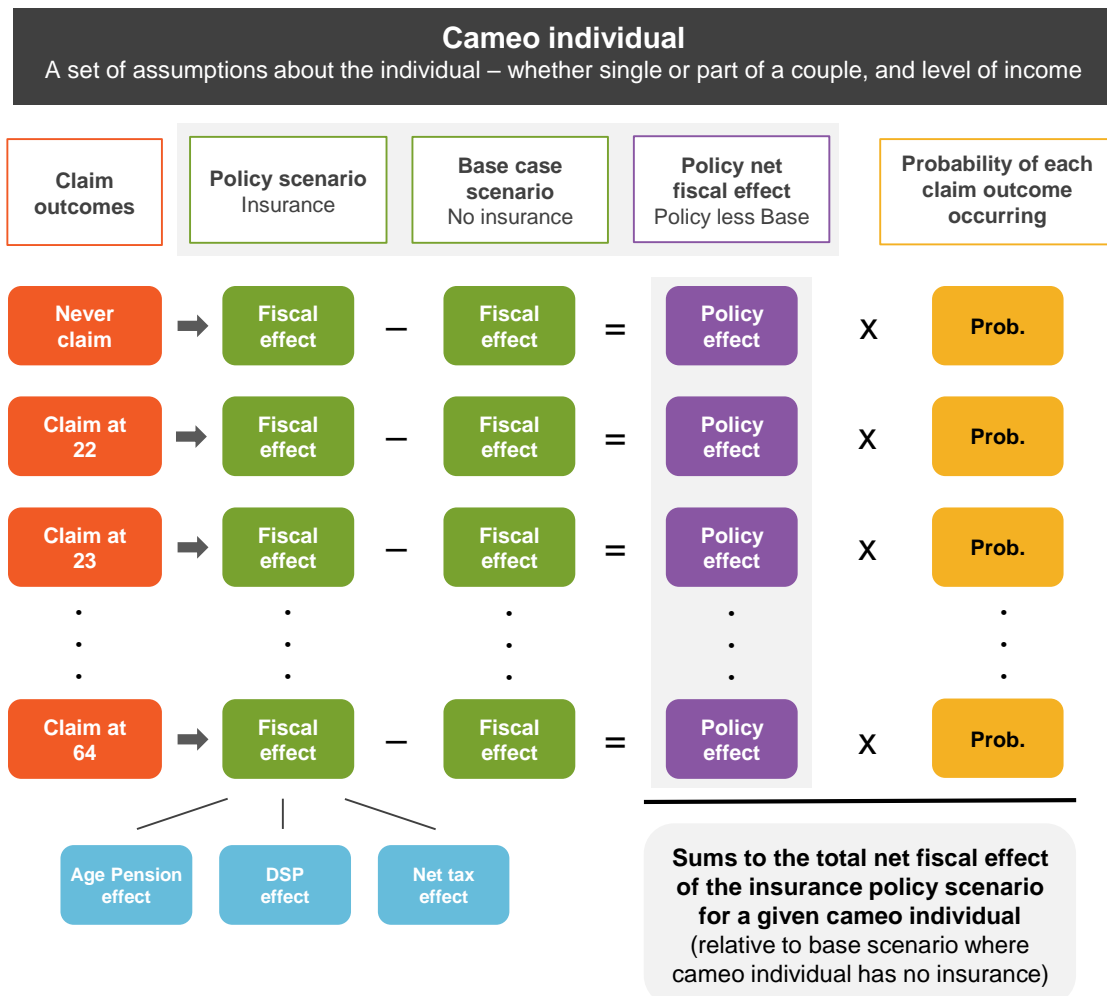
These impacts are calculated for two scenarios — where an individual does not have insurance in superannuation (the base case or counterfactual) and when an individual does have insurance in superannuation (the policy case) (figure 2). The difference between the policy and base case scenarios represents the impact of the policy for that individual.[8]

The Commission has modelled the fiscal impact of insurance in superannuation for a range of cameo scenarios. Each combination of couple status (single or couple), income (20th, 50th or 80th percentile) and insurance type (IP or TPD) is modelled in a separate cameo scenario.

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7   They can be considered average effects as they are the weighted sum of 45 possible outcomes (making an insurance claim at each of the ages from 22 to 64 inclusively, and not making an insurance claim at all).

8   Modelling the total impact of default insurance in superannuation would require an assumption about the number of individuals who would opt-in to superannuation.

Figure 2   **A model to account for insurance claims at a range of ages**

Cameo individual
A set of assumptions about the individual – whether single or part of a couple, and level of income

Claim outcomes	Policy scenario Insurance	Base case scenario No insurance	Policy net fiscal effect Policy less Base	Probability of each claim outcome occurring
Never claim	Fiscal effect	− Fiscal effect	= Policy effect	X Prob.
Claim at 22	Fiscal effect	− Fiscal effect	= Policy effect	X Prob.
Claim at 23	Fiscal effect	− Fiscal effect	= Policy effect	X Prob.
⋮	⋮	⋮	⋮	⋮
Claim at 64	Fiscal effect	− Fiscal effect	= Policy effect	X Prob.

Age Pension effect   DSP effect   Net tax effect

Sums to the total net fiscal effect of the insurance policy scenario for a given cameo individual
(relative to base scenario where cameo individual has no insurance)

The cameo modelling is dependent on a range of modelling assumptions (some of which are sensitivity tested in appendix B). For example:

- the net fiscal impacts of TPD and IP insurance are considered separately. So, for example, TPD simulations only consider TPD premiums and TPD claims

- all dollar values are presented in net present value (NPV) terms — future income streams are discounted by a nominal rate of 5 per cent (approximately the long term government bond rate)

- individuals who receive a TPD claim are assumed to take it as a super income stream that they draw down upon each year. In practice, individuals also have the option of taking their TPD out as a lump sum, which, as previously mentioned, has slightly different tax implications

- IP policies are assumed to have a two-year benefit. Individuals who make IP claims are assumed to return to work after the IP benefit ends

- the fiscal implications of the tax concessions and stamp duty associated with insurance premiums are included in the model

- individuals are assumed to not be eligible for workers' compensation (which has the potential to reduce insurance payouts and eligibility for social security payments).

By employing a cameo modelling approach, the Commission is not *directly* estimating the *total* net fiscal effect of insurance in superannuation (and has thus not made any assumption as to whether the appropriate policy counterfactual is no default insurance or no insurance at all in superannuation).

The full set of assumptions is detailed in appendix A.

