

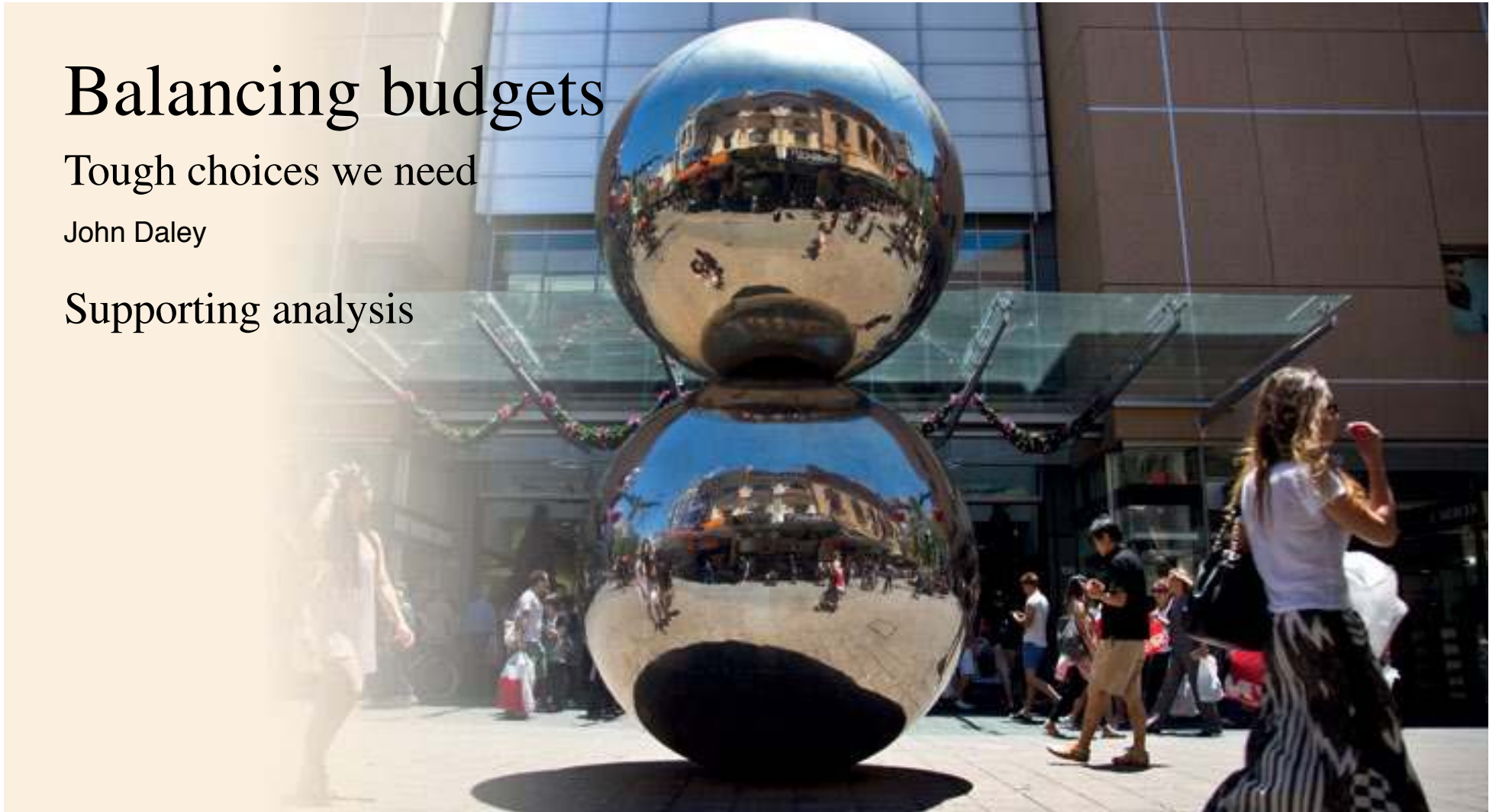
November 2013

Balancing budgets

Tough choices we need

John Daley

Supporting analysis



Founding members



Australian Government



Program support

Higher Education Program



Affiliate Partners

Google

National Australia Bank

Origin Foundation

Senior Affiliates

EY

GE Australia and New Zealand

PwC

Stockland

Wesfarmers

Affiliates

Lend Lease

Mercy Health

Sinclair Knight Merz

The Scanlon Foundation

Urbis

Grattan Institute Report No. 2013-13, November 2013

This *Supporting analysis* publication accompanies a report, *Balancing budgets: tough choices we need*, which can be downloaded from Grattan Institute's website.

This report was written by John Daley, Chief Executive Officer, Grattan Institute. Cassie McGannon, Jim Savage and Amelie Hunter provided extensive research assistance and made substantial contributions to the report. James Button assisted in its preparation. The report draws on published and unpublished work by other Grattan Institute staff, and we thank them for their assistance.

We would also like to thank numerous people from the public policy community, the private sector, and the members of Grattan Institute's Public Policy Committee for their helpful comments as this work was developed. Many of its ideas have been drawn from their suggestions, and it has benefited much from their counsel.

The opinions in this report are those of the authors and do not necessarily represent the views of Grattan Institute's founding members, affiliates, individual board members or reference group members. Any remaining errors or omissions are the responsibility of the authors.

Grattan Institute is an independent think-tank focused on Australian public policy. Our work is independent, practical and rigorous. We aim to improve policy outcomes by engaging with both decision-makers and the community.

For further information on the Institute's programs, or to join our mailing list, please go to: <http://www.grattan.edu.au/>

This report may be cited as:
Daley, J., McGannon, C., Savage, J., and Hunter, A., 2013, *Balancing budgets: tough choices we need – supporting analysis*, Grattan Institute

ISBN: 978-1-925015-49-2

All material published or otherwise created by Grattan Institute is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License

Table of contents

Section 1: Analysis of budget choices

page 4

Proposal	Page in this report	Page in main report
Superannuation and pensions		
Pension and super access age	8	29
Super contributions tax concessions	10	32
Super earnings tax concessions	12	36
Owner-occupied housing and Age Pension assets test	14	37
Housing and capital gains taxes		
Capital gains discounts	16	40
Owner-occupied housing and capital gains tax	18	43
Deductions for negatively geared investment properties	20	45
Other tax exemptions		
GST base broadening	22	49
Payroll tax threshold	24	55
Fuel tax credits	26	57
New taxes		
Fuel excise indexation	28	58
Federal royalties export tax	30	59
Spending cuts		
Transport infrastructure costs	32	65
Industry support	34	69
Private health insurance rebate	36	70
Pharmaceuticals spending	38	70
Cost-effectiveness of treatments	40	70
Defence spending	42	71
School class sizes	44	71
Student subsidies for higher education	46	71
Choices worth less than \$2 billion per year	48	-

Section 2: A brief history of budget repair

page 51

Section 3: A bluffer's guide to budgets

page 56

References

page 60

Section 1: Analysis of budget choices

This supporting analysis accompanies the main report, *Balancing Budgets: tough choices we need*. It contains detailed material on each of the 20 proposals considered in the main report. The material supports the placement of each proposal on the matrix in *Chapter 4 – Framing budget choices* of that report, also reproduced on page 6 of this document.

Each proposal is assessed according to the size of impact on the budget. Using a prioritisation approach, proposals that generate at least \$2 billion in savings are examined using the following methodology. After describing the proposal, we assess it against several criteria:

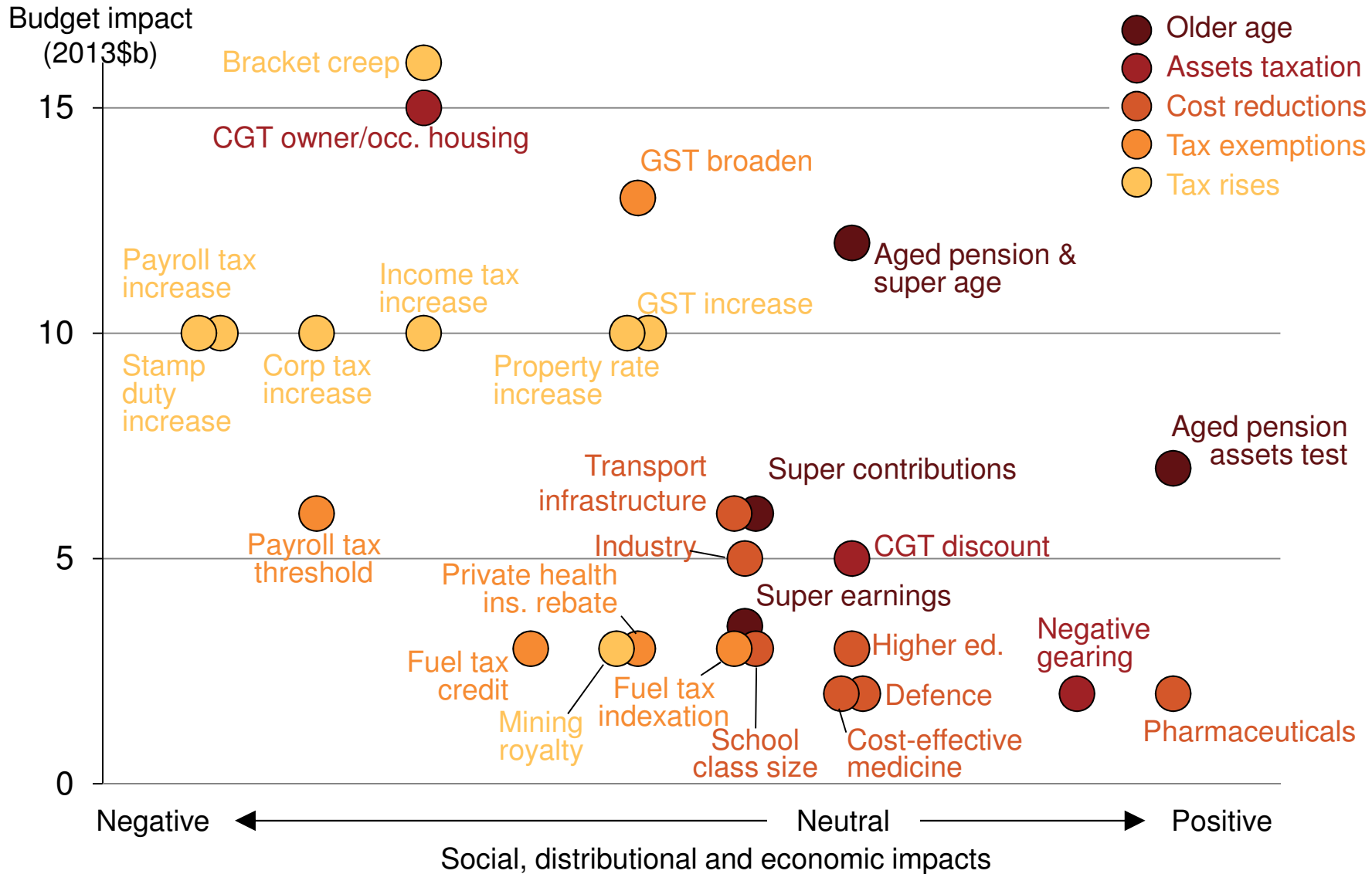
1. Contribution to the budget – measured in terms of the budget savings or increased revenue for one year, once the proposals are fully implemented, expressed in 2013-13 dollars. These are estimates only, arrived at by methods that do not substitute for detailed economic modeling. However, such methods are likely to give fair estimates of the likely magnitude of the economic and non-economic returns, which provide a good basis for prioritising potential reforms.
2. The potential social, economic and distributional impacts. We look at:
 - Social impacts: how will the proposal affect people and their behaviour?
 - Distributional impacts: how will it affect people in the bottom 20 per cent of the income distribution?
 - Economic impacts: will it have a positive or negative impact on economic activity?

For each of these, we allocated a rating on a five-point scale: negative, moderately negative, neutral, moderately positive, and positive. These ratings are not to be treated with spurious precision. For many of these effects there is no common metric, and their relative importance depends on the weighting of different political values. For some proposals, the ultimate impact depends on second-round effects that are difficult to predict. Consequently our assessments are generally directional and aim to produce informed discussion.

3. Confidence in the size of the savings – how confident are we in the size of the savings? Confidence is high if there is concrete evidence about the size of potential benefits. That confidence is affected by factors such as the complexity of the drivers, the uncertainties inherent in those drivers, the potential behaviour change as a result of the proposal, and the availability and quality of underlying data.

Proposals are placed on the matrix on page 6 based on the contribution to budget and the sum of ratings allocated for social, distributional, and economic impacts. Proposals that generate less than \$2 billion are not placed on the matrix, but are summarised on pages 48-9.

Impact of proposals worth at least \$2 billion to budgets



Not shown (worth less than \$2 billion): Middle-class welfare; public sector efficiency; first home buyers' assistance; avoidable hospital costs; end of life care; congestion charging. Values are impact for one year on combined Commonwealth and state budgets, at full implementation, in \$2013.

Summary of impact of proposals worth at least \$2 billion to budgets

Group	Proposal	Social impacts	Impact on bottom 20%	Economic impacts	Value to budget	Confidence in savings
Super and pensions	Age Pension and super access age	Mod negative	Mod negative	Positive	\$12b	Medium
	Superannuation contribution tax concessions	Neutral	Neutral	Mod negative	\$6b	Med - High
	Superannuation earnings tax concessions	Neutral	Neutral	Mod negative	\$3b	Med - High
	Age Pension assets test	Positive	Neutral	Mod positive	\$7b	Med - High
Housing and capital gains	CGT discounts	Neutral	Neutral	Neutral	\$5bn	Low
	Owner-occupied housing and CGT	Negative	Neutral	Negative	\$15b	Low
	Negative gearing	Positive	Neutral	Neutral	\$2b	Low
Other tax exemptions	GST base	Neutral	Mod negative	Mod negative	\$13b	High
	Payroll tax threshold	Negative	Negative	Mod negative	\$6b	Med - High
	Fuel tax credit	Mod negative	Mod negative	Mod negative	\$3b	Med - High
New taxes	Fuel excise indexation	Mod positive	Mod negative	Mod negative	\$3b	Medium
	Federal royalties export tax	Mod negative	Neutral	Mod negative	\$3b	Low
Spending cuts	Transport infrastructure costs	Mod negative	Neutral	Neutral	\$6b	Low
	Industry support	Mod negative	Mod negative	Mod positive	\$5b	Med - High
	Private health insurance rebate	Mod negative	Mod negative	Neutral	\$3b	Medium
	Pharmaceuticals spending	Positive	Neutral	Mod positive	\$2b	Med - High
	Cost-effective treatments	Mod negative	Neutral	Mod positive	\$2b	Low
	Defence spending	Neutral	Neutral	Neutral	\$2b	Low
	School class sizes	Neutral	Mod negative	Neutral	\$3b	Med - High
	Student subsidies for higher education	Neutral	Neutral	Neutral	\$3b	High

Note: Values are impact for one year on combined Commonwealth and state budgets, at full implementation, in \$2013.

Summary of impact of tax rises worth \$10 billion to budgets

Proposal	Current rate/s	Indicative new rate/s	Social impacts	Impact on bottom 20%	Economic impacts	Value	Confidence in savings
Raise corporate tax rate	30%	34%	Negative <i>Lowers employment and real wages</i>	Moderately negative <i>Lowers employment and real wages</i>	Negative <i>Discourages investment</i>	\$10b	Med-high
Raise income tax rates	19%, 32.5%, 37%, 45%	21%, 34.5%, 39%, 47%	Negative <i>Reduces post-tax incomes</i>	Neutral <i>Bottom 20% pay little/no income tax</i>	Negative <i>Reduces participation incentives</i>	\$10b	High
Raise GST rate ¹	10%	12%	Neutral <i>Less drag on growth than other taxes</i>	Moderately negative <i>Regressive impact mitigated by welfare</i>	Moderately negative <i>Less drag on growth than other taxes</i>	\$10b	High
Land tax on municipal rate base	Various	Increase current municipal rate revenue by 75%	Moderately negative <i>Hard for cash-poor property owners</i>	Moderately negative <i>Relatively few own property</i>	Neutral <i>Efficient tax on a broad base</i>	\$10b	High
Raise payroll tax rates	5.5% ²	9.1%	Negative <i>Discourages employment</i>	Negative <i>Discourages employment</i>	Negative <i>Discourages employment</i>	\$10b	Medium
Raise stamp duty rates	4.8% ³	8.9%	Negative <i>Discourages mobility</i>	Negative <i>Discourages mobility</i>	Negative <i>Discourages mobility</i>	\$10b	Medium
Bracket creep	Maintain current income tax thresholds, with 2.5% wage inflation p.a., for 10 years		Negative <i>Reduces post-tax incomes</i>	Neutral <i>Bottom 20% pay little/no income tax</i>	Negative <i>Reduces participation incentives</i>	\$16b	Med-high

Notes: 1. Assumes 10% of increased revenues used to compensate those on low incomes. 2. Average rate of all jurisdictions. 3. Indicative only; based on marginal rate applying to median capital city house price, average rate of all jurisdictions.
Source: Grattan analysis of KPMG Econtech (2010); Daley *et al* (2012a); Daley *et al* (2012b); ABS (2013j) cat no 6416 Table 7; ABS (2013s) cat no 5506 Tables 10 and 18; ATO (2013i); PwC (2013); Rawdanowicz *et al* (2013); Treasury (2013a); Treasury NSW (2013a)

Age Pension and superannuation access age

Proposed budget measure

- The age eligibility for both the Age Pension and superannuation would be lifted to 70 for both men and women. These age rises would be phased in more rapidly than currently planned.¹
- Age pension age is currently 64.5 for women, and 65 for men. In 2017, these ages will increase at the rate of six months every two years, reaching 67 in July 2023.²
- The preservation age for superannuation — the age at which people can readily withdraw any or all of their super balance without paying tax is 60. It is possible to withdraw some super without paying tax under a variety of conditions from age 55, although this age will begin to increase in 2015, reaching 60 by 2024.³
- A superannuation preservation age lower than the age pension age results in a significant drawdown of superannuation before pension age. Substantial tax concessions are provided for superannuation, but draw-downs before pension age do nothing to reduce age pension liabilities.⁴

Social impacts

- The substantial increase in retirement volumes at preservation age and pension age suggests that even a small pension materially affects participation rates. Many would consider themselves “worse off” if they retire later in life.
- Increased older age participation may require substantial cultural shifts to incorporate an additional cohort of mature workers in the workforce.
- Some older people, particularly those who have held physically demanding jobs, may be unable to work into their late 60s and will need to access government support earlier (disability pensions already play such a role).
- Current generous arrangements are unlikely to be sustainable, and are creating intergenerational inequities as today’s workers pay for benefits they will never receive.

Social impacts: Mod negative Impact on bottom 20%: Mod negative

Budget impact

- Lifting the retirement age could increase labour-force participation by about 2 per cent, increasing taxable income and tax receipts.
- Grattan modelling based on the Household Expenditure Survey estimates a \$9b yearly increase in tax receipts by 2023.⁵
- For many, more time in the workforce would lead to higher superannuation balances, further reducing long-term pension payments.
- Expenditure on part pensions would reduce for those aged 65-69.
 - Most people going onto the full pension at pension age come off other payments (like DSP); there will be minimal savings from this cohort.⁶
 - However, many people go onto a part pension at pension age: an indicative model suggests savings of at least \$3b.
 - These savings would partially offset savings made under the proposal to include owner occupied housing in the Age Pension asset test.