Data

Data on insurance premiums were taken from the Rice Warner comparator of group insurance policies. From this, three insurance policy scenarios were developed (figure 3).[9]
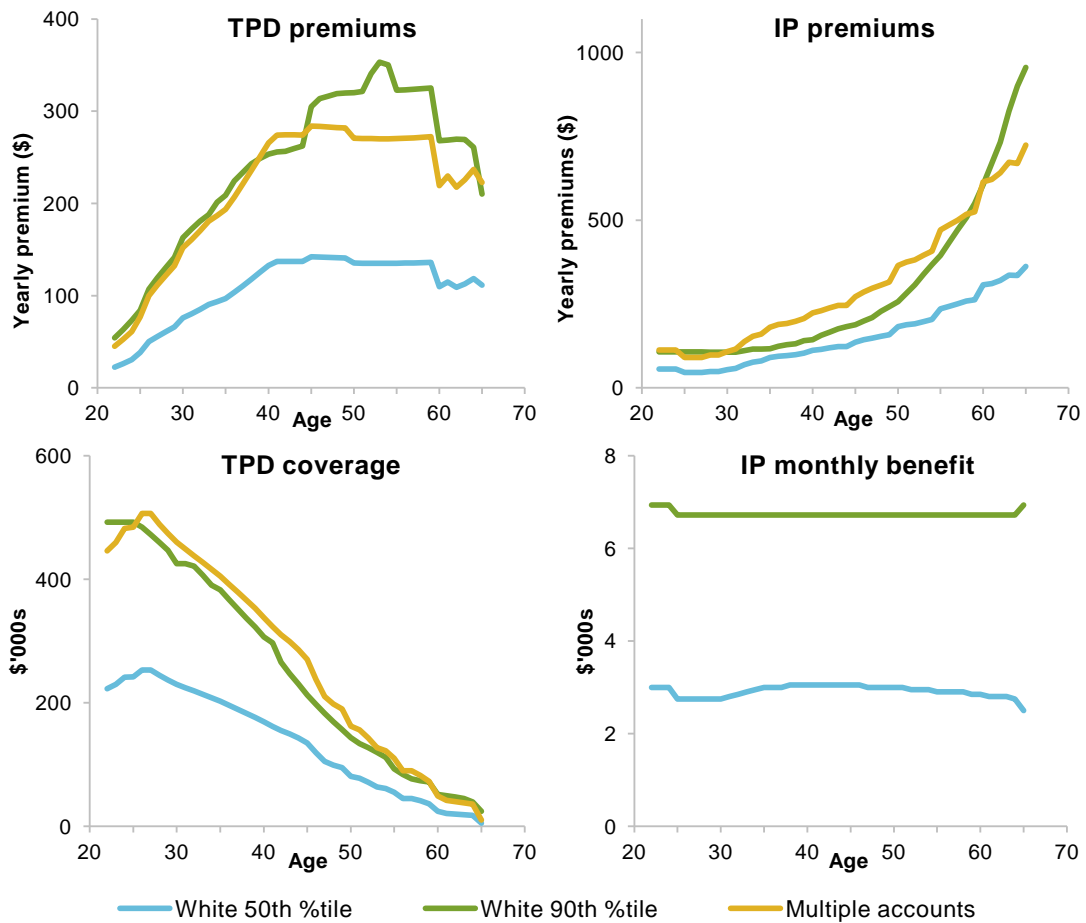
- An average white collar insurance policy — the median premiums and coverage levels for insurance policies with a professional occupational code.[10]

- An expensive white collar insurance policy — the 90th percentile premiums and coverage levels for insurance policies with a professional occupational code. The premiums and coverage are higher than the average white collar insurance policy.

- Multiple insurance policies — twice the median premiums and twice the coverage levels (for TPD but not IP) for insurance policies with a professional occupational code.

The first of these policy scenarios is used for most simulations. The remaining scenarios are used for sensitivity tests.

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[9] A blue collar insurance policy scenario was not considered as it would be important to also vary the assumed claim rates (blue collar policies are likely to have proportionally more claims) and the Commission could not obtain data on claim rates that vary by loading type.

[10] The Rice Warner comparator of insurance policies bundles TPD and life premiums together. A separate TPD premium was calculated by multiplying the average bundled premium by the number of TPD claims as a proportion of life and TPD claims by age.

Figure 3   **Insurance premiums and coverage for scenarios**

a White 50th %tile refers to a median white collar insurance policy. White 90th %tile refers to a 90th percentile white collar insurance policy. The multiple accounts scenario is equal to twice the premiums of the median white collar insurance policy. The IP monthly benefit for the multiple accounts scenario is the same as a single the white 50th percentile scenario as typically only a single IP policy can be claimed on.

*Source*: Rice Warner premium comparator tool.

Data on claim rates were taken from the Rice Warner *Group life and disability insurance claims experience report* (Rice Warner 2015). The following claim rates are used in the model:

- TPD claim rates for males in industry funds

- IP claim rates for males in industry funds and for policies with a 60-day waiting period (figure 4).[11]

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[11] Claim rates for males were used to match insurance premiums, which are also for males (though in practice most funds do not charge differential premiums based on sex). Claim rates are typically higher for males than females (most notably between the ages of 20 and 30), thus using female claim rates (or an average) would reduce the modelled DSP-related benefits of insurance in superannuation and increase Age Pension-

These rates relate to claims across all risk categories, thus creating a slight inconsistency with insurance premium data (for example, these rates potentially overstate the actual claim rates that apply for white collar workers).

Figure 4   **Model insurance claim rates**
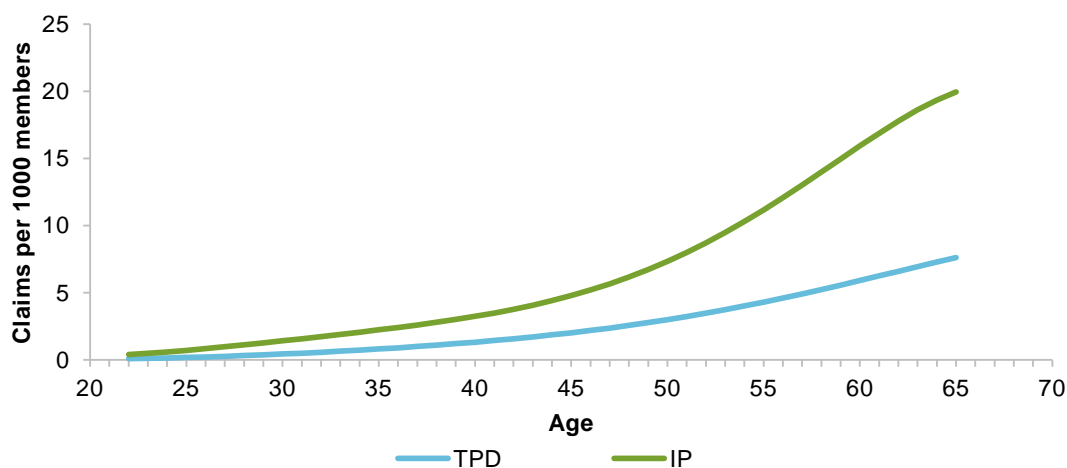
a TPD claim rates are for males in industry funds. IP claim rates are for males in industry funds for policies with a 60-day waiting period.

Source: Rice Warner (2015).

Some key themes from results

An analysis of a range of cameo scenarios suggests that the impact of insurance on Age Pension outlays is material and that the largest fiscal benefit of insurance in superannuation — on a per person basis — is likely to apply to IP insurance (though the absolute fiscal impact of this effect will be constrained by the relatively few individuals who have default IP insurance cover).

This section presents the results of 12 cameos — combinations of couple status, income and insurance type. The fiscal impacts for couples are calculated at the household level but only represent the effect of a single household member moving from having no insurance to having insurance in superannuation.[12]

As mentioned previously, all results are reported as expected or average effects.

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related costs. Rice Warner (2015) data indicate that TPD claim rates for Master trusts are higher than for industry funds for each claim age, while claim rates for Public Sector funds are lower. A recent review of insurance in superannuation found that industry funds received more claims per member than retail funds, although this could be due to the older age profile of industry fund members (ASIC 2018, p. 9).

[12] The calculation of probability weights becomes difficult when the impact of two individuals switching from having no insurance to having insurance is analysed concurrently.

TPD insurance

Singles

Simulations suggest that a single worker on a 20th percentile income is expected to impose a net cost (of around $3800) to government from having TPD insurance in superannuation (figure 5).[13]

- *DSP payments* — TPD payouts barely reduce the DSP payment, especially at younger ages when individuals do not have any significant superannuation savings (which are assumed to be paid out with a TPD claim).

  – This supports the finding by KPMG that given the average size of TPD claims (approximately $250 000), individuals who receive a TPD claim are likely to receive close to the full DSP payment, implying that TPD insurance is unlikely to lead to significant fiscal savings.

- *Age Pension payments* — the insurance premiums paid over the working life increases the expected Age Pension payments that low-income individuals receive in retirement. As mentioned previously, even individuals on a 20th percentile income will still have superannuation balances around $500 000 in real terms at retirement under the model's assumptions, and thus will not immediately access the full Age Pension.

- *Tax receipts* — insurance premiums lower the investment returns made on superannuation savings and reduce the expected tax received on earnings by around $500. This effect is small, but will exist irrespective of the assets and income of households. The expected net impact of tax deductions for insurance and stamp duty is a fiscal cost of around $200 and will also exist irrespective of the assets and income of households.[14] Also, the super income stream withdrawals are too small to tax for low-income individuals once the 15 per cent super income stream tax offset is applied. The net tax impact is a fiscal cost of $700.

The Commission's simulations also show a single worker on a 50th percentile income is expected to create a small fiscal cost from having insurance in superannuation. This individual has more savings at any given point in their life than a lower income individual, which means that a TPD claim is more likely to reduce DSP payments. It also takes longer for middle-income individuals to receive the Age Pension (as they have more savings at retirement) so paying insurance premiums has a smaller impact on Age Pension payments.

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[13] 20th percentile income profiles are calculated as the 20th percentile wage for each age from tax data. More detail is presented in appendix A.

[14] As noted previously, stamp duty receipts are a benefit to State and Territory Governments and would not be included in any assessment of the fiscal benefit of insurance in superannuation to the Australian Government.

Figure 5　Net fiscal impacts of TPD insurance[a]
Selected cameos
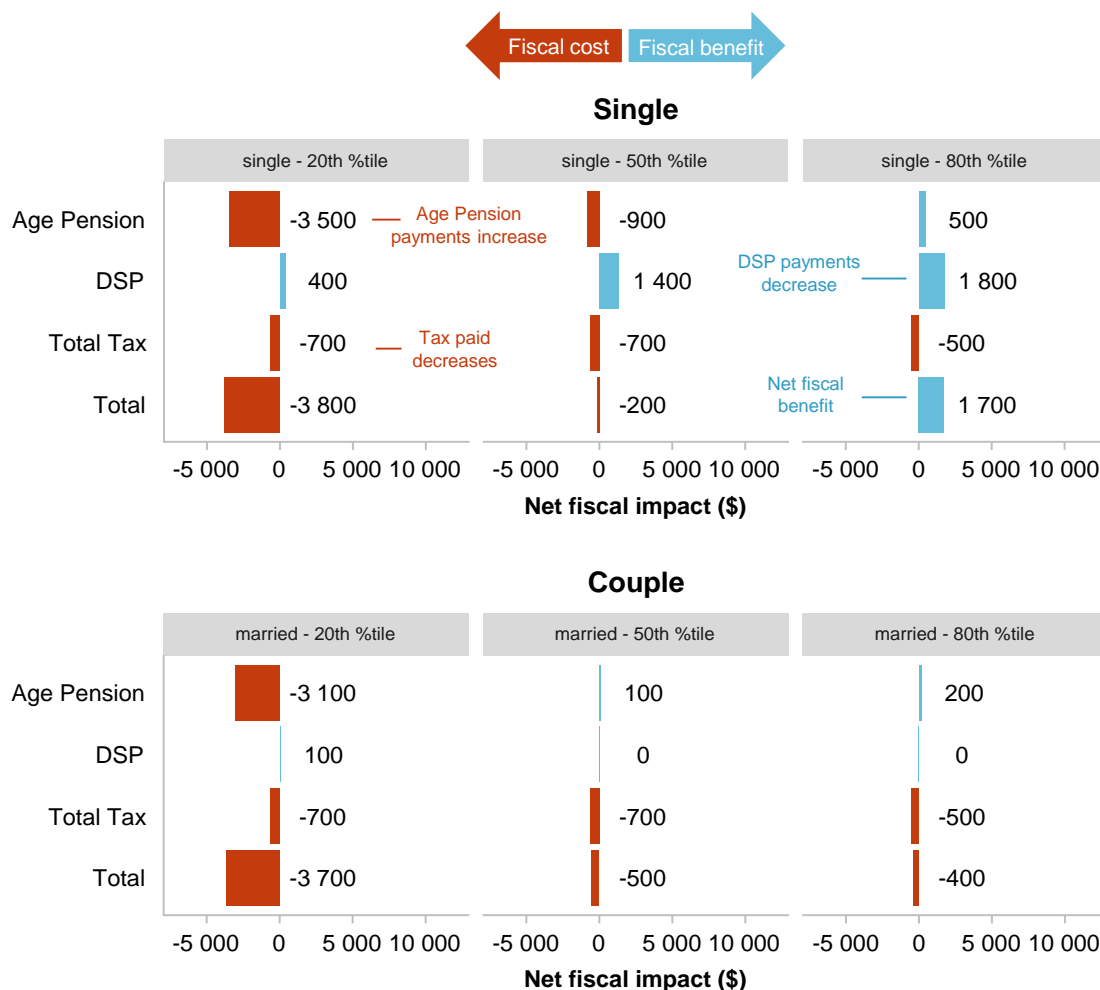
a All results are presented as NPVs and represent the weighted sum of all the possible outcomes (that is, never claiming, claiming at 22, etc.) that an individual can face.

Source: Productivity Commission estimates.

The same trends continue with higher income workers, such that for a worker on an 80th percentile income, insurance in superannuation is expected to result in a small fiscal benefit to the government ($1700).[15]

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15 In this scenario the expected impact on Age Pension payments is actually positive (a fiscal benefit to government). This individual earns too much throughout their lifetime for the balance erosion associated with insurance to reduce their Age Pension payments. However, for the claim outcomes where an individual faces a total and permanent disability around the ages of 55 to 60, the individual will obtain an early release of superannuation savings which means that (a) some of their savings is consumed by the time they reach the Age Pension age and (b) receiving an insurance payout on top of an early release of superannuation savings (because the individual has insurance) will reduce the Age Pension payment that an individual will receive.

Couples

In scenarios where both members of a couple work, and where the partner continues working when an individual makes a TPD claim, the partner's income will largely determine the DSP payment that the individual receives.[16] For high-income partners, no DSP payment will be paid, but for lower income partners a part pension may be paid. Furthermore, the reduction in the DSP payment rate associated with additional income is halved for couples, lessening the impact of the TPD claim through the deemed income calculation.[17] This results in negligible expected fiscal benefits from insurance through lower DSP payments.

For individuals in low-income couples, insurance in superannuation leads to higher expected Age Pension payments, resulting in a net cost to government (given the lack of DSP-related fiscal benefits).

For individuals in middle- and high-income couples, there is a negligible fiscal cost. There are no DSP-related fiscal benefits, and the couple is too wealthy to be able to access the Age Pension until late in retirement. Indeed for this cohort, the loss of superannuation earnings tax revenue associated with paying insurance premiums has the largest (but still trivial) effect.

IP insurance

For single individuals, IP insurance represents a more significant benefit to government than TPD insurance (figure 6). This is because IP payments typically provide a monthly income that is large enough (approximately $3000 or 75 per cent of pre-injury wage income, whichever is lower) to substantially reduce DSP payments.[18][19] Also, IP payments are taxable and generate revenue for the government — the expected taxation revenue from IP payments more than offsets the expected loss in tax revenue from superannuation earnings when insurance premiums are paid (the net taxation effect is around $1300 for the middle- and high-income scenarios in the IP simulations).

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[16] The Commission has not explicitly considered scenarios where a partner does not work or ceases work to act as a carer. This scenario would likely be similar to the case for a single individual, except to the extent that insurance claims reduce the need for the partner to stop work and they continue to pay income tax.

[17] A single pension is reduced by 50 cents for every dollar earned over $172 a fortnight, while a couple pension (for one member of a couple) is reduced by 25 cents for every dollar of household income earned over $302 a fortnight.