Contribution to budget: \$12b

Confidence: Medium

Economic impacts

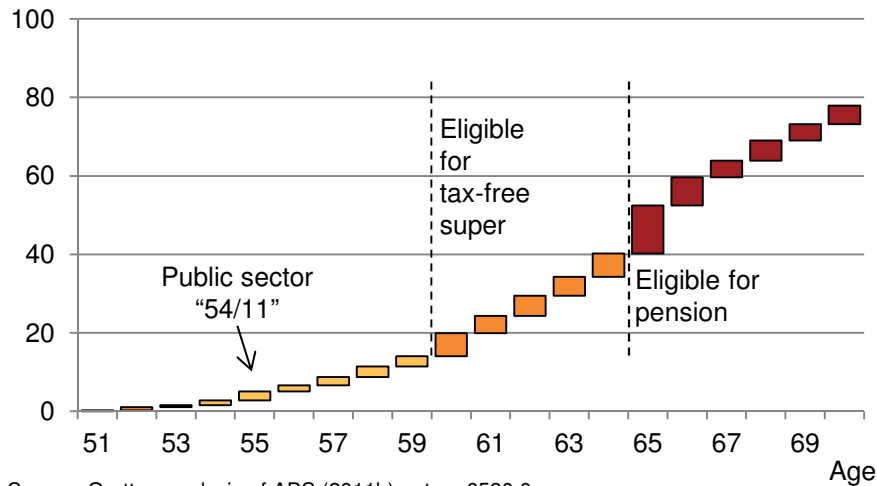
- Increasing the eligibility age for both the Age Pension and superannuation preservation age will create incentives to retire later, increasing labour-force participation rates among older workers.
- As estimated in *Game-changers*, raising the pension and superannuation preservation age could lift economic growth by about \$25b a year.¹

Economic impacts: Positive

Age Pension and superannuation access age

Policy appears to materially affect retirement decisions

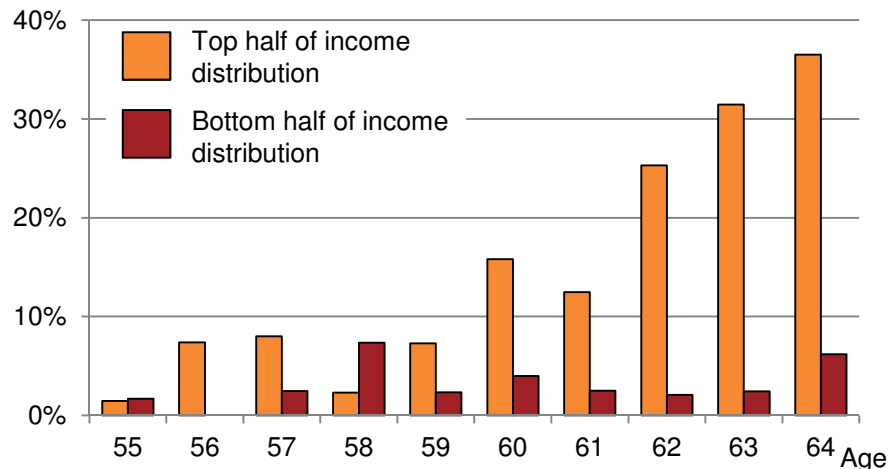
Cumulative per cent of male labour force retiring by age



Source: Grattan analysis of ABS (2011b) cat no 6530.0

Those withdrawing super before pension age are richer

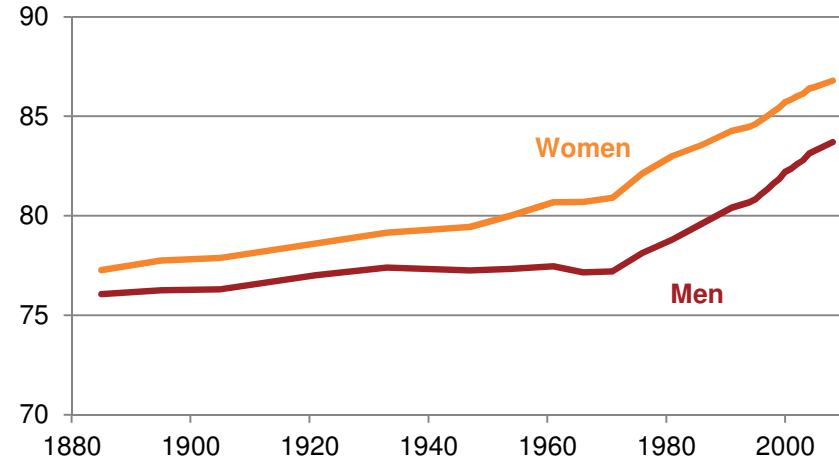
Proportion of age cohort receiving some superannuation payment



Source: Grattan analysis of ABS (2011c) cat no 6503.0

Life expectancy at pension age has increased rapidly since 1970

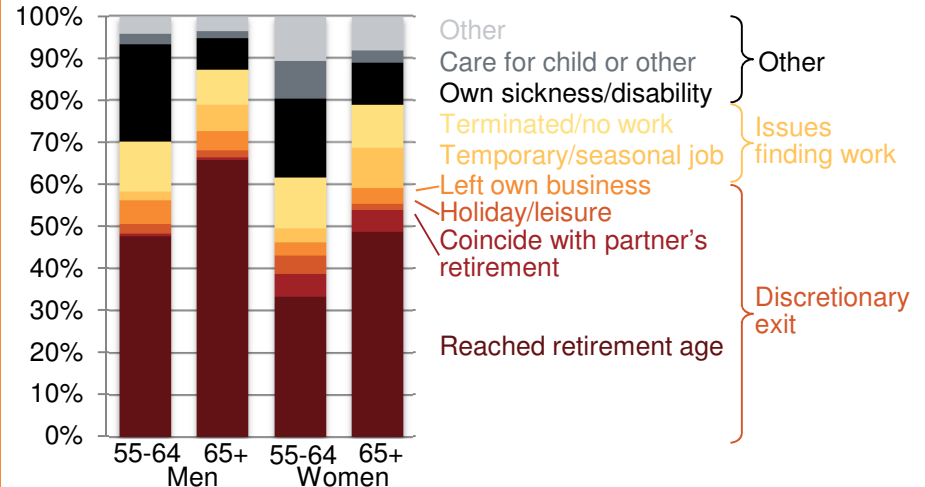
Life expectancy at 65 years of age (years)



Source: Grattan analysis of ABS (2008) cat no 6565.0.55.001

Most older workers choose to retire rather than being forced out

Reason for retirement



Source: ABS (2011d) cat no 6238.0

Superannuation contribution tax concessions

Proposed budget measure

- The proposed measure would tax contributions to superannuation at marginal rates from a lower threshold.
 - Tax would be paid at marginal rates on pre-tax contributions greater than \$10k, regardless of age
 - Only 15% tax is paid on pre-tax superannuation contributions less than thresholds determined by age.
 - In 2013-14, threshold is \$25k for under 60s, and \$35k for over 60s
 - In 2014-15, threshold is \$30k for under 50s, and \$35k for over 50s¹
- The proposal would align superannuation policy more closely with its original purpose of reducing future Age Pension liabilities.
 - Lower tax on pre-tax superannuation contributions primarily benefits those who can provide for themselves in retirement anyway.
 - The high contribution caps reduce current tax revenues, but do little to reduce future Age Pension liabilities.

Budget impact

- Lowering the concessional contributions cap would increase the tax rate for those currently contributing more than \$10k a year to super.
- Grattan modelling based on a sample of tax returns suggests that the proposal would contribute around \$6b per year.
 - This number assumes that concessional contributions are made up of compulsory contributions plus non-compulsory contributions up to the cap for over 60s who earn more than \$80k.
 - Decreasing the concessional contributions cap would decrease super balances, reducing tax revenue from super earnings. Over time, this could reduce revenues by \$0.5b.
- The net tax revenue increase may be less if voluntary superannuation contributions are diverted into other tax-effective investments – although these typically face higher tax rates than superannuation.

Contribution to budget: \$6b

Confidence: Medium

Social impacts

- Some of those who contribute above the proposed threshold will qualify for the Age Pension at some stage during their retirement, particularly those who retire in the next 20 years and did not accumulate superannuation for their entire working life. The proposal would reduce the super balances of this cohort, increasing Age Pension liabilities.²
- The changed contribution concessions would materially reduce the retirement incomes of high earners. For example, someone in the top 10 per cent of lifetime incomes would see their retirement income fall from \$165k per year to about \$145k, albeit still well above the level required for a comfortable retirement.
- The change would be strongly progressive: the top thirty per cent of income earners would pay over 90 per cent of the additional taxes.

Social impacts: Neutral

Impact on bottom 20%: Neutral

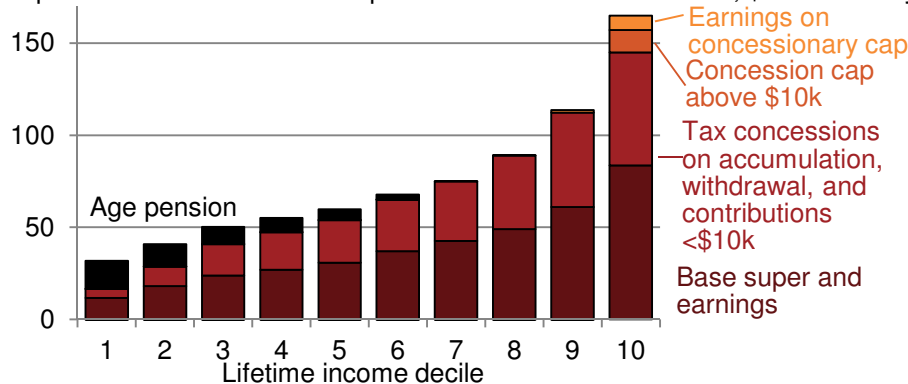
Economic impacts

- A high concessional contributions cap provides savers with a higher effective real interest rate, and so probably increases savings. Reducing the cap would probably reduce aggregate savings.
- Future pension liabilities are likely to increase, although by a smaller amount than the tax would raise, as the tax would fall primarily on those unlikely to draw large age pensions in the future.
- If superannuation becomes a less tax-effective savings vehicle, more savings would flow into other tax-effective vehicles, especially residential property.
- Higher effective rates of income tax for mature workers may reduce participation rates of those in their 60s by <1 per cent, assuming a labour supply elasticity of 0.2.³

Economic impacts: Moderately negative

Superannuation contribution tax concessions

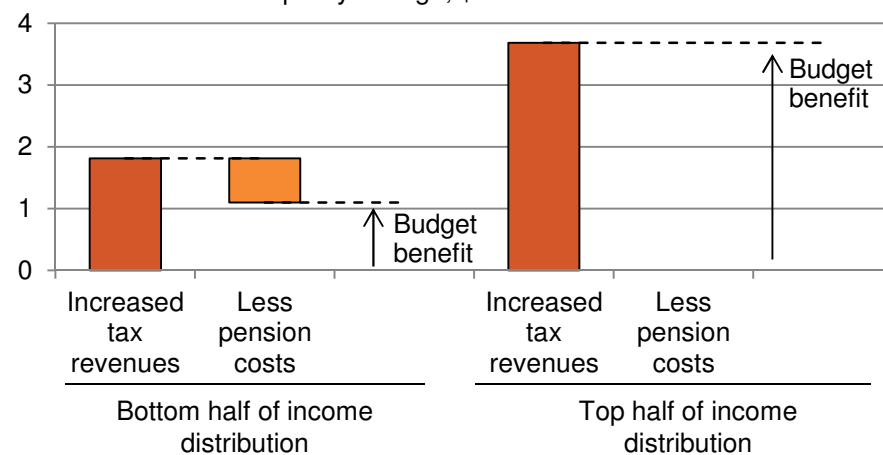
Deposit tax concessions barely affect retirement incomes for most
Impact of tax concessions and pension on retirement incomes, \$'000 annually



Note: These numbers come from a lifetime-in-a-day Monte-Carlo analysis of current policy settings. Income deciles reported are for lifetime average; age-income decile transition probabilities are estimated from HILDA 2005, 2010 waves. Age/income decile incomes are drawn from ATO tax sample. Historical superannuation returns are drawn from APRA's fund-level data. Source: Grattan analysis of ATO (2013b); APRA (2013b); HILDA (2012)

Higher tax revenues would more than offset increased pension costs due to reduced super with a lower concessionary cap

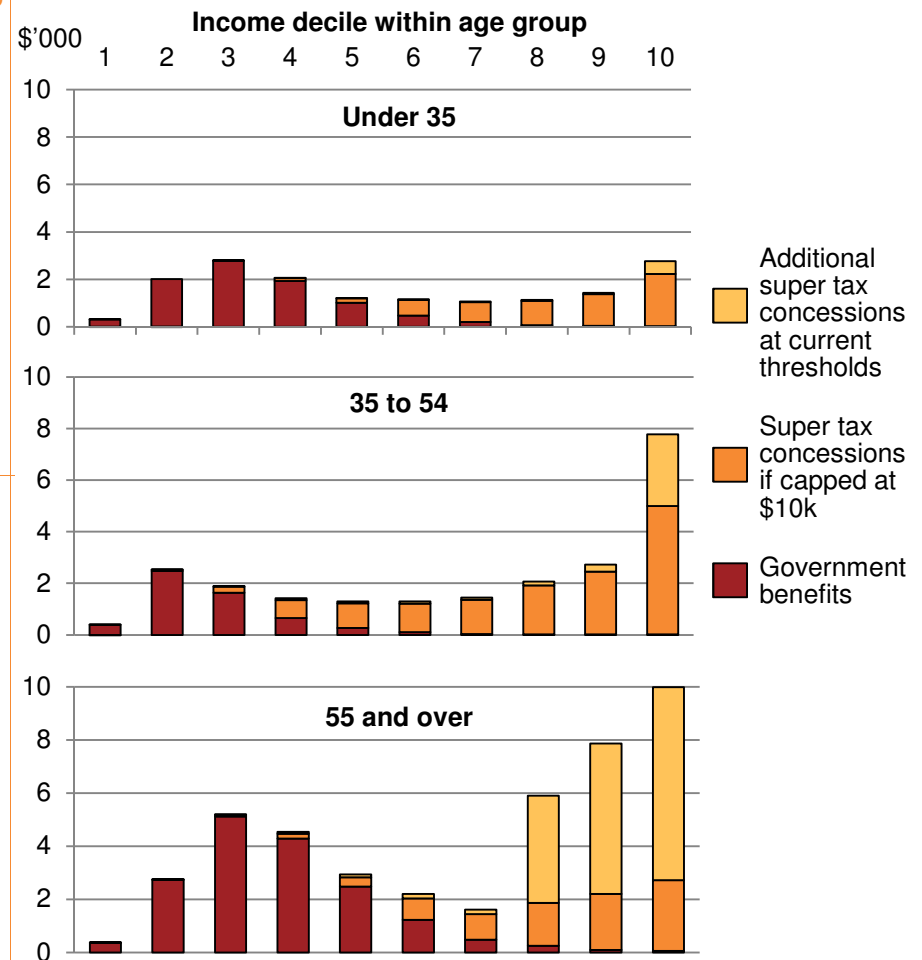
Revenues and costs of policy change, \$b



Note: Values show the long run budget impacts for new entrants into the super system, expressed in 2013-14 budget equivalent. Source: Grattan analysis of ATO (2013b); APRA (2013b); HILDA (2011).

Super tax concessions are skewed towards the rich, and are greater than welfare payments to the poor

Superannuation concessions and government benefits per person per year



Note: assumes over 60s earning more than \$60k/yr contribute to concessionary threshold. This is an individual-level analysis, and so does not pick up household-level income. Source: Grattan analysis of ATO (2013i)

Superannuation earnings tax concessions

Proposed budget measure

- The proposal would tax all superannuation earnings for over 60s on the same basis that superannuation earnings are taxed for younger people.
- Most superannuation earnings supporting an income stream for retirees 60 and over are currently untaxed.¹
 - Superannuation earnings inside a fund are taxed at 10 per cent for capital gains and 15 per cent for other earnings (dividends and interest).
 - Once a retiree (over 60) converts the fund into a pension, the earnings from the fund are untaxed.
 - Tax-free super for those over 60 was granted in 2006, when most perceived that high government revenues would continue.²
- Revenue foregone from the tax-free super for over-60s is around \$3b.³
- Tax-free super results in larger private pension payments and larger superannuation balances. Taxing super for over-60s may lead to increased claims on the Age Pension.

Social impacts

- The vast majority of untaxed pensions are paid to the richest pensioners
 - Taxing all super earnings would significantly affect only the richest 30 per cent of retirees in their 60s, and the richest 20 per cent of all retirees.³
 - Those receiving large untaxed payments from private pensions also tend to earn non-pension incomes; taxing their superannuation earnings will not push them into poverty.⁴
- Those at the bottom of the income distribution do not have large superannuation balances, and so taxing superannuation earnings will not affect them much.⁶
 - Consequently there are few equity implications from taxing superannuation at the same rate for all age groups

Social impacts: Neutral

Impact on bottom 20%: Neutral

Budget impact

- The reform would contribute around \$3b per year.
 - Total superannuation balances of those 60 and over are around \$700bn
 - Balances in APRA-monitored superannuation funds (not SMSF) belonging to over-60s are around \$362b.³
 - Balances in SMSF superannuation funds belonging to over-60s are estimated at \$362b: total SMSF assets are \$496b; 45 per cent of members are 60 and over;⁴ the average over-60 has 57 per cent more in APRA funds than the average under-60.⁵ This suggests that over-60s hold around 70 per cent of total SMSF stock.
- The average fee-adjusted returns on APRA-monitored super funds were 4.4 per cent over the decade 2003-2012. If $\frac{3}{4}$ of over-60s accounts produce an income stream at this rate, they would generate \$23b of untaxed income, implying around \$3b of tax expenditure.

Contribution to budget: \$3b

Confidence: Med-high

Economic impacts

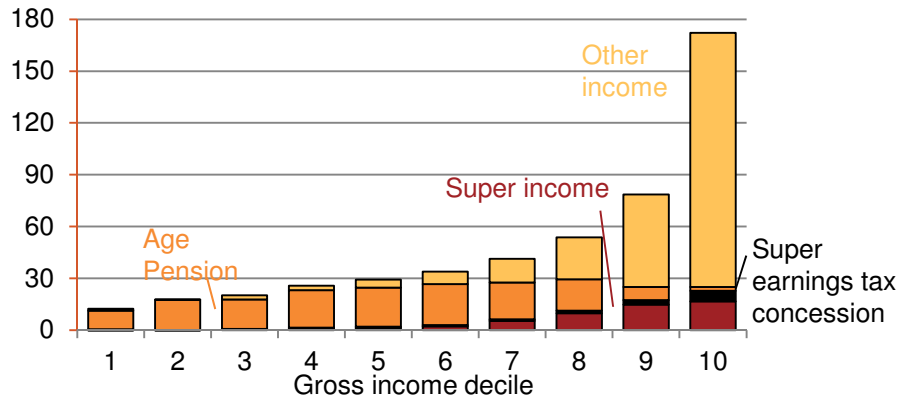
- Super income taxes are a relatively volatile tax source
 - Losses during downturns generate negative tax liabilities, which are carried forward into profitable years. This means that market upturns will take some time to generate revenues. Positive revenues should be expected over the cycle, however.
- Taxes on earnings of savings tend to reduce the wealth stock over time.⁷
 - This may provide a disincentive to save for some retirees. Given alternative savings vehicles mostly tax at a higher rate than superannuation, this effect should be moderate.
- To the extent that tax-free super is used as a tax minimisation strategy by over-60s (using Transition to Retirement Pensions), abolishing it is equivalent to increasing income tax rates. This may reduce labour-force participation rates for those affected.⁸

Economic impacts: Moderately negative

Superannuation earnings tax concessions

Virtually all super earnings tax concessions go to the richest pensioners

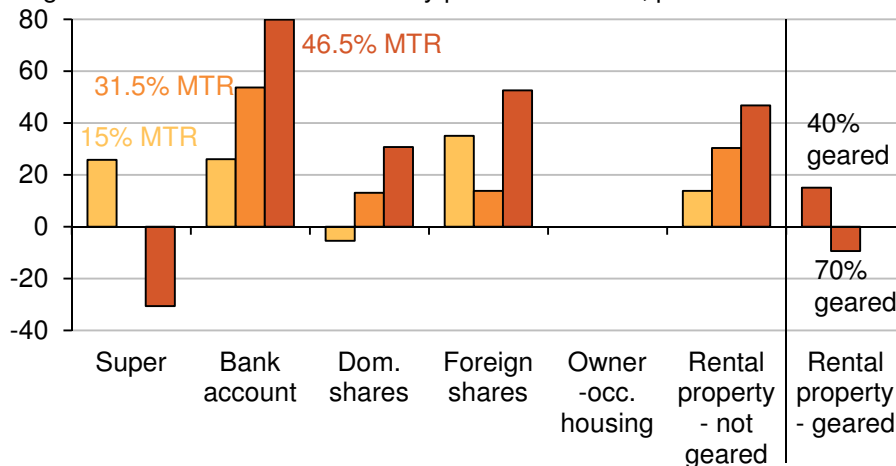
Income by source for those in their 60s, by income decile, \$k yearly