[18] While there are variations in the details, all IP policies restrict individuals from receiving more income from IP benefits than they received from employment prior to their injury or illness. The model assumes that the restriction is 75 per cent of employment income.

[19] All individuals who are eligible to make an IP claim (if they had insurance) are assumed to meet the disability requirements for the DSP. In reality, many of these individuals would not meet the DSP disability requirements and would instead be eligible for the Sickness Allowance, Newstart Allowance or a similar payment (which are all about 40 per cent lower than the DSP).

Figure 6   Net fiscal impacts of IP insurance[a]

Selected cameos
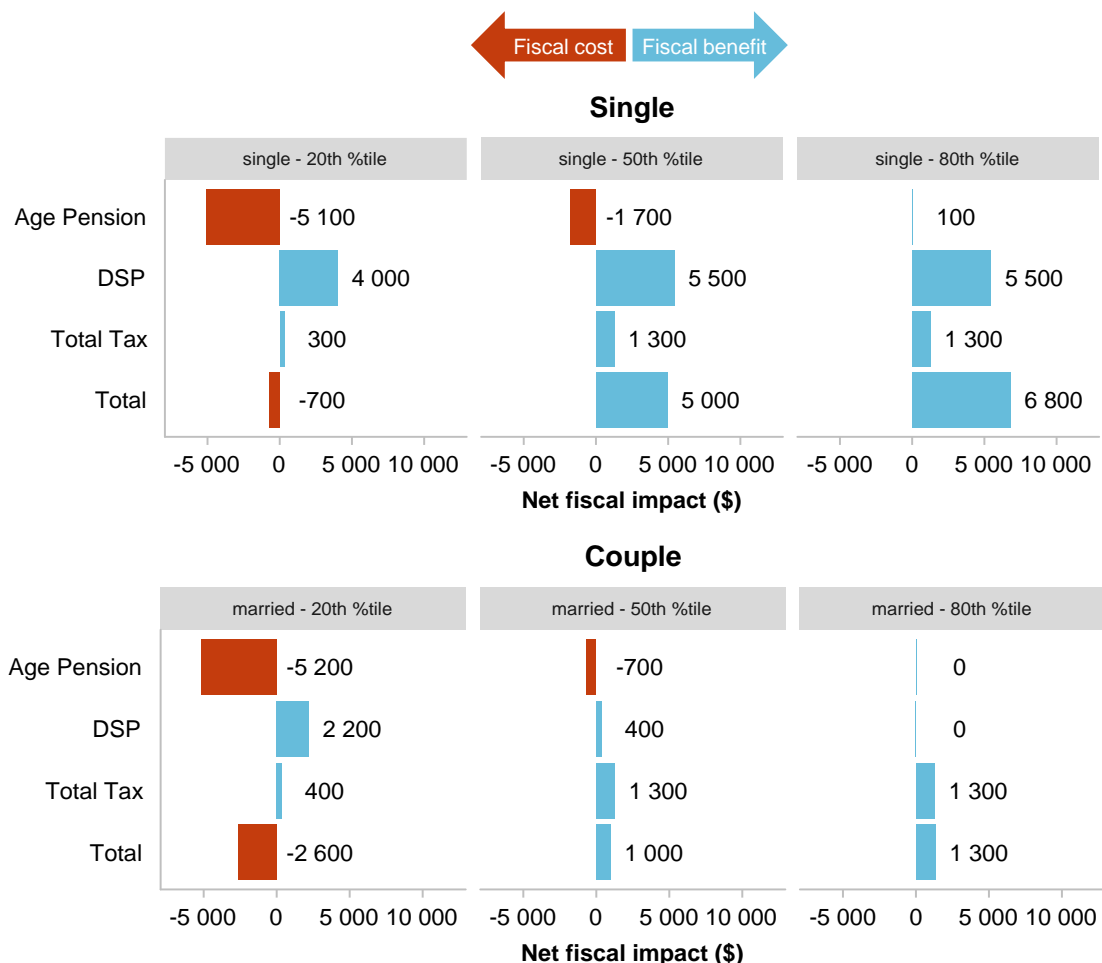
a All results are presented as NPVs and represent the weighted sum of all the possible outcomes (that is, never claiming, claiming at 22, etc.) that an individual can face. Cameo modelling is for a IP policy with a two year benefit.

Source: Productivity Commission estimates.

In the Commission's modelling, the net fiscal benefits are larger for high-income individuals than for low-income individuals. This is because high-income individuals will not access the Age Pension in retirement. However, this result should be interpreted cautiously as an outer-bound estimate, as it is contingent on the strong assumption that high-income individuals do not have savings aside from a primary residence and thus would be eligible for a full DSP pension in the case of illness or disability. In reality, higher income individuals are likely to have other assets that would reduce the DSP-related fiscal benefits associated with insurance.

For coupled individuals, the income of the partner reduces the available DSP payment when IP insurance is not held, limiting the DSP-related fiscal benefit associated with IP insurance. For low-income couples, the Age Pension effects offset the combined DSP and tax-related effects resulting in a net fiscal cost. For higher-income couples, the DSP and Age Pension-related fiscal effects are muted and only the tax-related fiscal benefits remain.

More scenarios are assessed in appendix B. These suggest results are not materially affected by assumptions about withdrawal methods, but that the net fiscal benefits to government are reduced when individuals have multiple policies.

Conclusion

The Commission's cameo modelling suggests that when looking at the fiscal impact of insurance in superannuation, Age Pension effects matter, especially for low- and middle-income individuals. Therefore, estimates that exclude Age Pension effects are likely to overestimate the net fiscal benefit of insurance in superannuation.

The Commission's analysis also suggests that IP insurance for single individuals is the cohort for which a net fiscal benefit is most likely (although the absolute fiscal impact will be constrained by the fact that only around 30 per cent of superannuation members have default IP insurance).

Further analysis — undertaken with a more comprehensive model — would be required to determine whether there are aggregate net fiscal benefits or costs associated with insurance in superannuation. One difficulty in undertaking such analysis is finding reliable data on the distribution of insurance premiums and claim rates across the population of members (including the interrelationship between the two variables). Assumptions would also need to be made about trends in household structure and homeownership. The Treasury would likely be best placed to undertake such work — they have expertise in this area and they could likely draw on the assumptions underpinning Age Pension reliance used for Intergenerational Report modelling.

Finally, it is important to remember that net fiscal impacts are only one component of a broader assessment of the total net impacts of insurance in superannuation. For example, while the Commission's cameo analysis suggests that IP insurance is likely to provide the largest fiscal benefit on a per-person basis, IP insurance policies are also more likely to be 'zombie' policies, which cannot be claimed on and thus reduce wellbeing for members (PC 2018, p. 21). The Commission made a number of draft findings and draft recommendations designed to improve insurance arrangements in superannuation in its draft report (box 1). It also recommended a future holistic review on insurance in superannuation (after improved arrangements have been implemented) to assess the community-wide impacts of default insurance in superannuation and to consider if further regulatory intervention or policy change is required (PC 2018, p. 64).

Appendix A: Key assumptions

Behavioural assumptions

The model relies on a range of behavioural assumptions. For example, individuals:

- retire at 67 (unless forced to retire early due to a permanent disability)
- drawdown the legislated minimum from an allocated pension in each year of retirement (this assumption is tested in appendix B)
- who retire early due to disability:
    - convert their disability benefit (the TPD payment and any superannuation) to an allocated pension (this assumption is tested in appendix B)
    - drawdown the maximum of $20 000 or 10 per cent of their balance (this assumption is tested in appendix B). This assumption is designed to ensure that people making TPD claims withdraw a sufficient amount of income to support themselves — the minimum withdrawal rates are likely to be too low
- take TPD benefits as a super income stream
- who make an IP claim are assumed to:
    - be out of work for two years before returning to the workforce (receiving IP benefits for those two years)
    - only make a single IP claim over their lifetime
    - receive the monthly IP benefit or 75 per cent of pre-injury/illness wage income, whichever is lower.