Note: Numbers presented are the income decile averages for each income category for those aged 60-69. Source: Grattan analysis of ABS (2011c) cat no 6503.0

Reducing super concessions will not divert much investment as it remains much more attractive than other investments

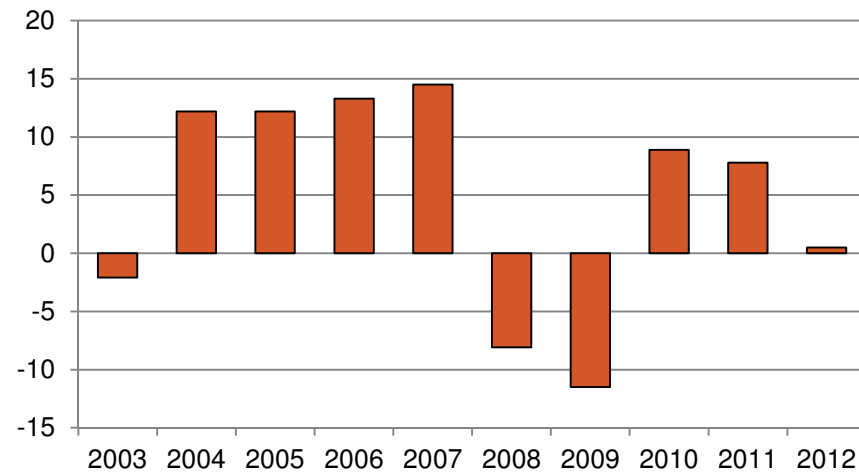
Marginal tax rates of asset income by personal tax rate, per cent



Note: This analysis was conducted for the *Australia's Future Tax System* report in 2010. Marginal tax rates have changed since then. Source: Treasury (2010)

Super returns are a volatile tax base

Rates of return for superannuation funds, per cent annually



Source: APRA (2013a)

Age-based superannuation taxation can result in very different taxation of people with similar incomes

Labour income, super earnings, and tax paid, \$k yearly



Salary package:

Both \$100k

Super balance:

Both \$500k

Super contributions:

Yasmin, \$8.5k

Olivia, \$35k

Interest/dividends earned on super:

Both \$35k

Note: Numbers based on 2013 marginal tax rates, and earnings within the fund of 7 per cent. Source: Grattan analysis

Owner-occupied housing and Age Pension assets test

Proposed budget measure

- Owner occupied housing would be included in the assets test for the Age Pension. The proposal would:
 - remove differences in the assets test between homeowners and renters
 - allow both home-owners and renters to draw a payment similar to rent assistance, though this would be subject to the same assets test
 - permit home-owners without liquid assets to receive the Age Pension, but if so the government can claim back this money when the dwelling is transferred
 - provide pensions to home-owners if their net assets (including debt secured against their dwelling) are under the assets test threshold.
- Current government expenditure on the Age Pension will be \$39.4b in 2013-14 and is expected to grow.¹ An assets test is in place which reduces payment rates of the Age Pension based on wealth.²
- However, owner occupied houses are excluded from the assets test. This policy is costly and inequitable. A millionaire, whose sole asset is their dwelling, can receive the full pension. But if that wealth were held in a diversified portfolio, they would receive nothing.

Social impacts

- Policy would encourage more efficient use of housing. Pensioners are currently incentivised to stay in houses larger than they need, as if they sell and have a surplus, this cash will be asset-tested and their pension will be reduced. Including houses in the assets test will encourage people to downsize their housing
- Policy would encourage retirees to invest in a more balanced portfolio, as it reduces incentives to own property over other asset classes.
- Policy would increase equity
 - It is fairer to those who do not own houses, but have other assets.
 - Current generous arrangements are unlikely to last, and so create intergenerational inequities as today's workers pay for benefits they will never receive.

Social impacts: Positive

Impact on bottom 20%: Neutral

Budget impact

- Including the primary residence in the Age Pension assets test would decrease Age Pension payments to some, and result in the government accumulating a charge against others.
- Modelling by Grattan based on the Household Expenditure Survey suggests the proposed reforms would save about \$7b/yr in accrual terms, and about \$5b/yr in cash.³ These are the most conservative of several estimates.
 - If the retirement age is increased—as already legislated—to 67, then the proposal, would save about 18% of outlays on the Age Pension – about \$7b in 2012-13
 - Cash savings would be less. If all those with less than \$50k in non-home assets took up the option for a pension securing against their house, it would reduce the cash savings by about \$2b/yr.
 - Changes to the retirement age would interact with these estimates.
- Tightened pension eligibility would reduce government costs of concessions such as car registration, utilities, property rates and health

Contribution to budget: \$7b

Confidence: Med-high

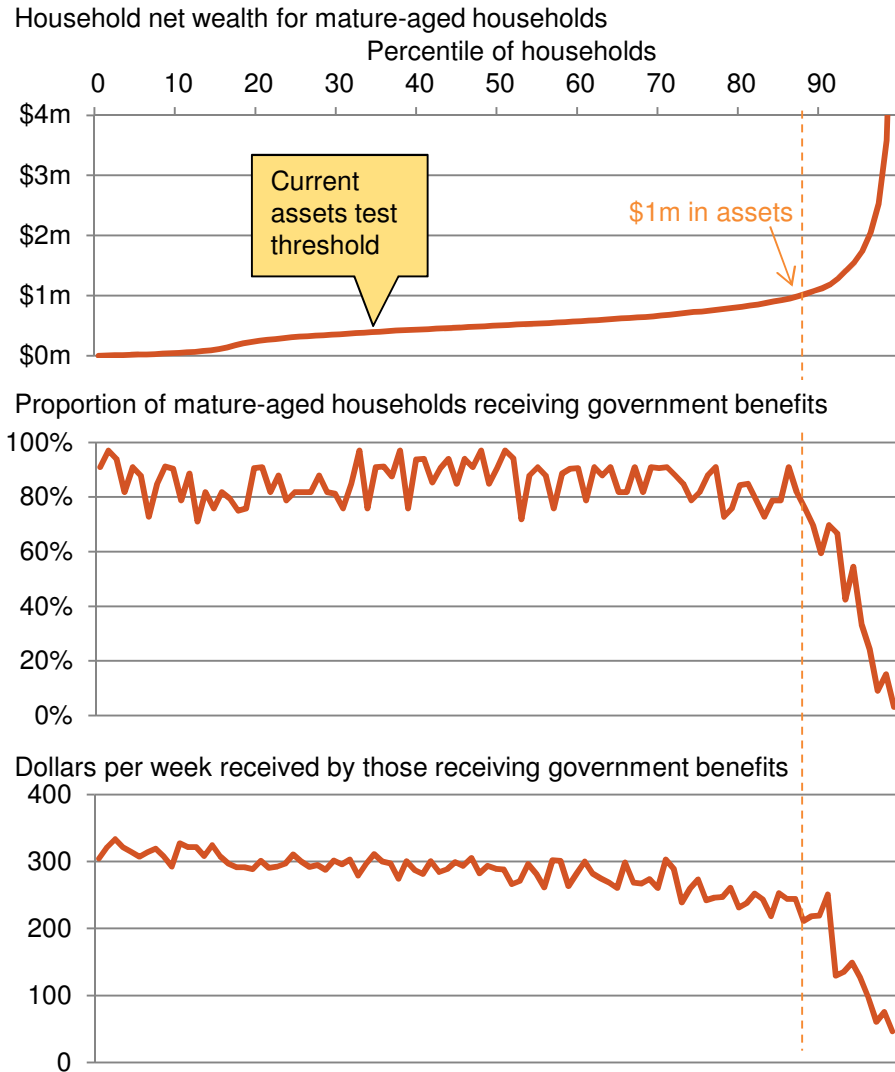
Economic impacts

- Policy would reduce distortions in the housing market by encouraging older people to downsize earlier
- Counter-measures would be required to potential responses such as structuring affairs through family trusts, etc.

Economic impacts: Moderately positive

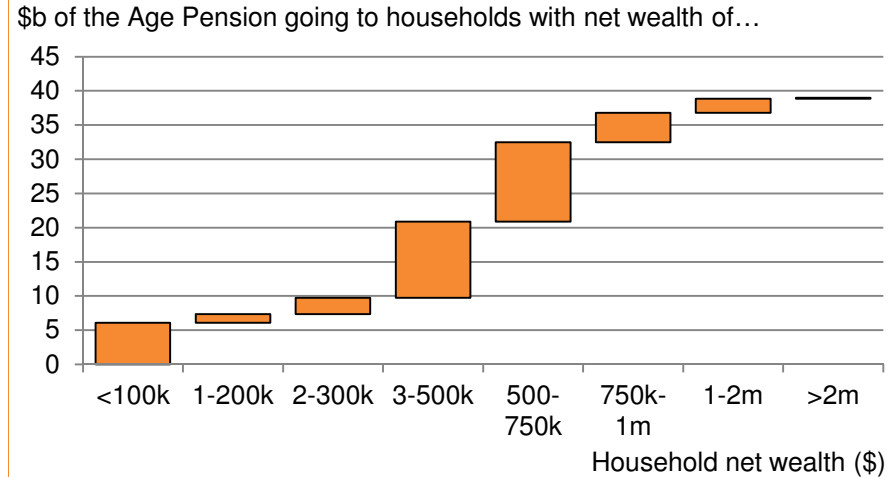
Owner-occupied housing and Age Pension assets test

Most households with \$1m in assets still receive a substantial pension



Note: 'Mature-aged households' are those in the survey whose reference person (generally the 'head' of household) is 65 or older. Source: Grattan analysis of ABS (2011c) cat no 6503.0

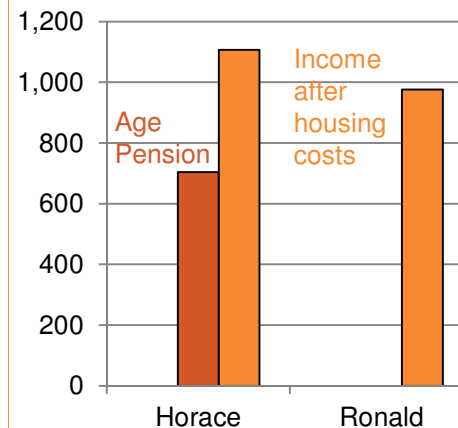
Almost \$20b of Age Pension spending goes to households with more than \$0.5m in net wealth



Source: Grattan analysis of ABS (2011c) cat no 6503.0

The Age Pension assets test results in large inequities

Comparison of Age Pension and income for two single retirees, \$ fortnightly



Horace

- Total wealth \$650k
- Owns \$500k home and has \$150k in super
- Receives \$10.5k/yr from super
- Receives \$704/fortnight in pension
- Also benefits from pensioner concessions

Ronald

- Total wealth \$650k, all in super
- Rents, paying \$20k/y
- Receives \$45.5k/y from super
- **Receives no pension or rent assistance**

Source: Grattan analysis of DHS (2013a)

Capital gains tax discounts

Proposed budget measure

- The proposal would eliminate the capital gains tax (CGT) discount so that capital gains are taxed at the same rate as income.
- Capital gains tax (CGT) is levied on assets that are sold for more than their nominal cost plus the cost of improvements.
- The CGT discount reduces the tax paid on capital gains on assets owned for more than a year.¹
 - Individuals and trusts only pay tax on 50% of their capital gains.
 - Superannuation funds only pay tax on 33% of their capital gains.
 - Special provisions apply to the sale of a small business.
- An alternative design would inflate the cost base of assets at CPI (the original 1985 design for CGT).
 - However, taxing asset gains due to inflation is consistent with taxation of other investments such as bank deposits.
 - This design would generally collect more tax than the CGT discount arrangement, but not by much unless asset prices go up much faster than inflation.
- Another alternative would simply reduce the discount to 40%.²

Social impacts

- Removing CGT discounts may reduce incentives for entrepreneurship as the returns from selling a successful business would be lower, but these are a small part of the total CGT collected.
- Removing CGT discounts would be progressive as capital gains are primarily earned by higher income earners.^{4,5}

Social impacts: Neutral

Bottom 20%: Neutral

Budget impact

- The proposal would increase revenues by \$5 b/yr.³
 - In 2012-13, capital gains tax expenditures were worth \$5.4 billion, with \$4.7 billion in tax expenditures provided to individuals and trusts.
- Future tax payable depends on asset price appreciation rates and interest rates: both are inherently uncertain.
- People may seek more beneficial investment strategies in response to this proposal. However, as CGT would apply to all asset classes, bar owner occupied housing, it is difficult to see what would become a more attractive investment.
- This proposal is independent of the proposals for CGT on owner-occupied housing (p18) and negative gearing (p20), which assume the discount is retained.

Contribution to budget: \$5b

Confidence: Low

Economic impacts

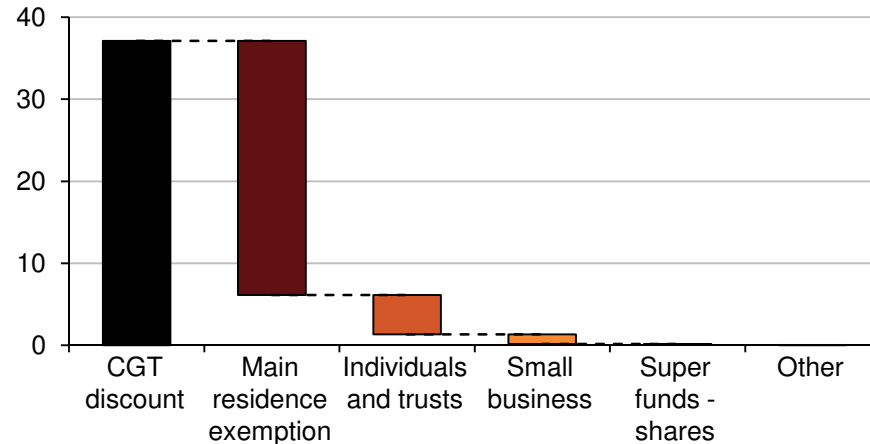
- The proposal might discourage investment by reducing returns on invested capital.^{6,7}
 - This effect is limited to individual and small business investors, as the discount is smaller for superannuation funds, and does not apply to larger businesses.
- The proposal might encourage lock-in to existing assets:
 - Investors might avoid sales that would crystallise a capital gain.^{5,8,9}
 - In particular, there would be greater disincentives to rebalancing portfolios to maintain diversity.
 - US evidence suggests this is a limited problem in practice.⁵
- The proposal would reduce dead-weight costs of structuring transactions artificially to classify gains as capital rather than income.

Economic impacts: Neutral

Capital gains tax discounts

Owner occupied housing dominates the value of CGT discounts

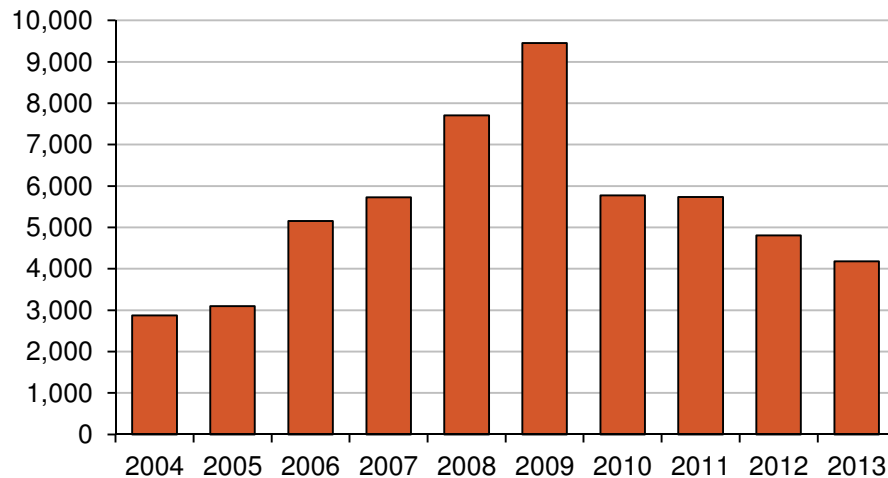
Budget impact of CGT discounts, 2010-11, \$b



Note: Excludes countervailing impact of unclaimed interest deductions. Source: Treasury (2013c)

The value of CGT discounts for individuals varies over time

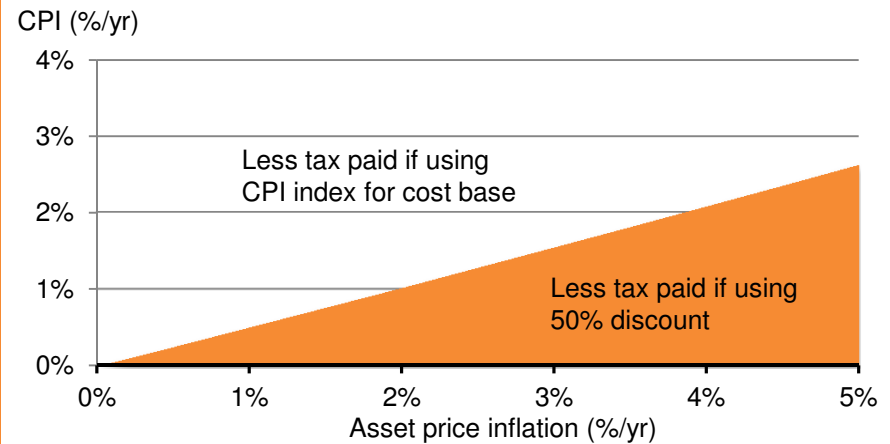
CGT tax expenditures for individuals and trusts, \$m, \$2012-13



Source: Treasury (multiple years-b)

Alternative design that indexes cost base at CPI may or may not reduce tax paid, depending on asset price increase and CPI

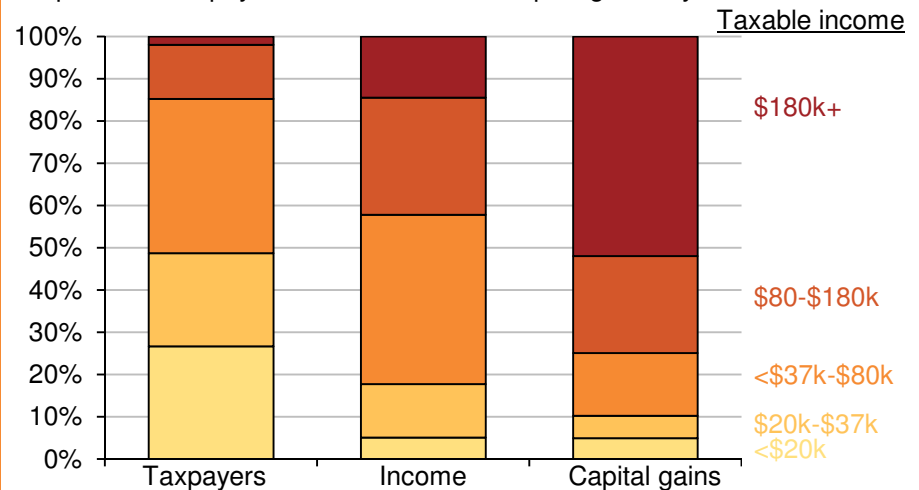
Tax benefit of 50% CGT discount relative to indexed cost base



Assumes asset sold after 5 years, 30% marginal tax rate. Source: Grattan analysis

Higher income earners benefit much more from CGT discounts

Proportion of taxpayers, income and total capital gains, by tax bracket



Source: ATO (2013i) Tables 7.10 and 7.11

Capital gains tax on owner-occupied housing

Proposed budget measure

- The proposal would make owner-occupied housing liable for capital gains.
 - To maintain parity with other investments that are taxed, deductions would be allowed for housing maintenance, and mortgage interest
- Owner-occupied housing is currently exempt from capital gains tax (CGT).
 - Owner-occupied housing has historically been treated differently, through exemptions from CGT, the aged pension assets test, and land tax.^{1,2}
 - Owner-occupied housing provides a number of benefits including locking in the cost of housing, as a vehicle for investment and as a form of enforced retirement savings. There are also significant non-financial benefits.¹

Budget impact

- The proposal would generate little additional budgetary revenue
 - CGT on owner-occupied housing would raise \$18b/yr before deductions with a 50 per cent discount, or \$36b/yr before deductions if the CGT discount is abolished.³
 - Deductions accrued in a year for mortgage interest and home improvement would generally be larger than CGT payable if a 50% discount is applied – deductions on home-owner mortgages would be \$19b in 2012-13.⁴
 - Tax payable depends on house price appreciation rates, initial leverage, interest rates, repayment rates, and how long the housing is owned: for many households minimal tax would be payable.
 - Some tax would in fact be paid, as individual outcomes will be better than the aggregate, and some households would not borrow.

Contribution to budget: \$15b

Confidence: Low

Social impacts

- The proposal would add to the other already high transaction costs of moving home, including stamp duty, estate agency costs, and impact on the pension assets test.¹
- The proposal may encourage oversized housing.¹
 - First home buyers would try to buy larger houses than they currently need to avoid a future CGT liability associated with up-sizing.
 - Shrinking households would be discouraged from down-sizing.¹
- People who saved for retirement primarily through housing would be disproportionately affected, without careful transitional arrangements.
- The proposal would be progressive as the CGT exemption disproportionately favours those in top two income quintiles.^{1,5}

Social impacts: Negative

Bottom 20%: Neutral

Economic impacts

- Higher transaction costs on moving might lead to higher unemployment.
- The proposal would increase dead-weight costs of compliance and record-keeping of housing maintenance and interest payments.
- US experience suggests negative outcomes from mortgage interest deductibility:
 - It increases incentives for households to borrow for consumption and increase their housing debt.⁶
 - The cost of owner-occupied housing may be distorted relative to other investments⁷ and incentives for oversized housing increases spending on housing, crowding out more productive investment.⁷
 - House prices may rise as mortgage interest deductibility tends to be capitalised,⁸ so home ownership rates are unlikely to increase.⁹

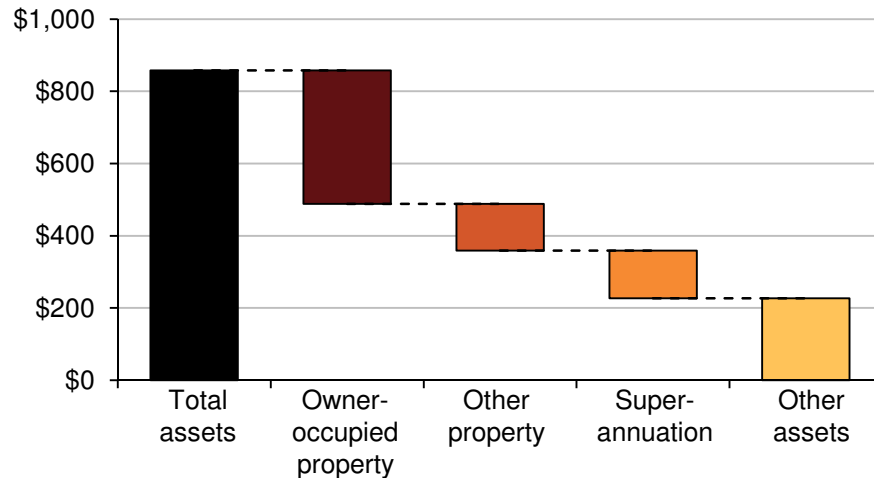
Economic impacts: Negative

Sources: 1 Kelly, Harrison *et al* (2013) 2. Treasury (2010) 3. Grattan analysis of Treasury (multiple years-b), 5-year average from 2008-09 to 2012-13 4. Grattan analysis of RBA (2013b) Table D2 and RBA (2013a) Table F5, assumes an average marginal tax rate of 30 per cent 5. Yates (2009); Yates *et al* (2011); Eslake (2013) 6. Bartlett (2012) 7. Ventry (2010) 8. Bourassa *et al* (2012) 9. Glaeser and Shapiro (2003)

Capital gains tax on owner-occupied housing

Owner-occupied housing is the largest household asset

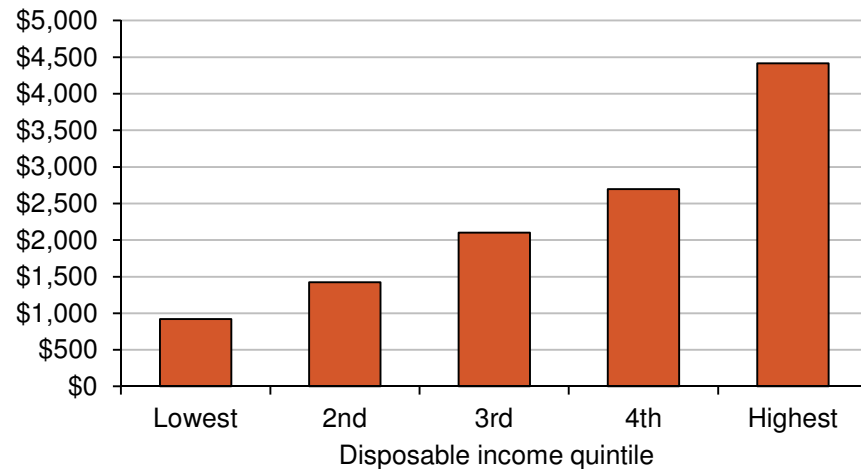
Average household wealth 2011-12 (\$000's)



Source: ABS (2013m) cat no 6554.0

CGT exemptions benefit those in higher income quintiles

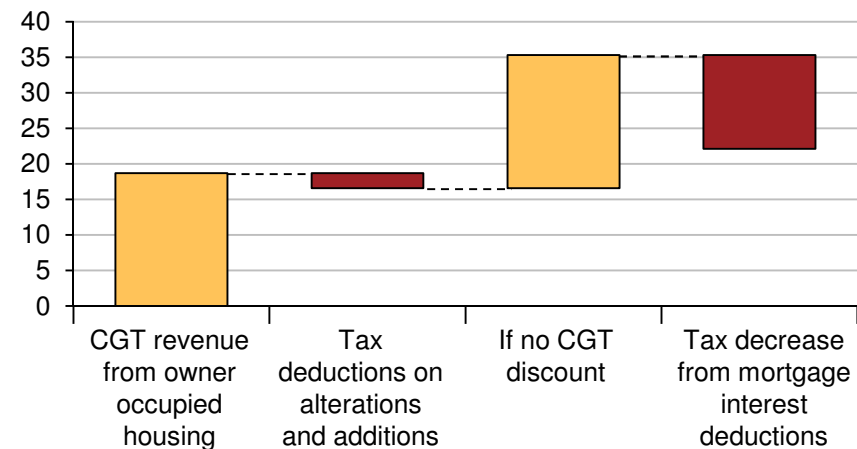
Mean annual value of CGT tax expenditure by disposable income quintile



Note: Assumes 50 per cent CGT discount. Source: ABS (2011b) cat 6530.0; ABS (2013l) cat 6523.0

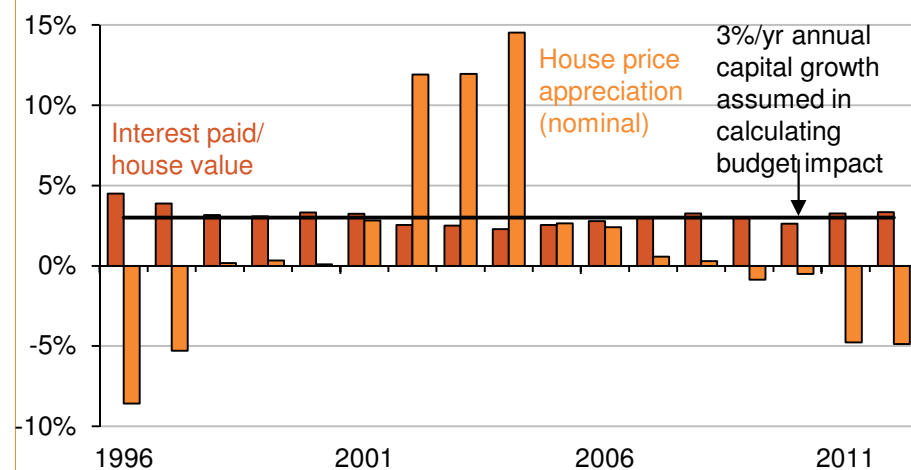
Potential CGT revenue is reduced by deductions for interest

Fiscal impact of applying CGT to owner-occupied housing, 10-yr average, \$b



Note: CGT is a 5-year average due to data availability, assumes avg marginal tax rate of 30%. Source: Treasury (multiple years-b); ABS (2013e) cat no 8755.0; RBA (2013a); RBA (2013b)

CGT is only payable if house price growth is higher than interest paid, which was only true in the house price boom of the early 2000s



Source: RBA (2013a) Table F5; ABS (2013b) cat no 5204.0

Negative gearing

Proposed budget measure

- The proposal would abolish negative gearing.
 - Tax deductions for losses on investments (including interest costs) would be limited to the income earned by investments during that year.
 - Any additional losses could be carried forward and applied against the future capital gain liability.
- Negative gearing significantly reduces tax for many taxpayers
 - Negative gearing allows taxpayers to deduct losses (including mortgage interest) on investments against other income (including wages), to reduce their taxable income.
 - Because only 50% of capital gains are taxed, negative gearing reduces, as well as defers, personal tax liabilities.¹
 - In 2011, 1.2 million individual taxpayers reported negative rental income, claiming \$13.3b in losses.²

Social impacts

- The proposal would increase taxes most for those on higher incomes.
 - People with higher incomes claim more in negative gearing losses.⁴
 - There are a substantial number on low incomes who claim negative gearing losses – many may be retirees with significant assets.
- The proposal would *increase* home ownership rates.
 - The proposal would increase home ownership by reducing returns for landlords relative to first home buyers.^{5, 6}
 - Negative gearing does not seem to increase total housing stock: 95% of new investment lending is for existing houses.^{6, 7}
- The proposal is unlikely to increase rents: a similar measure between 1985-87 was associated with increased rents in Sydney and Perth, but not elsewhere.^{1, 6}

Social impacts: Positive

Impact on bottom 20%: Neutral

Budget impact

- The proposal could generate, at most, around \$2b/yr in extra tax based on a 10-year average.³
 - Negatively geared property generates substantial losses (\$12.5b),² reducing tax paid (\$3.7b).⁴
 - Carried forward losses would be offset against capital gains on investor housing (\$10.4b)⁴ on which tax is paid (\$2.2b).⁴
 - In the shorter term, additional tax would be closer to \$4b/yr, declining to \$2b/yr over time as losses accumulate, reducing capital gains tax
- The proposal would induce property investors to invest in other assets, such as shares. Assuming that these investments were ungeared (as are most investments in equities), they would generate positive returns, increasing tax paid further.
- Savings may be limited by political pressure to grandfather existing investments (as demonstrated by 1987 reversal of 1985 policy).⁵

Contribution to budget: \$2 bn

Confidence : Low

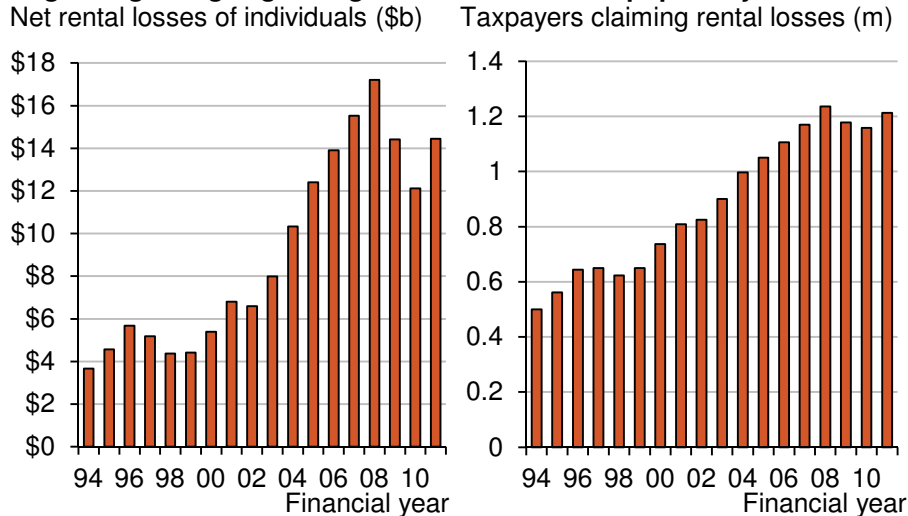
Economic impacts

- By reducing the relative attractiveness of housing as an investment, the proposal would relatively reduce house prices, and increase investment in other assets, which are likely to be more economically productive.
- There would be more home-owners and correspondingly fewer renters.⁵ This has mixed economic impacts as it encourages long-run savings,⁶ but it may reduce workforce mobility, increasing unemployment, particularly in regional areas.⁸

Economic impacts: Neutral

Negative gearing

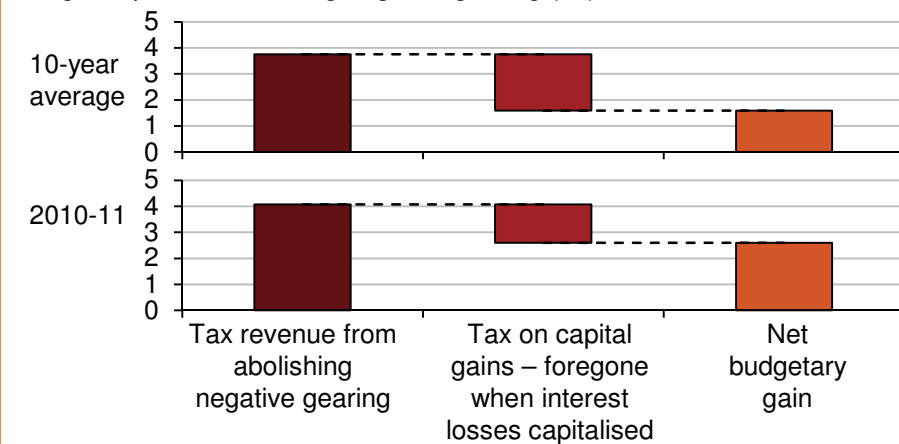
Negative gearing is growing in both amount and popularity



Source: Grattan analysis of ATO (2013i) Individuals' tax – Table 1

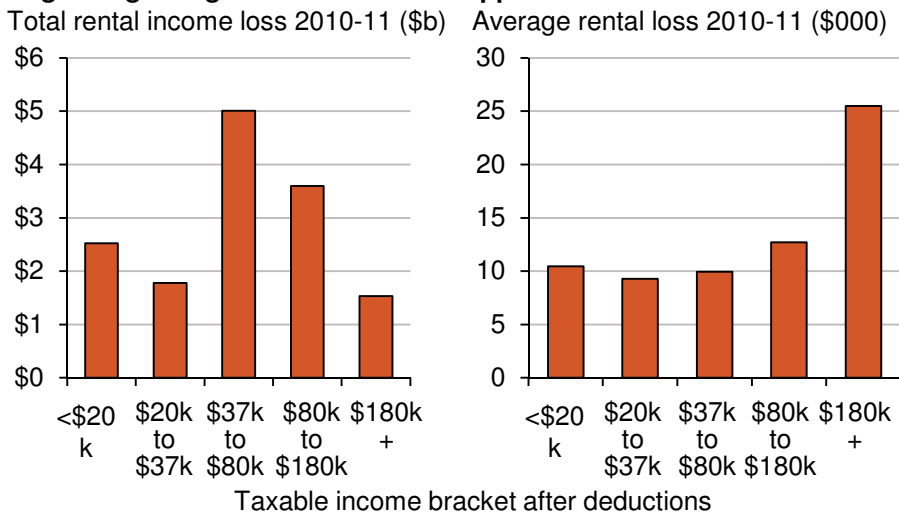
Additional income tax is reduced by losses carried forward against capital gains

Budget impact of abolishing negative gearing (\$b)



Note: Assumes marginal tax rate 30% Source: Grattan analysis of ATO (multiple years)

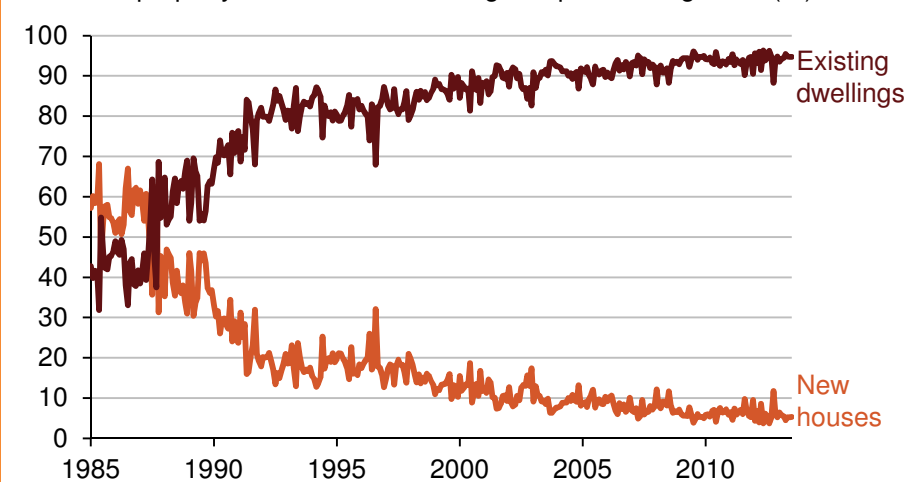
Negative gearing benefits middle to upper income brackets most



Note: Tax free thresholds changed between 2010-11 and 2012-13. 2010-11 data is presented in 2012-13 tax brackets as closely as data allows. Source: Grattan analysis of ATO (2013i)

Negative gearing does not increase housing stock

Investment property loans for new housing and pre-existing stock (%)



Source: RBA (2013c) Table D6

GST base

Proposed budget measure

- The Goods and Services Tax would be extended to private spending on fresh food, health, education, childcare, and water.
 - Exemptions would remain for international transactions (inc. education), financial services, existing residential housing, supplies by charities, and admin purposes (e.g. very small businesses).
- Australia's Goods and Services Tax (GST) has a relatively narrow base.
 - The GST applies to about 60 per cent of a comprehensive consumption tax base.¹
 - Australia's 'coverage ratio' is the seventh-lowest of 32 OECD countries.²
- Revenue foregone from the proposed new categories was \$16.3b/yr in 2012-13: basic food (\$6.2b); health (\$4.8b); education (\$2.8b); water and sewerage (\$0.9b); and child care (\$0.8b).³
- GST is a regressive tax, and some of the increased revenue should be returned to low-income households via the tax and welfare system to mitigate this.^{1,4} The bottom quintile of households makes up around 9% of total consumption.⁵

Social impacts

- Regressive impacts are more efficiently dealt with by using the tax-transfer system to mitigate income inequality,^{1,6,7} although compensation measures may be eroded by future policy changes.⁸
 - Low-income households spend a higher proportion of their income on currently exempt categories, but higher-income households have much higher absolute expenditure on them.^{6,7}
 - Consumption of currently exempt goods as a proportion of total consumption does not differ significantly by income quintile,⁵ so a broader GST would not be much more regressive than currently.
- Declining consumption of health and fresh food may decrease health outcomes, although demand for these doesn't change much with price.³
- Demand for education services also doesn't change much with price.^{3,9} Increased expenditure does not necessarily improve school outcomes.¹⁰

Social impacts: Neutral

Impact on bottom 20%: Mod negative

Budget impact

- The reform would contribute up to \$13 billion per year, assuming:
- Increased revenues of \$15b, based on Treasury estimates of likely revenue gain.³ These take into account the effects of consumer behaviour change due to increased costs. More than half of the lost revenue (\$0.4b) comes from reduced demand for education.
 - International education (an export) stays exempt, costing \$0.7b/yr.⁴
 - Household savings rates remain at 2012-13 levels.
 - 10 per cent of increased revenues (\$1.5b) are used to compensate low-income households via the tax and welfare system.⁵
 - Interaction effects are complex, and have not yet been modelled:
 - Increased demand for government-funded education and health services due to lower consumption of privately funded services.
 - Reduced female workforce participation with higher child-care costs
 - Reduced workforce participation due to higher welfare payments and lower education consumption

Contribution to budget: \$13b

Confidence: High

Economic impacts

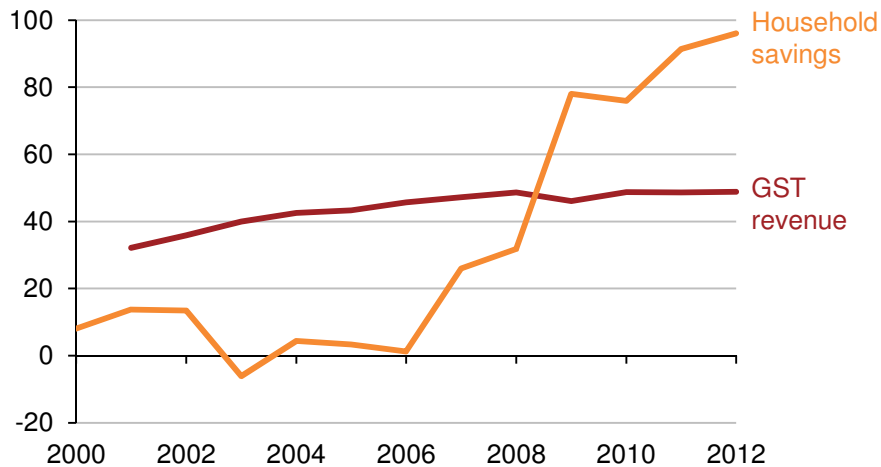
- All taxes drag on economic growth, but GST is a relatively efficient tax so the impact would be lower than from other revenue sources.^{4,7}
 - A broader GST is simpler and more efficient than a limited one,¹ and may have lower administrative costs.¹¹
- A broader GST base would improve the sustainability of the tax base. GST revenues are declining as a share of GDP, due to higher household savings rates, and increased spending on GST-exempt categories.^{1,2,11} This trend is likely to continue as the population ages: older people spend more of their income on health services.¹²
- Increasing GST revenue may reduce pressure on state government revenues, discourage them from increasing less efficient taxes.^{11, 13}
- Introducing GST on health and education may create market distortions between private and public service providers, but these exist anyway.