Economic parameters

The model makes the following assumptions about economic parameters.

- Consumer Price Index (CPI) growth is 2.5 per cent per annum.
- The long-run economy-wide wage growth is 4 per cent per annum (1.5 per cent real).
- Wage profiles for the 20th, 50th, and 80th percentile are included in EMORI and are derived from tax data, using the average wages within each percentile for every given age (figure 7). These wage profiles assume that wages increase with experience up until about age 40.
- Wage growth between 2021 and 2026 is assumed to be muted to compensate for legislated increases in Superannuation Guarantee rates.
- All values are converted to a NPV using a 5 per cent discount rate. This is roughly the government's long-term bond rate and thus its opportunity cost of borrowing funds. It is also comparable to the interest rate charged by the Australian Government under the Pension Loans Scheme.[20]

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[20] A higher discount rate (the Office of Best Practice Regulation advises a rate of 7 per cent real when undertaking cost-benefit analysis) is not warranted here given that (a) market risk is not an important consideration and (b) the analysis is being used to loosely proxy the point-in-time fiscal impacts of insurance in superannuation.

Figure 7   **Lifetime wage income profiles^a**
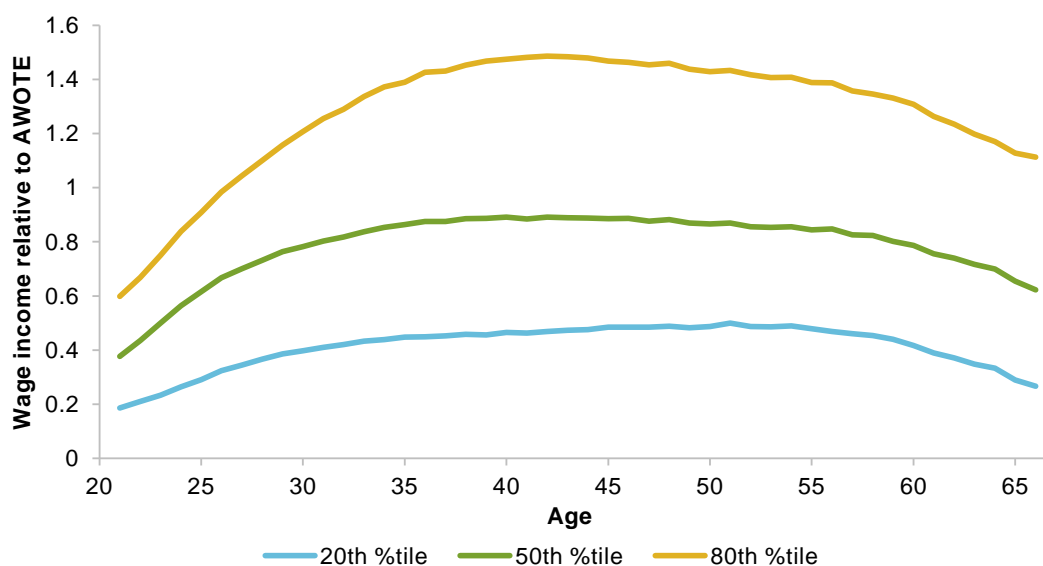
a Wage income is presented relative to Average Weekly Ordinary Time Earnings (AWOTE) — a value of 0.5 indicates wage income that is half of AWOTE.

Source: PC EMORI based on Treasury analysis of 2014-15 ATO data.

Superannuation rules

The following is a list of the key assumptions regarding superannuation in the model.

- Superannuation assets receive an annual investment return of 7.5 per cent per year (5 per cent real) in the accumulation and pension phase.

- The annual administration fee is $69 plus 0.16 per cent of superannuation assets.

- The annual investment fee is 0.82 per cent of superannuation assets.

- Superannuation assets are assumed to pay an effective tax rate of 7 per cent on earnings in the accumulation phase and are untaxed in the pension phase.

- Superannuation funds claim a tax deduction for paying insurance premiums to their insurers. This concession is equal to the premiums paid multiplied by the superannuation fund's tax rate on contributions and income (15 per cent).

- Insurers pay stamp duty on insurance premiums of 10 per cent — an approximate average of State and Territory governments stamp duty rates for TPD and IP insurance (MLC 2017).

Tax and transfer assumptions

The following tax and transfer assumptions are made in the model.

- All individuals who would be eligible for a TPD or IP claim (if they had insurance) are assumed to meet the disability requirements for the DSP. In reality, the DSP disability requirement is likely to be stricter than insurance claims (especially for IP payments). That said, if individuals did not meet the DSP disability requirements, they would still likely receive NewStart (which has a lower payment rate than the DSP). Accounting for this in the model would reduce the fiscal benefit associated with insurance in superannuation.

- Individuals are assumed to not claim on insurance outside of superannuation and are assumed not to be eligible for any worker's compensation payments.

- For pension calculations, individuals are assumed to be homeowners. This assumption is tested in appendix B.

Appendix B: Sensitivity analysis

This section tests the sensitivity of cameo results to key assumptions. To keep the analysis tractable, only the single individual cameos are considered.

Higher insurance premiums

Two alternative insurance policies are considered. Both are more expensive relative to an average white collar policy:

- an expensive white collar insurance policy (with higher insurance premiums and more cover than the default policy)

- multiple insurance policies. (Compared with the default policy, the insurance premiums are twice as expensive, the cover for TPD is twice is large and the cover for IP is the same as only a single IP policy can typically be claimed on.)

Note that these sensitivity tests do not change the underlying claim rates.

A more expensive white collar policy

More expensive policies (with higher levels of cover) intensify the fiscal effects of TPD insurance (figure 8). This is because the both the fiscal cost and benefit drivers (insurance premiums and the level of cover respectively) have increased proportionally.

A similar result occurs for IP insurance at the aggregate level, though there are some differences in the magnitude in the components. The increase in the monthly IP benefit for high-income individuals is substantial (from around $3000 to $6000 — an annual income of $72 000 before tax). Low- and middle-income individuals do not receive the full increase as the 75 per cent of income restriction is binding. High-income individuals who still receive the full IP benefit are pushed beyond any form of DSP payment and into higher tax brackets. The result is a much larger tax (and net) benefit to government from IP insurance.