Economic impacts: Moderately negative

GST base

GST revenue flatlined as household savings grew

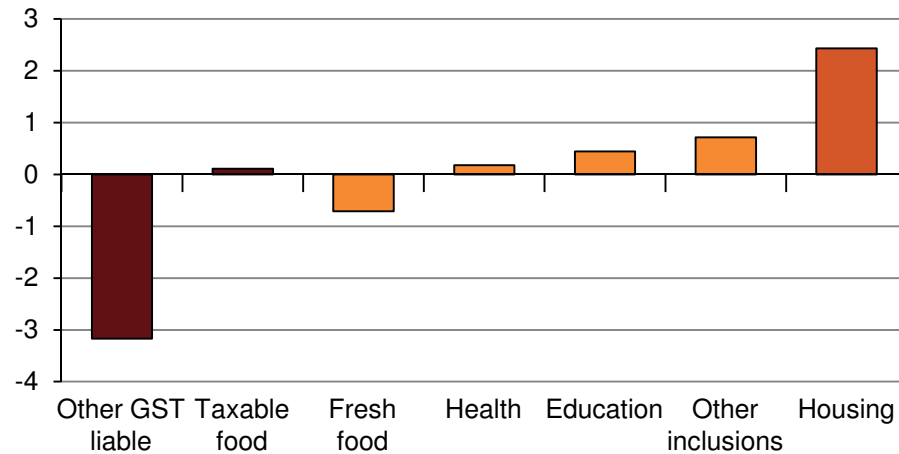
GST revenue and household savings, \$2012 b



Source: ABS (2013s) cat no 5506.0; ABS (2013b) cat no 5204.0

Consumers are spending more on GST-exempt items, mainly housing

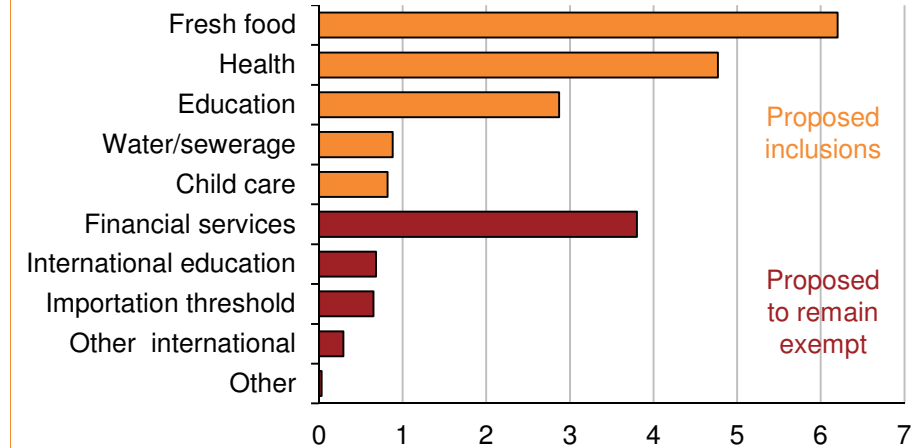
Change in share of household expenditure 2004 to 2010, per cent



Source: Grattan analysis of ABS (2006b) cat no. 6535.0.55.001; ABS (2011b) cat no. 6530.0

Most foregone revenue is in food and health, not internet purchases

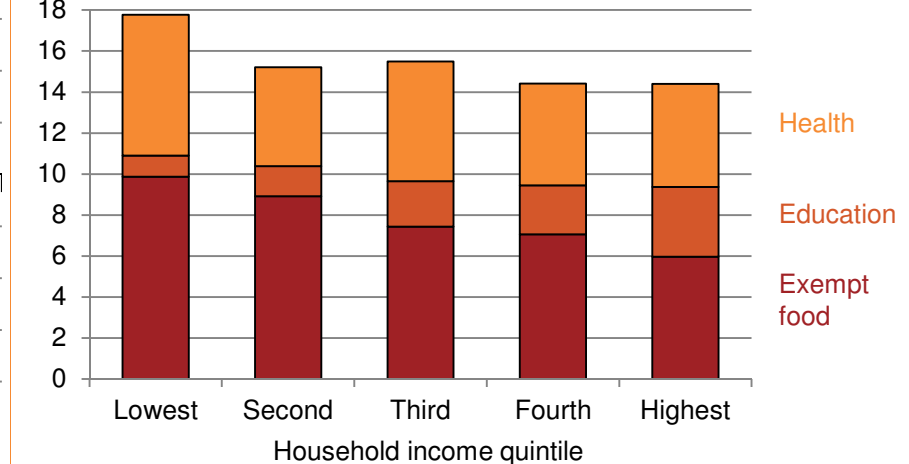
Foregone revenue by exemption category, 2012-13 (\$b)



Note: Categories for which estimates of foregone revenue are not available are not shown.
Source: Grattan analysis of Treasury (2013c); ABS (2013o) cat no 5368.0.55.004 Table 11.1

Broadening the GST would hit the poor slightly harder

% of household consumption spent on goods proposed for GST



Source: Grattan analysis of ABS (2011b) cat no. 6530.0

Payroll tax thresholds

Proposed budget measure

- The proposed change would remove payroll tax thresholds, with no change to tax rates.
- In 2012-13, payroll tax revenue was the largest single state tax, contributing \$20.7b to state budgets.¹
- The tax is paid by employers as a percentage of employee wages. While the legal incidence of payroll tax falls on employers, the economic incidence is shared amongst workers and consumers in the long run.²
- Tax-free thresholds are substantial concessions that reduce tax revenue
 - Businesses with payroll below the threshold do not pay payroll tax; other businesses pay tax on payroll above the threshold (except for Qld and NT who use a deduction system).
 - The tax free threshold varies from \$550k to \$1,750k.³
- Implementation may require a 'grand bargain' between States:
 - Thresholds have risen over time as States compete to attract business.^{2,4}

Social impacts

- Removing the threshold increases labour costs, and so increases unemployment. There is debate about the size of the effect:
 - A 1% increase in labour costs may increase unemployment by between 0.04 and 1.01 percentage points (see table overleaf).
 - Applying the median estimate, removing the tax-free threshold would increase unemployment by 0.35 percentage points or approximately 40,000 people.^{7,8}
- The social costs of unemployment are substantial, particularly for older workers with limited education
 - Direct financial costs to households would be around \$0.9b a year.⁹
 - Job losses will be concentrated in small businesses, and industries dominated by small businesses. Employees in these industries tend to have lower skill levels,¹⁰ and so may take longer to find new jobs.

Social impacts: Negative

Impact on bottom 20%: Negative

Budget impact

- Removing the tax-free threshold will broaden the base by increasing the number of liable firms, and increase the tax payable by larger firms.
- Grattan modelling based on State budget papers suggests the change would increase tax receipts by \$6b/yr.
 - Assuming no effect on employment, abolishing tax-free thresholds would increase government revenues by \$8b in 2012-13.¹
 - However, removing the tax-free threshold would increase labour costs, leading firms to hire fewer workers, and increasing unemployment. This may reduce collections slightly.
 - A 0.35 percentage point increase in unemployment would cost the Commonwealth budget around \$0.5b.⁵
 - Foregone corporate tax revenues might cost another \$1.5b.⁶
 - Additional administrative costs to government are negligible.⁷
- The measure would improve vertical fiscal imbalance, as it increases State revenue and imposes costs primarily on the Commonwealth.

Contribution to budget: \$6b

Confidence: Med-high

Economic impacts

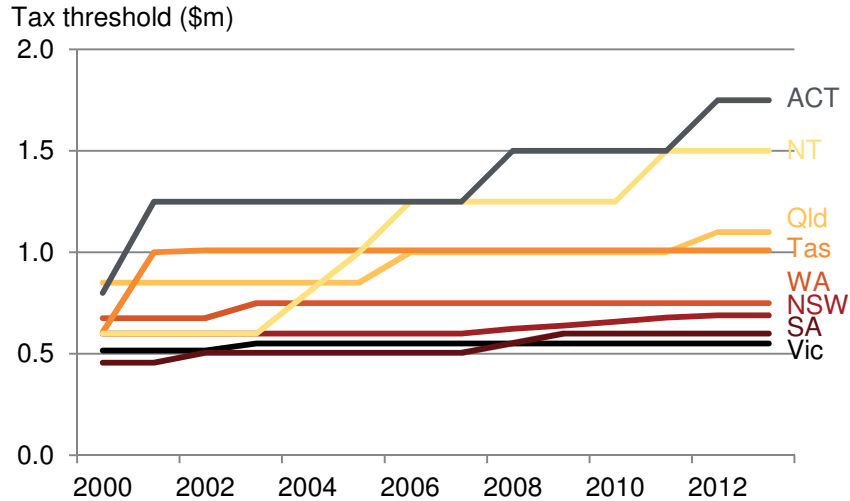
- Abolishing the tax-free threshold removes economic distortions
 - The threshold distorts competition between firms below and above the threshold.
 - The threshold encourages market entry by small firms which increases competition, but may lead to inefficient production by smaller firms.^{11,12,13}
- If the change increases unemployment, it will reduce economic growth.
- Compliance costs for business may be as high as \$600m,¹⁴ although increasing use of payroll software by small businesses means this probably overestimates the cost of the policy change.

Economic impacts: Moderately negative

Sources: 1. State budget papers 2013-14 2. Gabbitas and Eldridge (1998) 3. Treasury NSW (2013a) 4. Eslake (2011) 5. Treasury (2013b) 6. Grattan analysis of ABS (2013g) cat no 8165.0; ATO (2013i) 7. Grattan analysis of NSW State budgets 1997-2007 8. Grattan analysis of ABS (2013p) cat no 6202.0; ABS (2012b) cat no 6248.0.55.002 9. Grattan analysis of ABS (2013c) cat no 6302.0 Tables 14a-h. 10. Even and Macpherson (2012) 11. OECD (2013b) 12. Treasury NSW (2011) 13. Treasury (2010) 14. Lignier and Evans (2012)

Payroll tax thresholds

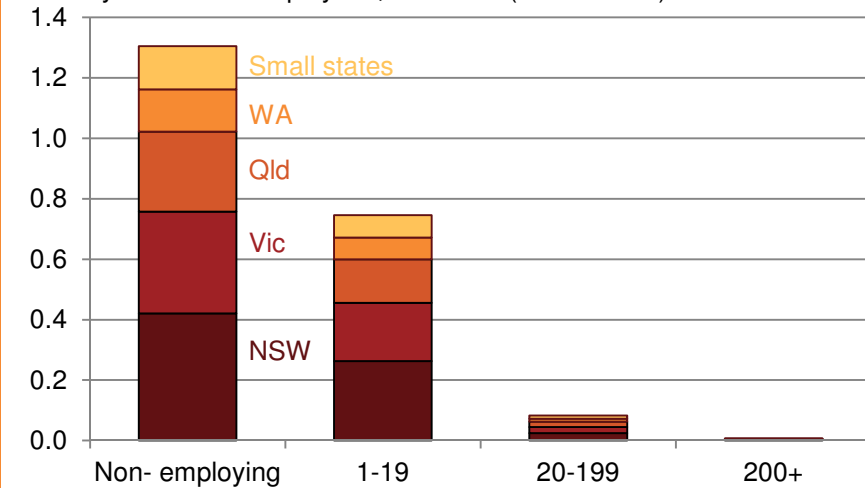
Tax thresholds have been rising, eroding State tax bases



Source: Treasury NSW (multiple years)

Most firms are small

Firms by number of employees, Jun 2012 (million firms)



Source: ABS (2013g) cat no 8165.0

Estimates of elasticity of labour demand to labour costs vary widely

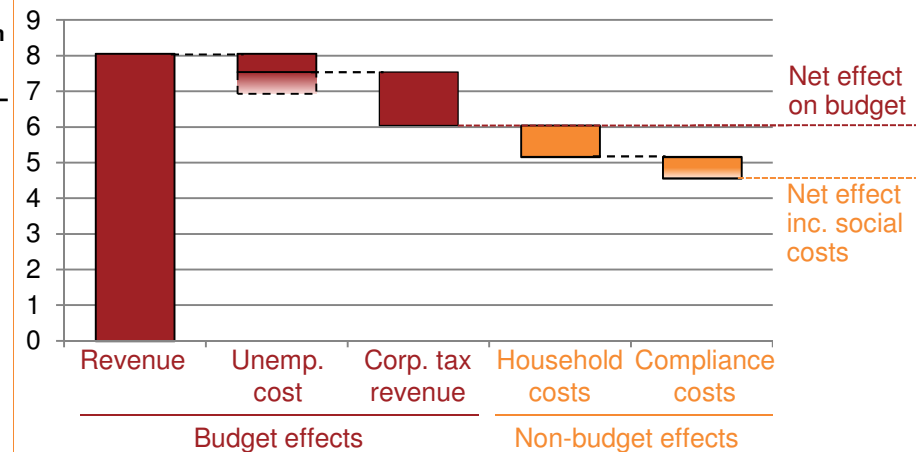
Selected studies' estimates of labour demand elasticity

Study	Data	Elasticity of labour demand found	Implied increase in unemployment rate from elasticity finding (percentage points)
Karanassou & Sala (2008)	1972-2006	-0.11%	0.04
Hutchings & Kouparitsas (2012)	1972-2011	-0.14%	0.07
Dixon, Freebairn & Lim (2004)	1966-2001	-0.34%	0.28
Debelle & Vickery (1998)	1979-1997	-0.39%	0.33
Dungey & Pitchford (1998)	1984-1997	-0.40%	0.34
Lewis & McDonald (2002)	1966-1998	-0.45%	0.39
Carne (2007)	1993-2006	-0.47%	0.41
Treasury (1996)	1971-1995	-0.79%	0.75
Stacey & Downes (1995)	1971-1995	-0.84%	0.80
Bernie & Downes (1999)	1978-1997	-1.04%	1.01

Source: Grattan analysis of ABS (2012b) cat no 6248.0.55.002; ABS (2013p) cat no 6202.0; ABS (2013g) cat no 8165.0; Treasury NSW (1999) and papers cited in table

Abolishing the tax-free threshold will improve the budget by \$6b

Effect of removing tax-free threshold assuming median elasticity, \$b



Source: Grattan analysis of papers cited in previous table; ABS (2012b) cat no 6248.0.55.002; ABS (2013p) cat no 6202.0; ABS (2013g) cat no 8165.0; Treasury NSW(1999); Treasury (multiple years-a); ATO (2013i)

Fuel tax credits

Proposed budget measure

- The proposal would cut Fuel Tax Credit (FTC) scheme spending by half.
- The FTC allows commercial fuel users who satisfy certain criteria to claim back a portion of the tax they spend on fuel:
 - Most commercial end-users of fuel, such as freight trucks or emergency vehicles, can claim back about 12c/litre of the fuel tax they pay, so long as the relevant vehicles satisfy environmental criteria.¹
 - For commercial vehicles not used on public roads but not in mining (as in forestry and agriculture), the fuel tax credit is around 38c/L.
 - For most mining purposes, rail, and stationary energy, the fuel tax credit is around 32c/L.²
- The 2013-14 Budget estimated the cost of the scheme at around \$5.8b.³
- The fuel tax may be a reasonably efficient input tax, if it is a proxy for user pricing of roads. This justification implies off-road use should largely remain exempt.

Social impacts

- Taxes on energy inputs decrease employment in the short-term,⁴ and reduce living standards slightly in the medium term.⁷
- Most of those affected would be in rural communities.
 - Mining, transport and agriculture would face the largest increases in costs.
 - As agriculture and mining are export industries, they would be unable to pass on all increased costs — their sale prices are determined in international markets.
 - Mining would be less affected, as high profits provide some buffer.
- The distributional effects are unclear as some of those affected would be low-income farm/fishery workers, while others would be highly-paid mining industry workers.

Social impacts: Mod negative Impact on bottom 20%: Mod negative

Budget impact

- Cutting spending on the Fuel Tax Credit by half would reduce direct expenditure by around \$3b.
- An increase in fuel prices would reduce the amount consumed.
 - The medium-run price elasticity of demand for diesel is probably around 0.5.⁶ The base diesel price is \$1.50/L including excise
 - On this basis, halving the FTC would reduce the amount of fuel used in the affected sectors by about 9 per cent.
 - Economic activity associated with this use of fuel would go untaxed.

Contribution to budget: \$3b

Confidence: Med-high

Economic impacts

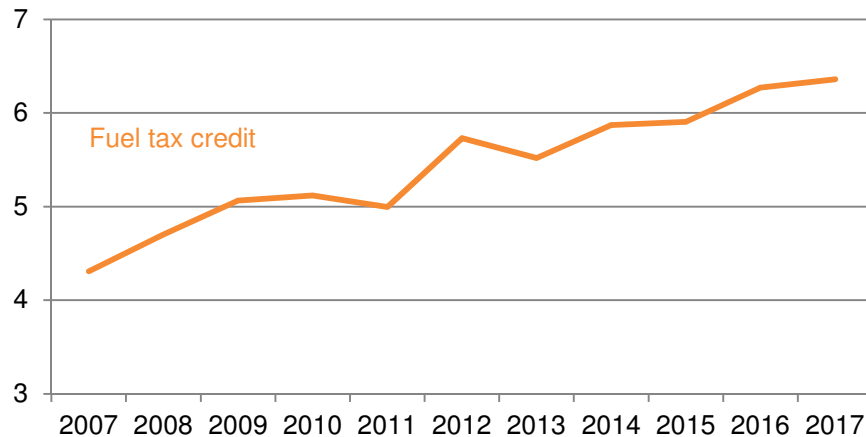
- Reducing the Fuel Tax credit would reduce economic activity by around \$0.5b.⁸
 - The Fuel Tax Credit almost certainly results in additional economic activity as it reduces taxes on business inputs
- Input taxes generally have a larger impact on export industries, particularly agriculture and mining.
 - Costs for most iron ore mines are far below world prices, and so higher costs will not affect activity.
 - Thermal coal mining costs are much closer to global prices, and activity may well reduce if Australian fuel prices are higher.
 - Agriculture generally earns few rents, and activity would be more severely affected if Australian fuel prices are higher.
- Modelling for the introduction of the carbon tax, which was conceptually similar, showed economic effects to be small and negative.⁷

Economic impacts: Moderately negative

Fuel tax credits

Fuel tax credit expenditure is growing quickly

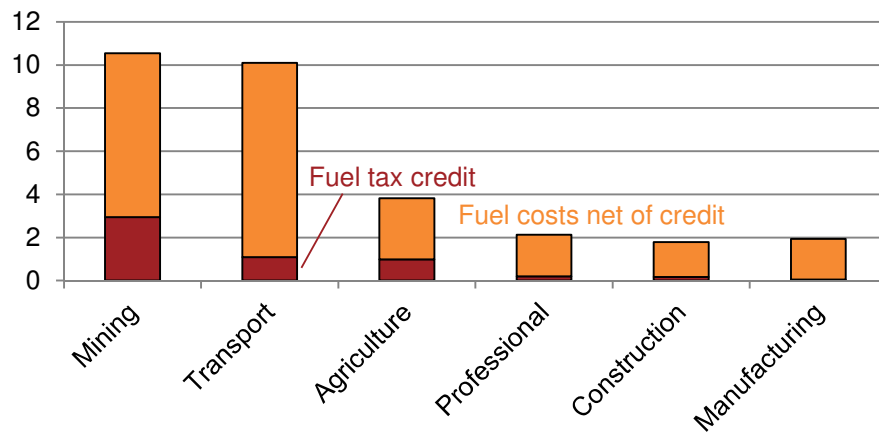
Fuel tax credit expenditure by year, nominal \$b



Source: Treasury (multiple years-a)

Although the transport sector spends as much on fuel as mining, mining gets more of the fuel tax credit

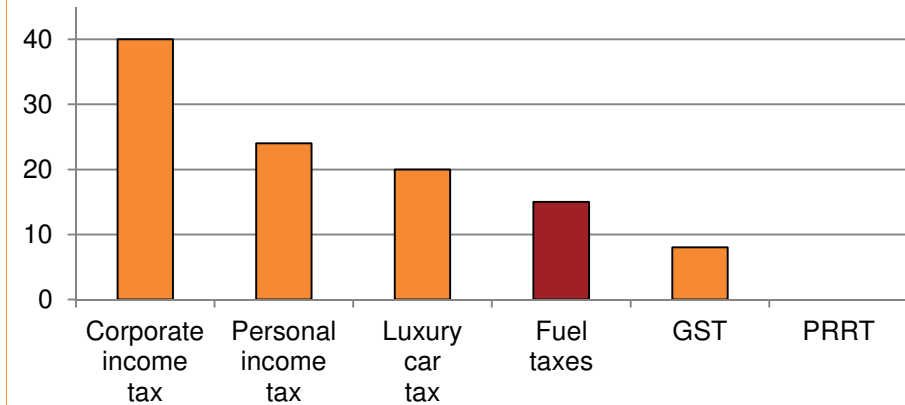
Fuel costs and fuel tax credit as a percentage of input costs



Source: Grattan analysis of ABS (2013b) cat no 5204.0; ABS (2013h) cat no 4660.0 ABS (2013n) cat no 5209.0.55.001

Fuel taxes aren't as economically damaging as other taxes

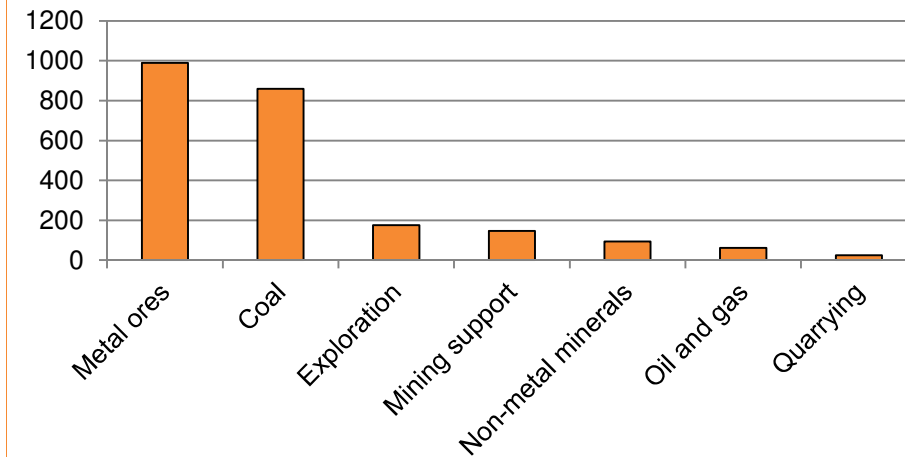
Estimates of marginal excess burden by tax type, cents per dollar of revenue



Source: Treasury NSW (2011)

Within mining, most fuel tax credits go to more profitable sectors

Fuel tax credit expenditure by mining subsector, \$m, 2011-12



Source: ATO (2013i)

Fuel excise indexation

Proposed budget measure

- The proposal would reintroduce indexation of fuel excises so that tax per litre increases with CPI.
- Fuel excise per litre used to be indexed with CPI, but this ended in 2001
 - Between 1982 and 2001, the excises applied to most oil-based fuels were increased each year at the rate of CPI growth.
 - With the introduction of the GST in 2000, excises were cut, to offset the application of the GST to fuels.
 - In 2001, excises were cut again, and the indexation of excises was ended.¹
- Fuel excise is a declining proportion of the cost of fuel
 - In 2002, around half the cost of a litre of fuel went to the government. In 2012, it was closer to a third.²
 - Fuel prices have risen a little faster than CPI. Even if indexing had not ended in 2001, the government's share of fuel sales would have fallen.³
- Fuel excise may be seen as a proxy for user pricing of roads.

Social impacts

- Poor households would be hit harder by higher fuel excises
 - Fuel is a larger proportion of weekly spending for poor households, although they spend less in absolute terms.
 - If excise had been indexed at CPI since 2001, then the bottom 20% of households would spend an extra 0.6% of their income on fuel, and the top 20% of households would spend an extra 0.2% of their income on fuel.⁵
- Higher fuel excises would reduce consumption, and therefore carbon emissions.⁶
- If the fuel tax credit remains, the employment effects of the proposal would be muted.

Social impacts: Mod positive Impact on bottom 20%: Mod negative

Budget impact

- Reintroducing fuel excise indexation to CPI would raise about \$3b per year by 2023, in 2013 dollars, after taking into account fuel tax credit payments.⁴
 - The estimate assumes that with no excise indexation, fuel volume would grow at 1 per cent per year, and an inflation rate of 2.5 per cent per year.
 - The budget impact depends on the actual growth in fuel volumes. In recent times, diesel use has grown faster – and relative to petrol a greater proportion qualifies for fuel tax credit.
 - Budget impacts depend on reduction in use as a result of increase in price. We have assumed that increasing the price by 1% will reduce use by 0.5%
- While indexing the excise would increase revenue, fuel excise would still be a declining proportion of the cost of fuel as fuel prices are likely to grow faster than CPI in the next decade.

Contribution to budget: \$3b

Confidence: Medium

Economic impacts

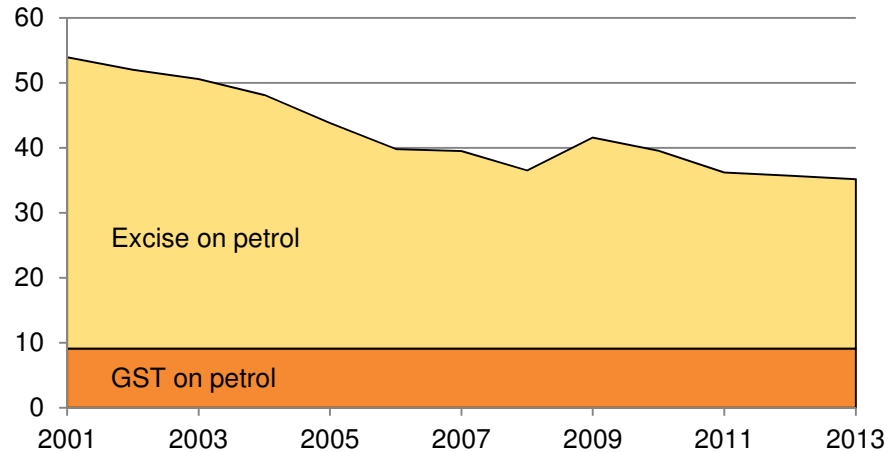
- Fuel taxes would reduce economic activities that have few alternatives to using fuels.
 - Continuing the fuel tax credit would dampen most of the negative impacts of fuel excise indexation.
 - At the margin, fuel tax indexation would result in decreased economic activity in sectors not able to claim the fuel tax credit. By definition, fuel is a small input for these sectors, so the effect is unlikely to be large.
- If there is on balance a reason for fuel excise, there is no economic rationale for it to reduce in real terms over time.

Economic impacts: Moderately negative

Fuel excise indexation

Eliminating fuel excise indexation has eroded the tax take of fuel sales

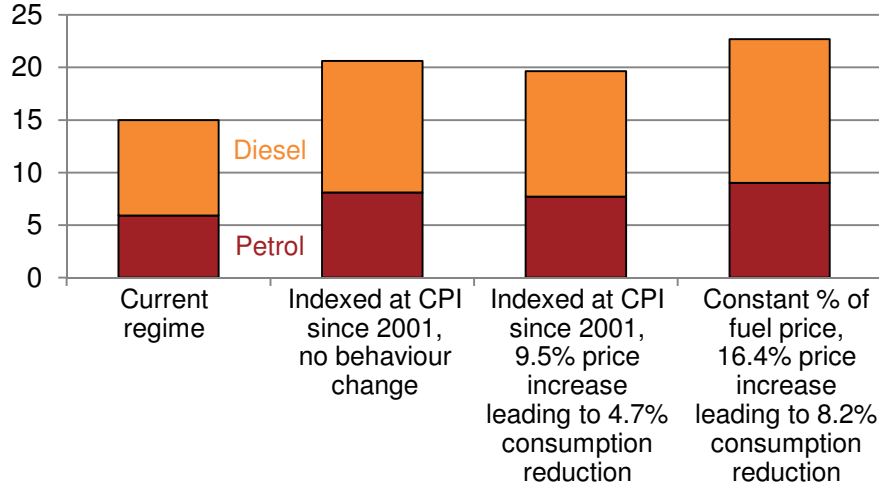
Share of petrol price that is tax (%)



Source: Grattan analysis of Fuel Watch WA (2013)

Not indexing fuel tax has reduced budget revenue by around \$5b/yr

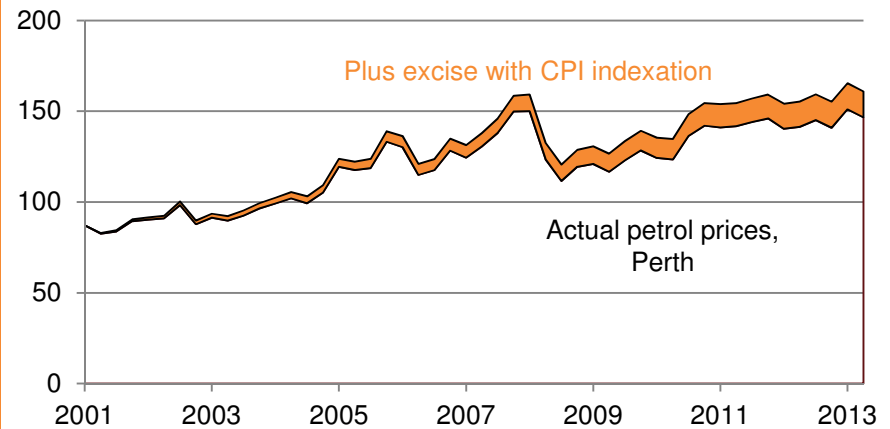
Excise revenues in 2013-14 under various scenarios, \$b



Source: BITRE (2001); ATO (2013c); Fuel Watch WA (2013); Treasury (2013a)

Even if fuel excise had been indexed, oil price changes would have swamped the impacts of excise growth over the last decade

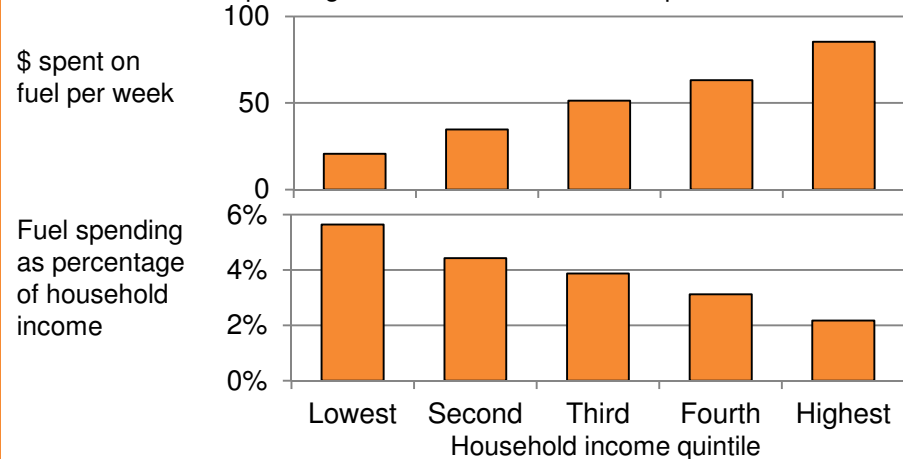
Indicative Perth petrol prices with and without indexation, c/L



Source: ABS (2013f) cat no 6401.0; Fuel Watch WA (2013)

The rich spend more on fuel in dollar terms, but it is a smaller share of their income

Distribution of fuel spending across household income quintiles



Source: ABS (2011b) cat no 6530.0

Federal royalties export tax

Proposed budget measure

- The proposal would levy an export tax on minerals at 50 per cent of the portion of the price above nominated thresholds.
 - Thresholds would be set for each mineral at the point that owners extract an economic rent – i.e. above the price required to provide an incentive to mine.
 - For example, if the price of a certain iron ore is \$120 per tonne and the threshold for that grade is \$100 per tonne, then export tax of \$10 per tonne is payable.
- Although the Commonwealth cannot levy royalties (as minerals are the property of States), it can levy an export tax.
 - Export taxes would also be levied on refined minerals to mirror the impact of export taxes on unrefined minerals.
 - The export tax would be in addition to state royalties.
- Such an export tax would be a good second best to a genuine rent tax.
 - It is much easier to explain, and so easier to sell politically.
 - It does not require the Commonwealth to contribute to miners' losses, which would be politically difficult.¹

Social impacts

- Any reduction in new mining investment due to the tax would reduce employment opportunities and national income.
- Introducing taxes on unexpected profits that occur due to past investment sets a precedent that may affect investment in other potentially high-return industries.

Social impacts: Mod negative

Impact on bottom 20%: Neutral

Budget impact

- Levied on iron ore and coal, an export tax of this form would raise about \$10b at current prices in the short run. If current price forecasts eventuate, revenues would drop to around \$3bn by 2017. No price forecasts are available for 2023.
 - This assumes a threshold of \$90 a tonne (in 2013 dollars) for 62% Fe equivalent iron ore, a threshold of \$75 for thermal coal—around the 2009 average price,² and a threshold of \$120 a tonne for metallurgical coal.
 - Sales volumes forecasts and price forecasts are taken as the average of industry analyst forecasts.³
 - Metal ore and coal exports for the 2012-13 financial year were about \$150b.⁴

Contribution to budget: \$3b

Confidence: Low

Economic impacts

- An export tax would dissuade some investment and economic activity at the margins.
 - While much of Australia's minerals primary production has low average costs, many mines—especially those that aren't well served by rail—have high costs, and may not be earning economic rents.
 - The effect would be far more acute when prices fall.
- An export tax would provide a subsidy to domestic users of iron ore, especially the steel industry, although real impacts would be limited.
 - The subsidy would not change domestic steel prices which are generally set by import parity pricing.
 - The subsidy would not provide much advantage to steel exports – export volumes are small, and export taxes could be levied on them as well to maintain parity.

Economic impacts: Moderately negative

Federal royalties export tax

Royalties are calculated on a variety of bases

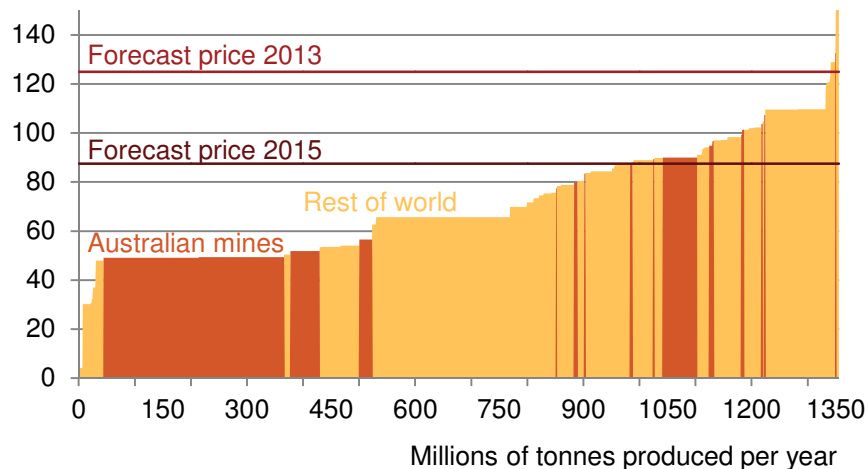
Coal and iron royalties and revenues

	Coal Calculation basis	Revenue 2012 \$m	Iron ore Calculation basis	Revenue 2012 \$m
NSW	5 - 7%	1,100	4%	--
Vic	~ 50c/t	~46	2.75%	--
Qld	7%+10% > \$100/t	2,400	\$1.25/t+2.5% over \$100/t	<70
WA	7.5%	--	5 - 7.5%	3,900
SA	3.5%, 1.5% new mines	--	5%	--
Tas	1.6% + profit up to 5%	--	1.6% + profit up to 5%	--

Note: States calculate royalties on prices at a variety of different points in the production process. Victorian figure is all royalties, most coming from coal. Source: Dol (2013b); DTIRE NSW (2013); Office of State Revenue Qld (2013); Treasury WA (2013a); DTF Victoria (2013)

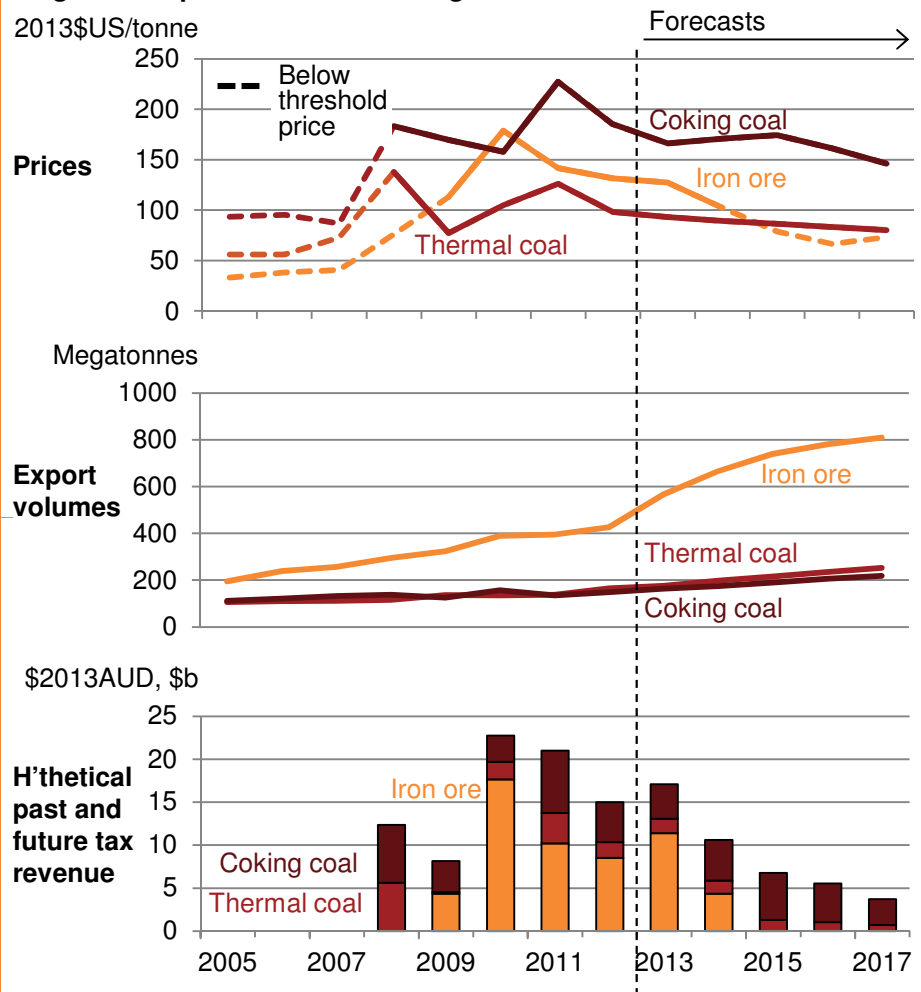
Most Australian extraction costs are far below market prices

Global cost curve, iron ore, \$US



Note: Curve is for 62 per IODEX equiv all-in cash cost CFR. Source: Credit Suisse (2013); 2015 forecast price from Deutsche Bank (2013) and Goldman Sachs (2013)

An export tax could raise substantial short-run revenue, but less in the long-term as price declines outweigh volume increases



Note: Hypothetical tax rates are 50% of sales in excess of thresholds (\$90/t for iron ore, \$75 for thermal coal, and \$120 for metallurgical coal). Prices are free on board (FOB) for the respective benchmark mineral. Source: Historical prices and export volumes are from ABARES (2005, 2007, 2009, 2011); BREE (2013); Deutsche Bank (2013); Goldman Sachs (2013). Forecast prices and quantities are averages of forecasts in these sources.