Figure 8   Results for a higher premium white collar policy

Single individual
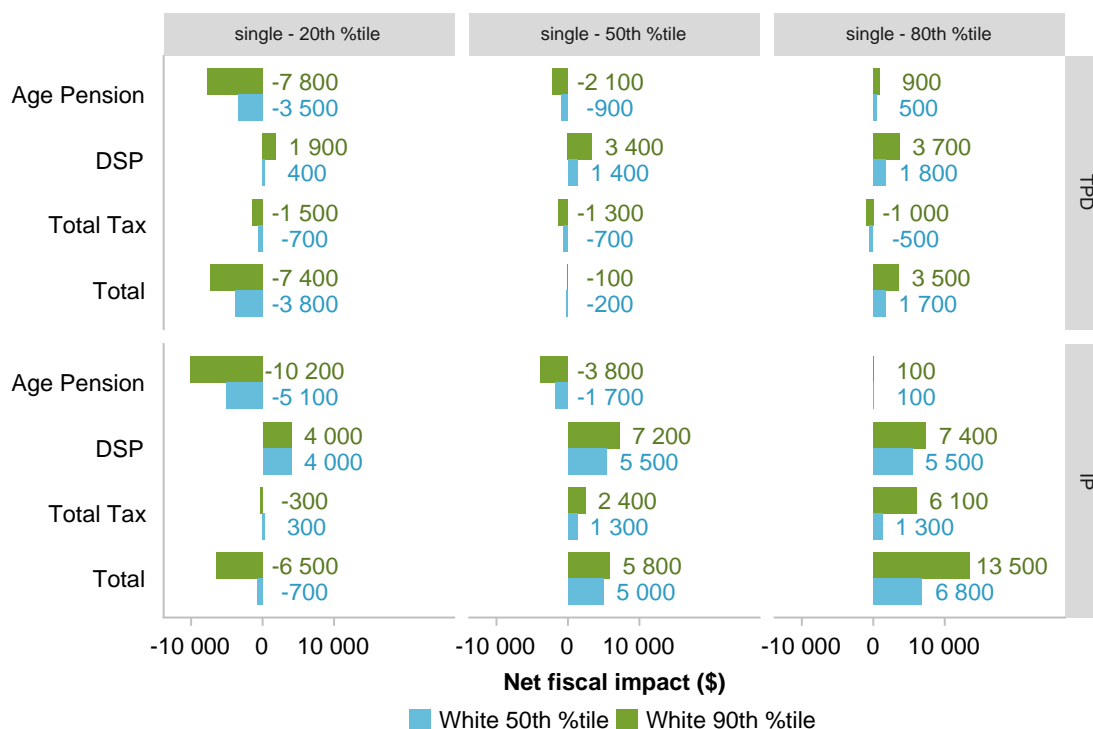
a The white collar 50th percentile insurance policy is the default assumption and included here for reference.
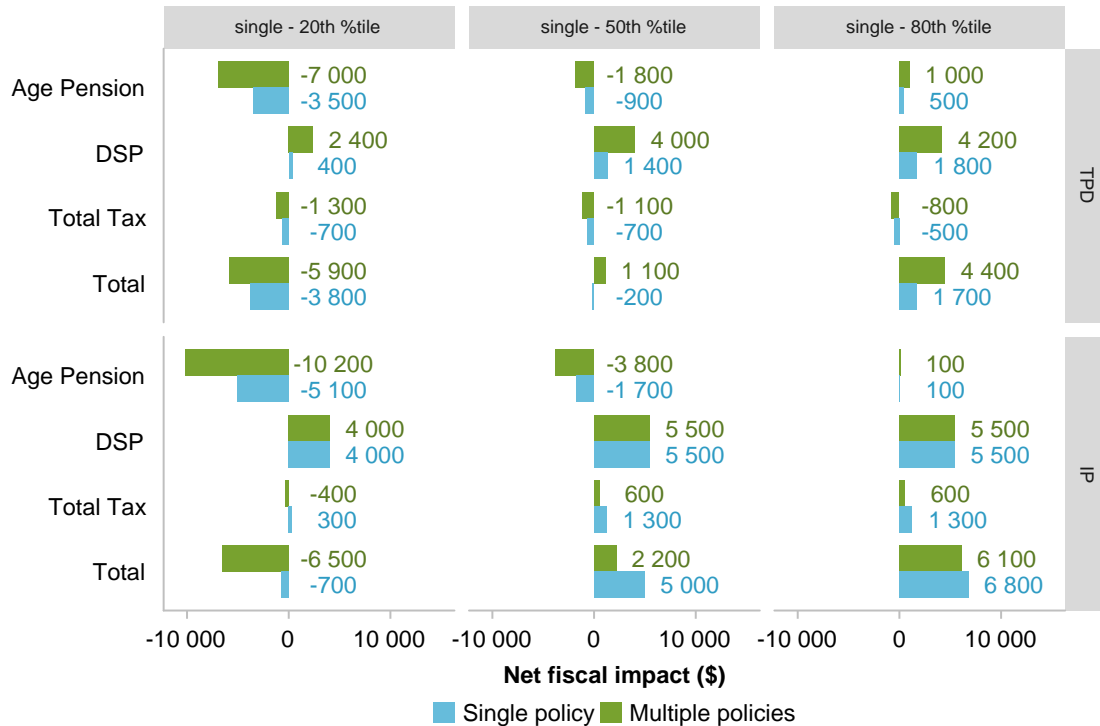
Source: Productivity Commission estimates.

Multiple insurance policies

A multiple policies scenario is similar to a more expensive policy for TPD insurance (higher insurance premiums and more cover) and so the results are also similar — all effects are intensified proportionally (figure 9).

Multiple policies reduce the fiscal benefit associated with IP insurance as the Age Pension costs increase with no changes to the DSP effect. The result is a reduced net fiscal benefit to government from IP insurance. (The effect of this scenario on the net fiscal benefit for high-income individuals is much smaller as they do not receive the Age Pension under either the base or policy case. What is left is a small tax effect due to reduced tax receipts from superannuation earnings.)

Figure 9 **Results for multiple policies**

Single individual

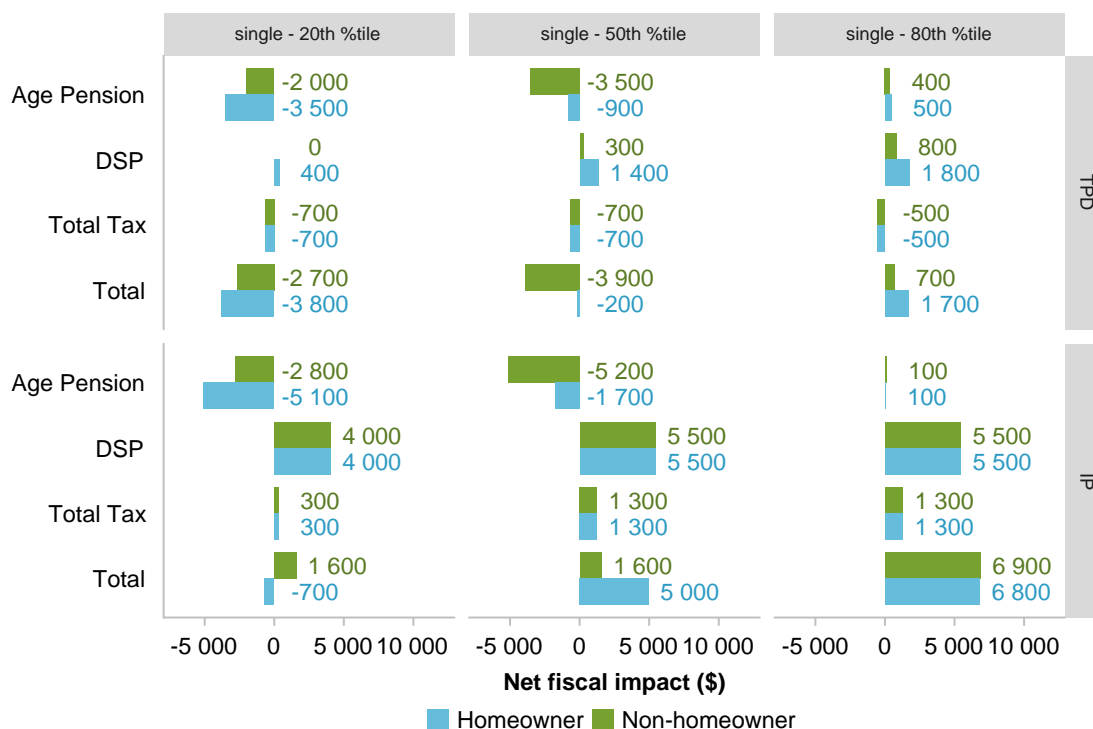**a** A single insurance policy is the default assumption and included here for reference.

Source: Productivity Commission estimates.