Transport infrastructure costs

Proposed budget measure

- Australian governments spent \$19b on transport infrastructure construction in 2012.¹ Although rigorous evaluation is difficult due to limited data, value for money seems poor,^{2,3,4,5} suggesting scope to reduce spending without significantly decreasing benefits.
- Some choices about which infrastructure to build are poor:
 - Cost-benefit analyses for large projects overstate benefits and understate costs,^{6,7} and can be disregarded by governments.^{4,5,6,7,8,9}
 - Governments seem reluctant to pursue alternatives such as small local infrastructure upgrades or pricing to manage demand.^{4,5}
- Project costs are high, and vary between states and projects; there are some legitimate reasons for this,^{10,11} but savings seem possible:
 - Australia tends to build ‘gold-plated’ infrastructure – such as large tunnels – rather than lower cost options such as surface roads.^{4,12, 13}
 - Construction costs have risen faster than in other industries;¹⁴ and are higher than overseas.¹⁵ Drivers of high costs include brownfield construction; mining boom-induced skills shortages; and IR.
 - Better project management and simpler standards could lower costs.^{2,5,12,16,17,18,19}

Social impacts

- Well-designed and appropriately built transport infrastructure can have large social benefits, making it possible for people to access more employment opportunities.²⁰ However, these benefits depend on the right projects being chosen, and can potentially also be achieved through other mechanisms such as making better use of existing infrastructure.
- Significant deregulation of infrastructure planning and construction could decrease environmental, amenity and safety outcomes (for both workers and users). Current planning approaches have high levels of duplication that could probably be streamlined while maintaining outcomes.¹⁹
- Because the greatest benefits of infrastructure projects tend to accrue to those closest to them,²¹ decisions about particular projects can have significant distributional impacts.

Social impacts: Mod negative

Impact on bottom 20%: Neutral

Budget impact

- Reducing transport infrastructure expenditure from current levels (1.26 per cent of GDP) to 0.84 per cent of GDP (the average expenditure from 1987 to 2012)¹, through reducing costs and making better project choices, could reduce expenditure by up to \$6.3 billion per year.
 - Not all infrastructure expenditure appears directly in the headline budget balance; some is treated as capital expenditure and so is captured in the budget via interest and depreciation costs, and some is spent outside the general government budget by government-owned corporations. However, over time the total amount spent must be found from government revenue sources.
- Given the complexity of cost drivers for infrastructure, the exact source of savings is difficult to determine and would require further examination.

Contribution to budget: \$6bn

Confidence in estimate: Low

Economic impacts

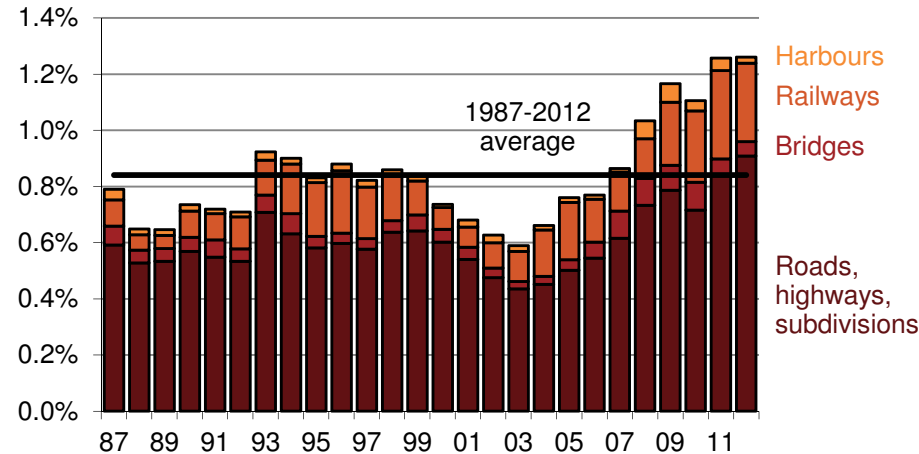
- Infrastructure is important for economic growth, but only if it's the right infrastructure in the right place at the right time for the right price.²²
 - In developed economies, marginal increases in infrastructure spending may not necessarily be a major contributor to growth.²³
 - Improving transport system capacity has economic benefits, particularly by improving the productivity of cities,²⁰ but new infrastructure is not always the most efficient way to achieve this.
 - Australian infrastructure spending is at historic highs,¹ and hard evidence of a backlog of projects with large net benefits is lacking.²³
- Low productivity in the construction sector constrains economy-wide productivity. Improvements in construction industry productivity and efficiency, and regulatory reform, could flow through to private sector infrastructure, where costs are also a major concern.²⁴

Economic impacts: Neutral

Transport infrastructure costs

Public spending on transport infrastructure is above the long-run average

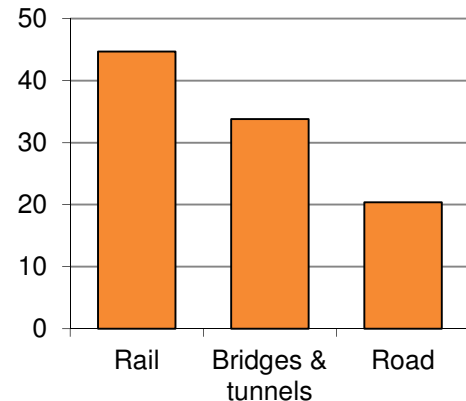
Engineering construction work done for public sector, per cent of GDP



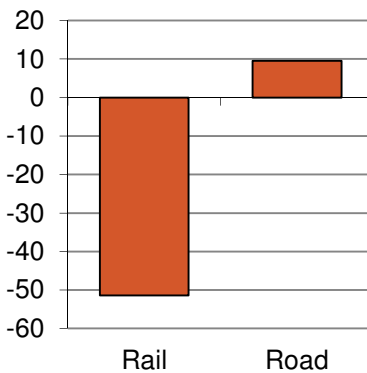
Source: ABS (2013i) cat no 8762.0 Table 11.

Big errors in transport project forecasts seem endemic around the world

Spending overrun relative to forecast, avg %



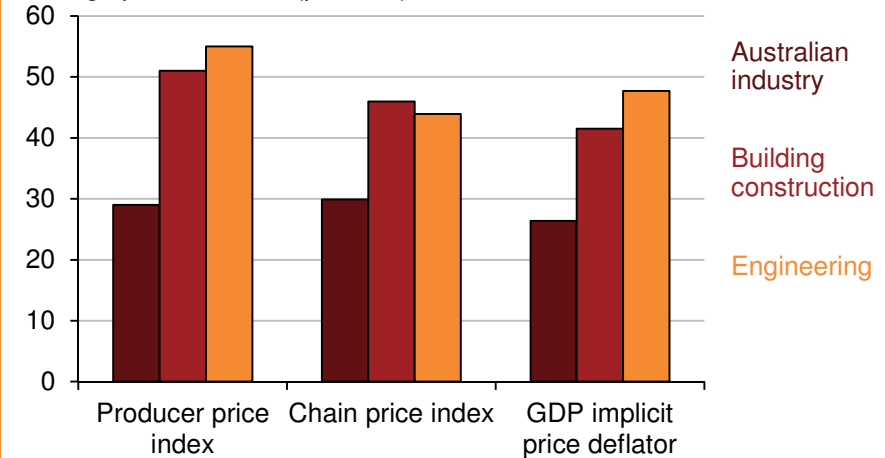
Traffic relative to forecast, avg %



Note: Cost overrun data based on analysis of 258 projects in 20 countries; traffic forecast data based on analysis of 208 projects in 14 countries. Source: Flyvbjerg (2009)

Construction prices have risen faster than other industry averages

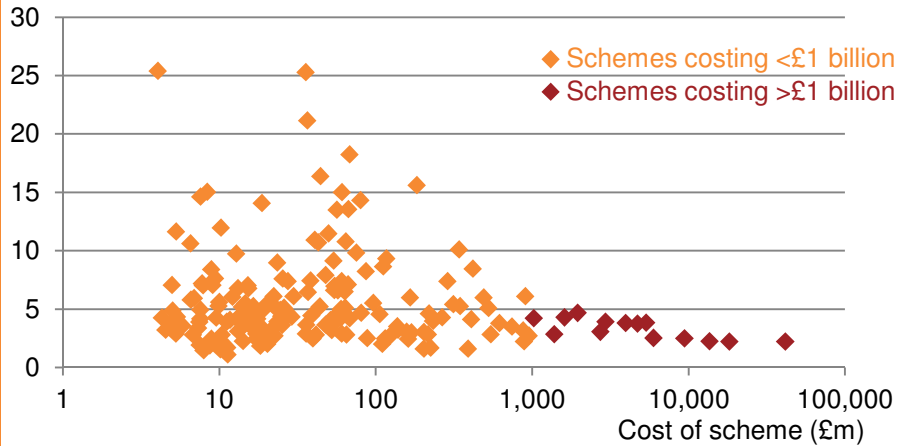
Average price increase (per cent), 2001-2011



Source: ABS (2013q) cat no 6427.0, ABS (2013a) cat no 5206.0, ABS (2013b) cat no 5204.0

Investment in small projects may produce better value for money

Wider benefit:cost ratio of UK transport projects by project size



Note: Costs are on a log scale. Source: Eddington (2006).

Industry support

Proposed budget measure

- While governments have cut industry assistance in recent decades,¹ they still spend substantial amounts to support some industries.
 - The Commonwealth Government spent over \$10.5b on industry-related programs in 2011-12. Net tariff assistance was just over \$1b; the remainder is budgetary support (tax breaks and budget outlays).¹
 - Service industry sectors receive the largest total subsidy, although manufacturing and primary production get higher rates of support relative to the economic value they generate. Only \$0.6b of the \$9.5b went to the motor vehicle industry.¹
 - State governments spent a further \$6b p.a., mostly on investment facilitation and primary industries.²
- Some support pursues policy aims other than supporting industry for its own sake, and should be retained:
 - 18 per cent of Commonwealth budgetary support relates to carbon emissions reduction and energy goals.¹
 - Research and development has significant spillover benefits.
 - Some support maintains low-skilled jobs in regional areas that otherwise might face high unemployment and social dislocation.

Social impacts

- Some industries largely depend on government subsidies, and removing them will likely result in job losses. Retrenched workers may require government support via the education and welfare systems. Older workers with limited other job opportunities, may need support long-term. If the industry (such as car-making or agriculture) is the major employer in a region, there may be significant economic and social effects on the local community, although there is evidence that when substantial industries close, most workers rapidly find new jobs.³
- Some subsidies (e.g. funding to the CSIRO or the film industry) may be designed to achieve non-economic aims. Alternate approaches may be needed to pursue these aims if subsidies are cut.
- Removal of support may be progressive in the long term if wages in subsidised sectors are higher than average.

Social impacts: Mod negative Impact on bottom 20%: Mod negative

Budget impact

- Cutting industry support could improve the budget bottom line by approximately \$5.3b in reduced budget expenditure and increased revenue via the abolition of tax concessions.
- This assumes a 50 per cent cut to:
 - Commonwealth budgetary support to small business and specific sectors (currently \$2.8b), to regional adjustment (\$0.2b) and support not elsewhere included (\$0.4b);¹
 - Commonwealth budgetary support to specific industries, excluding support related to carbon emissions reduction and energy goals (\$1.2b);¹ and
 - State government budgetary support (\$6b).²
- Support for R&D (\$2.6b), carbon reduction-related support (\$1.7b) and export assistance (\$0.5b) would not be cut.¹
- This assumes ceasing assistance will not reduce productivity or business profitability and so will not reduce corporate tax revenues.

Contribution to budget: \$5b

Confidence: Med-high

Economic impacts

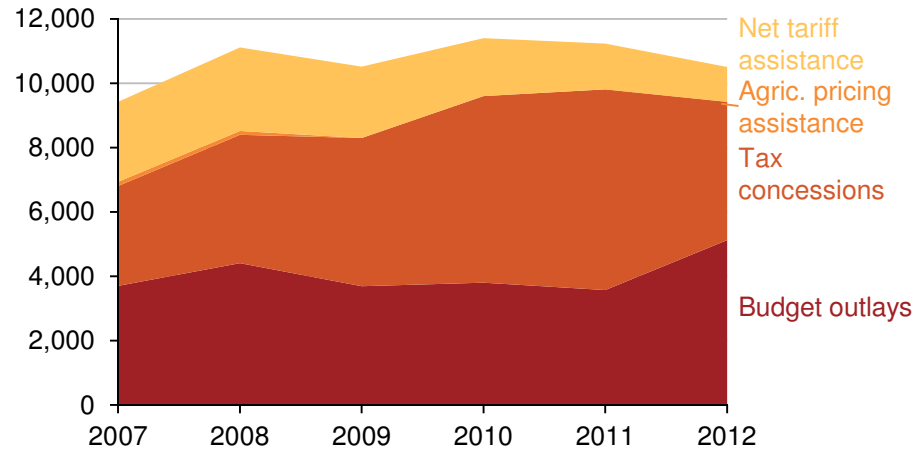
- Traditional industry support is generally an inefficient use of funds:
 - There is little confidence that existing industry policy results in additional innovation, employment or productivity. Evidence suggests that industry support is not effective at supporting regional economic growth, or at creating growth industries.^{4,5}
 - Removing subsidies would reduce distortion of industry decision-making, increasing productivity and efficiency in the long run.
 - Some existing industry support is highly inefficient. For example, steel industry assistance under carbon price compensation measures was to cost \$36,000 per year per worker.⁶
- There is little evaluation of most industry spending. Anecdotal evidence suggests that subsidies create little additional research and development activity beyond what would occur anyway without support.

Economic impacts: Moderately positive

Industry support

Net tariff support has fallen, but budgetary assistance has risen

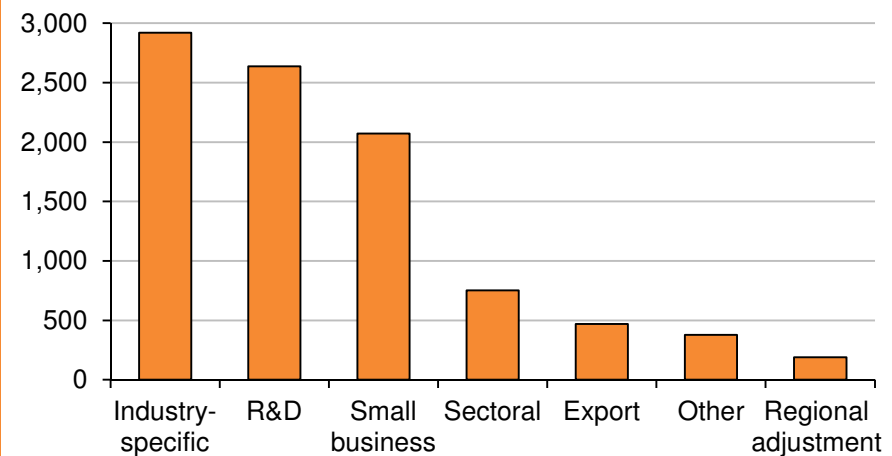
Commonwealth Gov't industry support by assistance type, \$m



Source: Productivity Commission (2013b)

Most budgetary assistance goes to specific industries or to R&D

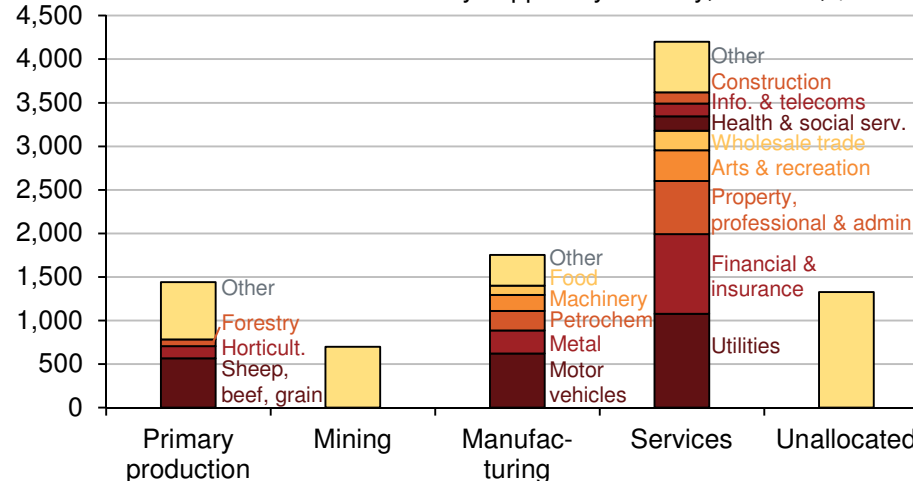
Commonwealth Gov't non-tariff industry support by category, 2011-12, \$m



Source: Productivity Commission (2013b)

In dollar terms, services dominate C'th budgetary assistance

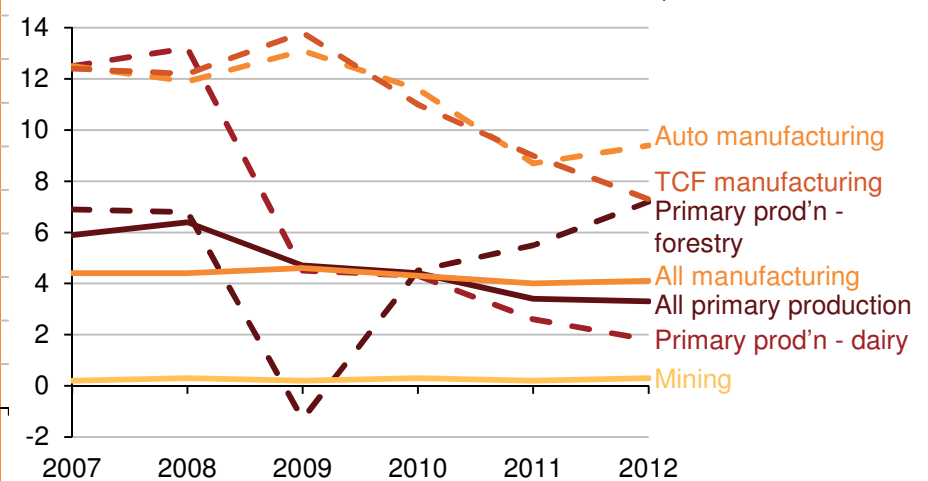
Commonwealth Gov't non-tariff industry support by industry, 2011-12, \$m



Note: 'Other' includes support that cannot be allocated to specific industries. 'Petrochem' is petroleum, coal, chemical and rubber. 'Food' is food, beverages and tobacco. 'Utilities' is electricity, gas, water and waste services. Source: Productivity Commission (2013b)

The auto, textile and forestry industries get high rates of assistance

C'th Gov't net assistance as % unassisted value added, selected industries



Note: Estimates for service industries not available. 'TCF' is textile, clothing and footwear. Source: Productivity Commission (2013b)

Private health insurance rebate

Proposed budget measure

- The proposal would remove the rebate for private health insurance (PHI). The 30% rebate was introduced in 1999 and cost \$5.5b in 2012-13.¹ It is now means-tested (individuals \$88k, families \$176k), and the rebate rate falls as incomes rise. The government also incurs a tax expenditure of \$1.6b as the rebate is tax exempt.²
- The Medicare Levy Surcharge (MLS) (1.5% surcharge for those earning over the income threshold who chose not to take out PHI) and the Lifetime Cover (LTC) policy (those who first take out PHI after the age of 30 pay a loading in higher premiums) would remain.
- The share of people with PHI policies increased from 30% in 2000 to 47% in March 2013 -- the vast majority of insured people have both general and hospital cover.³
- Neither the PHI rebate nor the LTC policy resulted in many patients shifting from public to private hospitals.⁴ Privately insured patients still use public hospitals,^{4,5} and PHI rates increased the most for younger people who are not big users of public hospitals⁴ and have policies with front end deductions (e.g. co-payments). This group would face significant out-of-pocket expenses if they make insurance claims.