Homeownership

The base set of scenarios assume that all individuals are homeowners. Non-homeowners have a higher assets threshold before pensions are reduced. For TPD insurance:

- this pushes more low-income single individuals into the group that will receive DSP and the Age Pension regardless of TPD payout or insurance premiums paid. Thus low-income individuals represent less of a fiscal cost to government (figure 10)

- middle-income non-homeowner individuals have similar results to low-income homeowner individuals — they move from being people who are unlikely to access the Age Pension until late in retirement, to people who will access it earlier (thus increasing the Age Pension effects). At the same time they become more likely to access the full DSP at a given age, limiting the DSP-related fiscal benefits

- a similar (but muted) effect applies to high-income individuals. They become more likely to access the full DSP at given age, limiting the DSP-related fiscal benefits.

Figure 10   Results for a non-homeowner
Single individual

	single - 20th %tile	single - 50th %tile	single - 80th %tile	
Age Pension	-2 000 / -3 500	-3 500 / -900	400 / 500	TPD
DSP	0 / 400	300 / 1 400	800 / 1 800	
Total Tax	-700 / -700	-700 / -700	-500 / -500	
Total	-2 700 / -3 800	-3 900 / -200	700 / 1 700	
Age Pension	-2 800 / -5 100	-5 200 / -1 700	100 / 100	IP
DSP	4 000 / 4 000	5 500 / 5 500	5 500 / 5 500	
Total Tax	300 / 300	1 300 / 1 300	1 300 / 1 300	
Total	1 600 / -700	1 600 / 5 000	6 900 / 6 800	

Net fiscal impact ($)

■ Homeowner ■ Non-homeowner

a The default assumption is that individuals are homeowners. This scenario is included here for reference.

Source: Productivity Commission estimates.

Assumptions about drawdowns

This subsection analyses the impact of the following three assumptions relating to drawdowns in the model.

1. The two methods for receiving superannuation benefits at retirement (or after receiving a disability benefit) — an income stream or lump sum.

2. The assumed drawdown rates of assets in retirement.

3. The assumed drawdown rates of assets after receiving a disability benefit.

The assumptions about drawdown rates apply to both lump sums (that is, the funds that are assumed to be in non-super savings vehicles) and income streams.

Lump sum or income stream

The base case assumption is that individuals convert their superannuation into an income stream at retirement or after receiving a disability benefit. For most scenarios the assumption about the method for drawing down on assets does not have a significant effect on the fiscal impacts (figure 11).

The largest change is a reduction of the net fiscal benefits for a high-income individual with IP insurance — a counterintuitive result given that IP claims cannot be taken as a lump sum. However this scenario also assumes that individuals who never make a claim take out their superannuation in retirement as a lump sum, and the (substantial) earnings from their savings are then taxed. Insurance premiums reduce the fiscal net benefits of insurance by reducing retirement savings and thus reducing the tax receipts on earnings that the government receives.

Figure 11   **Results assuming lump sum withdrawals**
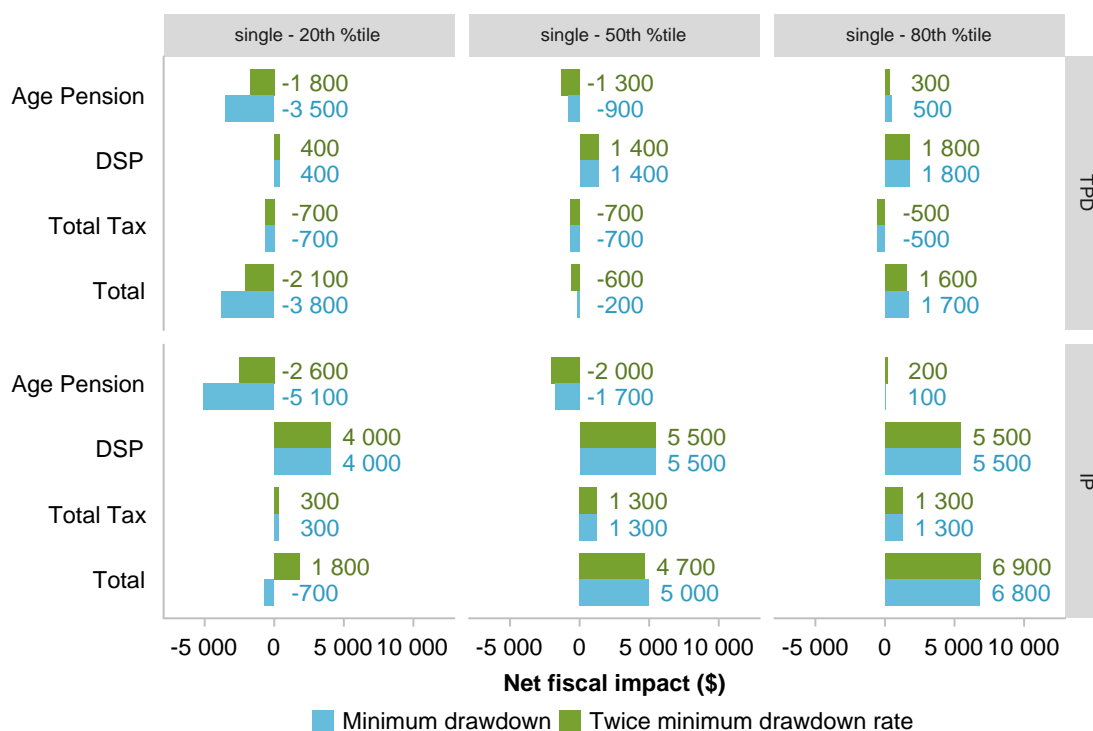Single individual
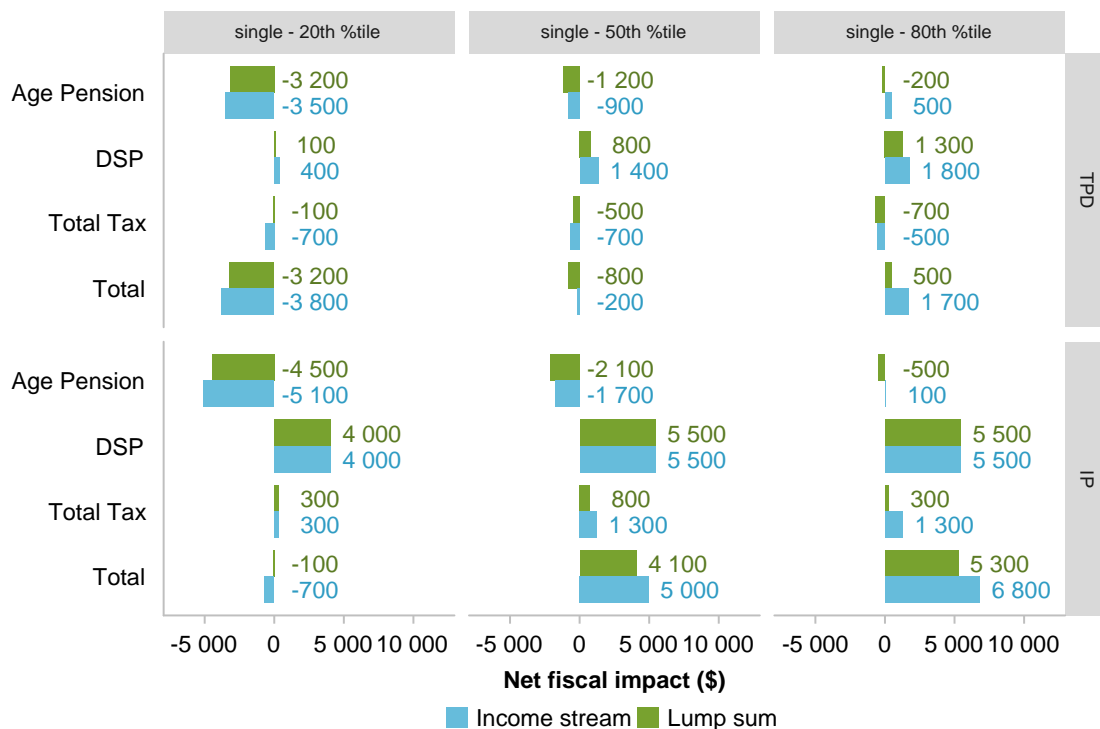
a The default assumption is that individuals withdraw any claims as an income stream. This scenario is included here as a reference.

Source: Productivity Commission estimates.

Drawdown of savings in retirement

Faster drawdowns of savings in retirement leads to a reduced Age Pension effect for low-income individuals (and a greater net fiscal benefit) because individuals are receiving the full Age Pension at an earlier age (figure 12).

Figure 12 **Results assuming a faster drawdown in retirement**
Single individual

a The default assumption is that members drawdown at the minimum rate in retirement. This scenario is included here for reference.

Source: Productivity Commission estimates.

Drawdown of disability benefit

This scenario assumes that individuals drawdown disability benefits at a rate of 20 per cent per year. Faster drawdowns of the disability benefit leads to a reduced DSP effect for TPD insurance and a greater fiscal cost to government (figure 13). There is a minimal impact on low-income individuals as they already claim close to the full DSP whether or not they receive a TPD claim.

The scenario does not apply to IP insurance as individuals are assumed to consume all of the IP monthly benefit.

Figure 13 **Results assuming a faster drawdown of disability benefit**
Single individual

	single - 20th %tile	single - 50th %tile	single - 80th %tile
Age Pension	-3 600 / -3 500	-1 100 / -900	100 / 500
DSP	100 / 400	500 / 1 400	700 / 1 800
Total Tax	-500 / -700	-300 / -700	-100 / -500
Total	-4 000 / -3 800	-900 / -200	700 / 1 700

Net fiscal impact ($)

10% per year   20% per year
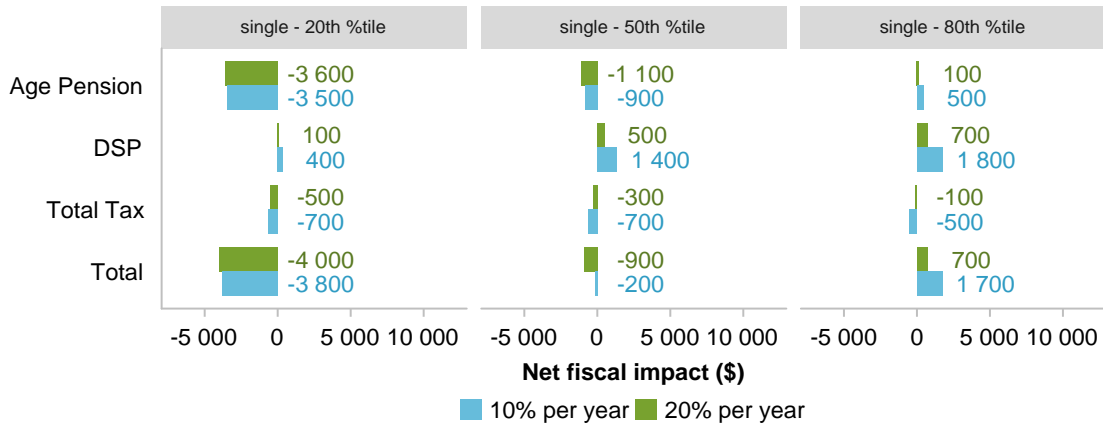
a The default assumption is that members who retire early due to a TPD event withdraw at least 10 per cent of funds each year. This scenario is included here for reference.

Source: Productivity Commission estimates.

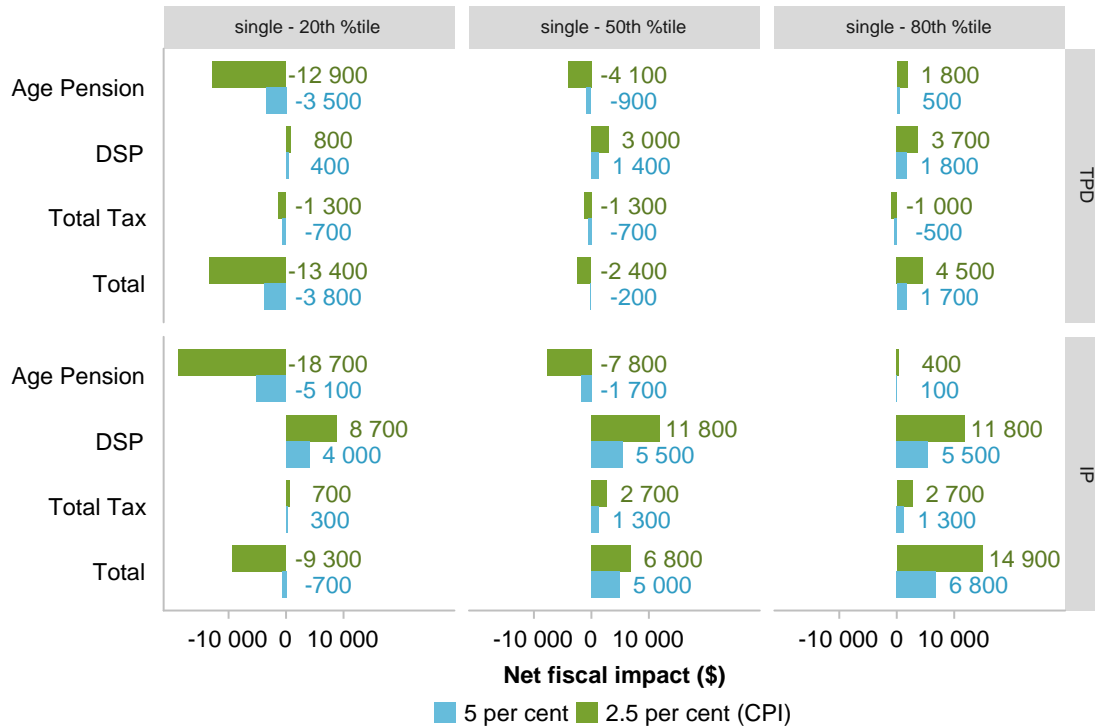## Alternative discount rates

The modelling presented thus far assumes a nominal discount rate of 5 per cent. If model outcomes are discounted by CPI (so that results are in constant dollars but no additional discounting is assumed) then the longer-term impacts (for example, the Age Pension effects) will be given relatively more weight. At the same time the orders of magnitude will be greater across the board as less discounting occurs for all values. Together, the result is that:

- TPD insurance becomes a greater net cost to government for low- and middle-income individuals

- while IP insurance becomes a greater net benefit to government for middle- and high-income individuals (figure 14).

This scenario can be loosely interpreted as the community-wide net fiscal impact for a certain type of individual at a certain point a time, assuming a steady state population and similar indexation rates across financial variables over time.

Figure 14   **Results discounting by CPI**

Single individual

	single - 20th %tile	single - 50th %tile	single - 80th %tile	
Age Pension	-12 900 / -3 500	-4 100 / -900	1 800 / 500	TPD
DSP	800 / 400	3 000 / 1 400	3 700 / 1 800	
Total Tax	-1 300 / -700	-1 300 / -700	-1 000 / -500	
Total	-13 400 / -3 800	-2 400 / -200	4 500 / 1 700	
Age Pension	-18 700 / -5 100	-7 800 / -1 700	400 / 100	IP
DSP	8 700 / 4 000	11 800 / 5 500	11 800 / 5 500	
Total Tax	700 / 300	2 700 / 1 300	2 700 / 1 300	
Total	-9 300 / -700	6 800 / 5 000	14 900 / 6 800	

Net fiscal impact ($)

■ 5 per cent   ■ 2.5 per cent (CPI)

a The default discount rate is 5 per cent real. This scenario is included here for reference.

Source: Productivity Commission estimates.

References

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