Social impacts

- The PHI rebate is regressive. It disproportionately benefits higher income earners, who are likely to retain PHI even without the rebate.
- Few people will relinquish private health insurance in response to the premium increase, particularly if the PHI premium is less expensive than paying the MLS.⁷ Most people with PHI have it for security.^{8,9}
 - Introduction of the rebate had only a marginal effect on PHI take-up; introduction of the LTC increased take-up much more.¹⁰
- People in lower income brackets are more likely to relinquish PHI in response to premium increases, transferring to the public system.⁸ This may restrict access and timeliness of treatment. Waiting times for elective surgery may increase in the public system; reduced insurance take-up may reduce use of general health services ('extras').

Social impacts: Mod negative Impact on bottom 20%: Mod negative

Budget impact

- Abolishing the 30% rebate for private health insurance premiums would save \$3b per year.
 - The rebate currently costs \$5.5b in foregone tax revenue (2012-13). This is projected to rise to \$5.8b in 2016-17 (in \$2012-13).¹
 - It is unclear how much demand will shift from private to public hospitals. Modelling suggests government costs would increase by between 4%⁴ and 10%,⁶ or between \$1.5b and \$3.8b. Increase, is likely to be at the lower end of the range as the MLS provides incentives to retain insurance. A mid point of \$2.5b is used in this costing given the uncertainty.
 - Means testing of the rebate (introduced 1 July 2012) has had little impact on PHI rates so far.³
- The MLS and LTC policies will continue to provide incentives for keeping PHI. Any potential drop out effect might be mitigated by strengthening the LTC policy. Possible changes include lowering the commencement age and increasing the loading on premiums.

Contribution to budget: \$3b

Confidence: Medium

Economic impacts

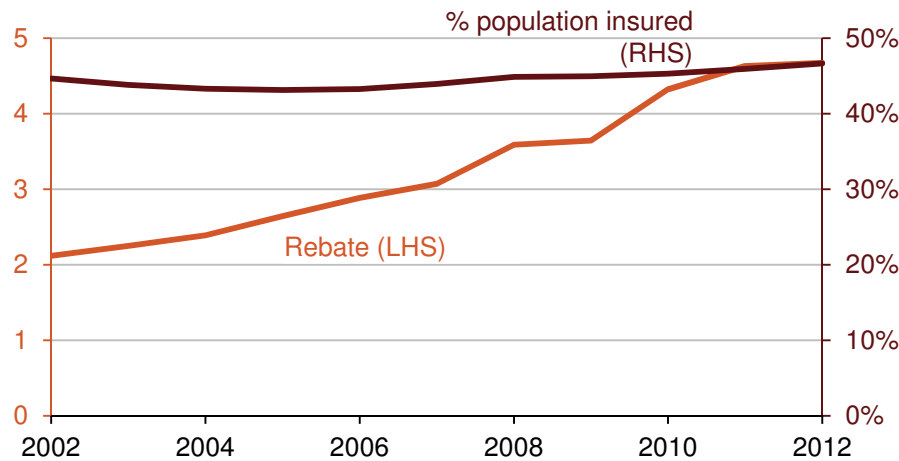
- Increased premiums may shift a small number of people from the private to public hospital system, increasing costs to government in the form of increased services and capital costs.
 - Older patients with higher risk of adverse health are less likely to switch towards the public sector, even if PHI is less affordable.¹¹
 - The increase in PHI over time generated rather than shifted demand.¹¹ Reduced availability may also reduce demand.
- One quarter of benefits paid are for general or 'extras' cover.³ Abolishing the rebate on general insurance will have little impact on public hospital use.

Economic impacts: Neutral

Sources: 1. Treasury (2013a) 2. Treasury (2013c) 3. PHIAC (2013b) 4. Segal (2004) 5. Seah *et al* (2013) 6. Cheng (2013) although this modelling does not take the MLS into account 7. Robson and Paolucci (2012) 8. Moorin & Holman (2006b) 9. ABS (2009) cat no 4364.0 10. Duckett and Willcox (2011) 11. Access Economics (2002) cited in Moorin & Holman (2006a)

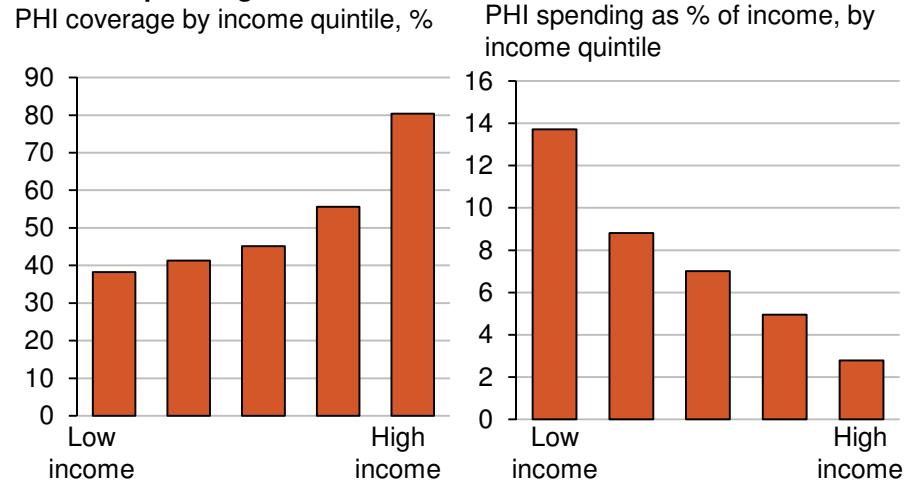
Private health insurance rebate

The cost to government of the PHI rebate has increased over time
Cost of rebate (2013\$b) and % of population with PHI hospital coverage



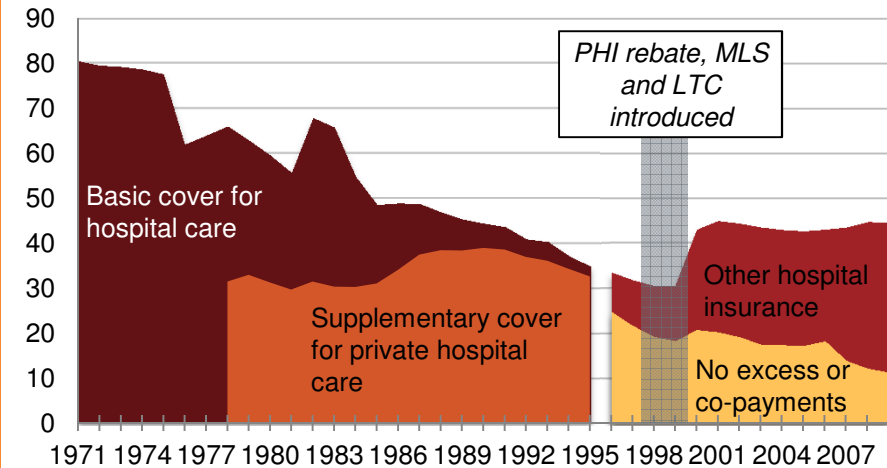
Source: AIHW (2013), PHIAC (2013a)

More people on high incomes take out PHI, but people with low incomes spend a greater share of their income on PHI



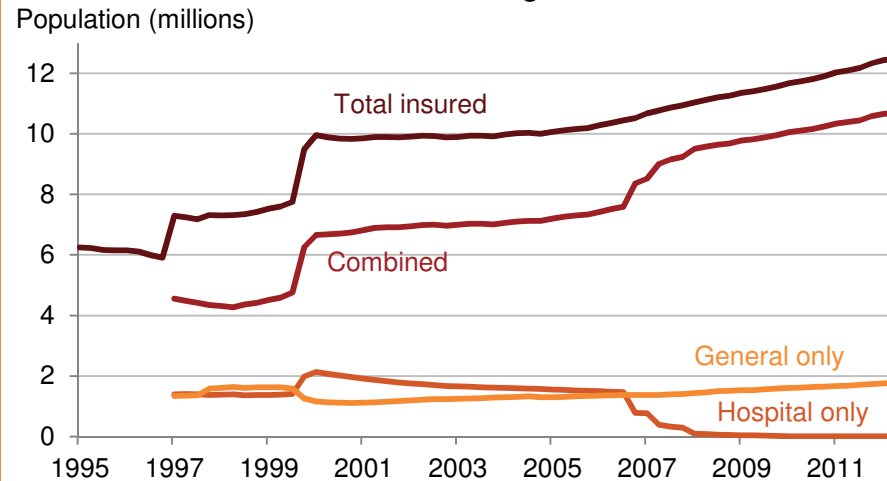
Source: Grattan analysis of ATO (2013f); ABS (2011c) cat no 6503.0

Policy changes in 1997-2000 increased private health insurance rates
Percentage of population with private health insurance



Source: PHIAC cited in Duckett & Wilcox (2011)

Almost all insurance is for combined or general treatment



Note: Excludes ambulance-only cover. Source: PHIAC (2013a)

Pharmaceuticals spending

Proposed budget measure

- The proposal would reduce the price paid by government for drugs on the Pharmaceutical Benefits Scheme (PBS).
- Spending on PBS drugs is large and growing fast
 - The PBS provides subsidised medicines. Patients pay a maximum fee of \$36.10 per prescription (\$5.90 for those on the pension or safety net) and the government pays the remaining cost.
 - The PBS costs the budget more than \$9b/yr.¹ Government paid 83% of the cost of PBS drugs in 2011-12.²
 - Spending on the PBS grew by 6% per year from 2007 to 2011.¹
- Countries such as New Zealand, and Australian state hospital purchasing authorities have better contained their drug costs.³
- The Commonwealth Government could achieve similarly low costs by:
 - Creating an independent pharmaceutical pricing authority that sets prices for PBS drugs, within a defined budget.
 - Requiring at least a 50% price cut when drugs come off patent.
 - Benchmarking drug prices against the lowest in the world.
 - Authorising an expert panel to set cost-effective substitutions of medicines (with exemptions for medical necessity).⁴

Social impacts

- Lower drug prices benefit patients as well as government budgets.
 - 11% of disadvantaged patients report not filling, or delaying filling, a prescription due to cost (compared to 7% of least disadvantaged patients).⁶
 - The proposed model could save patients up to \$22 per pack of pills.
- Concerns have been raised about whether drug companies would supply drugs at a lower price. However, benchmarking would not take prices below those paid elsewhere, where drug companies are making a profit.
- A sole-supplier model (like NZ) might be vulnerable to supply-chain problems. But under the proposed model, many companies could sell to the PBS. This would limit supply chain risks.

Social impacts: Positive

Impact on bottom 20%: Neutral

Budget impact

- Savings of at least \$1.8b/yr are readily available.
 - Previous Grattan research conservatively estimated savings of \$1.3b/yr from price reductions only on identical drugs already available in New Zealand and other Australian states.^{1,4}
- Much larger savings from cost-effective substitutions are likely.
 - When an identical drug was not available to compare in these jurisdictions, even using the most expensive drug in the same class available would yield total additional savings of at least \$0.5b/yr.
 - For instance, substituting ranibizumab for the cheaper but equally effective bevacizumab would save \$0.2b/yr.⁵
 - The study only covered 43% of PBS expenditure. For the remaining 57% of spending that is for drugs where there is not a cheaper benchmark for the identical drug identified, there may well be cost-effective substitutes.
 - However, clinical expertise is required to propose specific cost-effective substitutions.

Contribution to budget: \$2b

Confidence: Med-high

Economic impacts

- There is no basis for concerns that lower drug prices will reduce research and development for new medications in Australia.
 - There is no evidence of a link between high drug prices and levels of pharmaceutical research in a given country.⁷
 - In any case, most of the savings come from cheaper prices for drugs off-patent, with no research and development premium.
- Reduced drug prices might reduce incentives to conduct clinical trials in Australia, but there are cheaper and more direct ways to encourage this.
- Lower drug prices would reduce profits to the community pharmacy sector, which relies on percentage mark-ups on the price of drugs and therefore profits when drug prices are higher. Reducing these profits would not have a net negative economic impact.

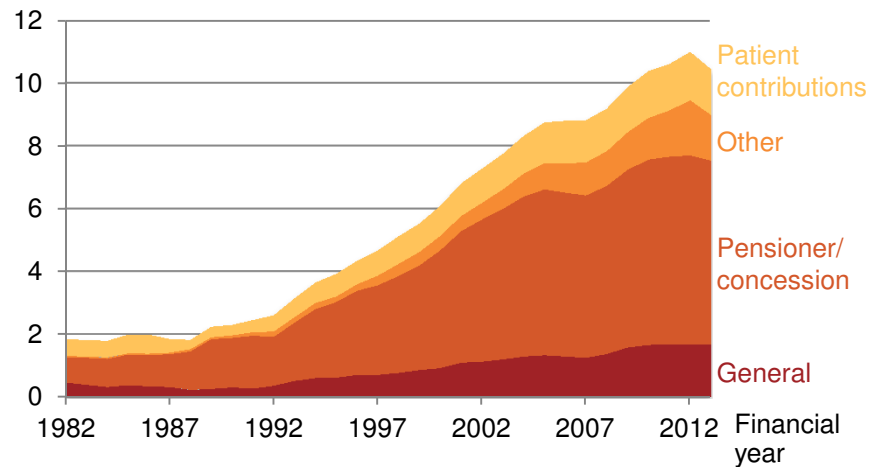
Economic impacts: Moderately positive

Sources: 1. AIHW (2012) 2. DoHA (2012) 3. PHARMAC (2012) 4. As proposed in Duckett *et al* (2013) Changes to price disclosure since publication may have reduced this figure to around \$1b per year. 5. Grattan unpublished analysis, see Duckett *et al* (2013) 6. ABS (2012c) cat 4839.0 7. Light and Lexchin (2005)

Pharmaceuticals spending

Expenditure on the PBS has grown rapidly

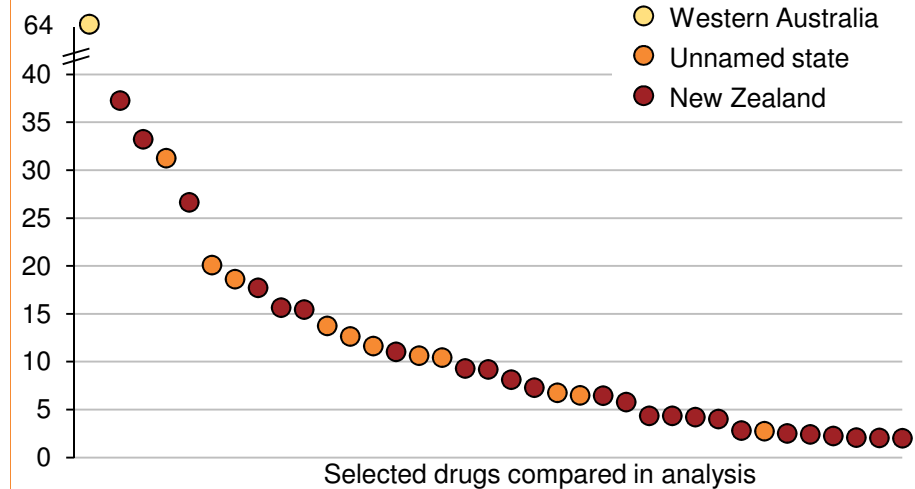
PBS expenditure by category (2013\$b)



Source: Duckett and Willcox (2011)

PBS prices are often much higher than those paid elsewhere

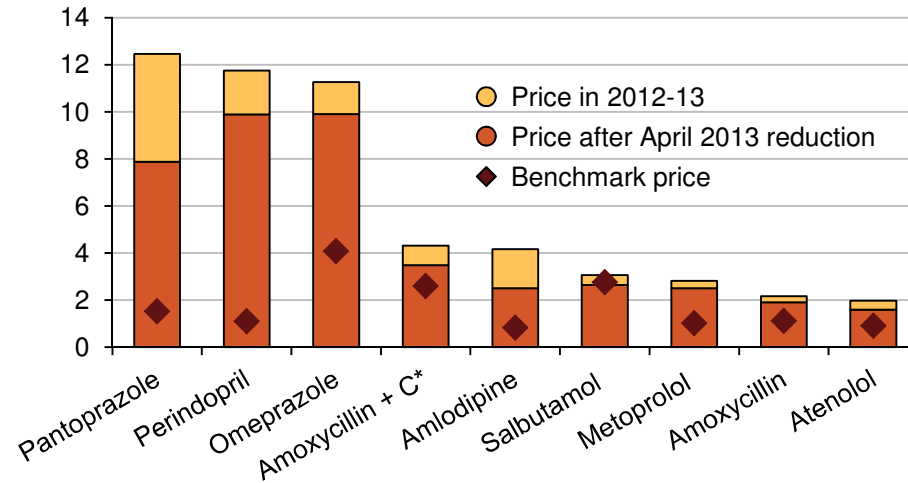
PBS prices as multiples of NZ, WA and another state's prices



Source: Duckett et al (2013)

Current attempts to lower prices aren't working well enough

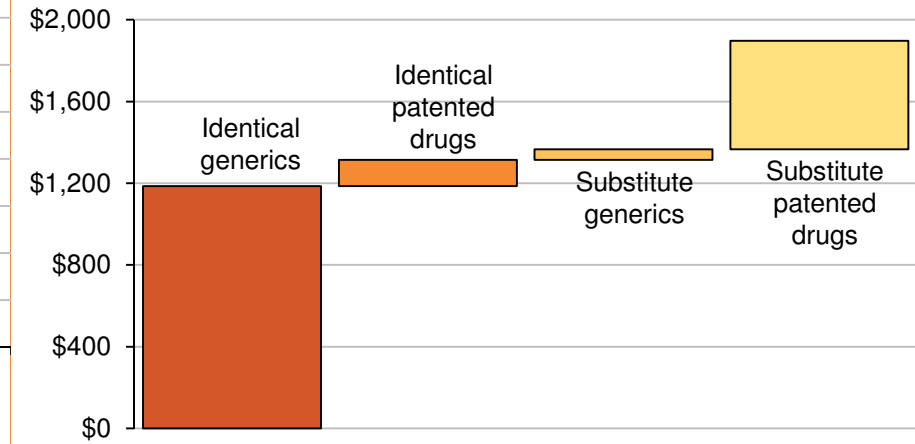
Ex-manufacturer price (\$)



Note: *Amoxicillin with Clavulanic Acid. Source: Duckett et al. (2013), converted to \$2013.

Savings of \$1.8b a year are possible on just 75 drugs

Savings from different drug groups (benchmarking model) (\$m)



Source: Duckett et al (2013), converted to \$2013

Cost-effectiveness of treatments

Proposed budget measure

- The proposal would increase the cost-effectiveness of medical treatment without compromising the quality of care. Changes may include:
 - stopping or reducing procedures with no, or limited, clinical benefit.
 - providing the right interventions to the right people.
 - using the most cost effective interventions.
- There are many ways to achieve these outcomes including benchmarking costs; improving the listing processes for the MBS; developing patient care tracks; performance management; better consumer information; and developing and implementing clinical guidelines.
- There is ample opportunity to improve
 - Only three per cent of items approved by the Medicare Benefits Schedule (MBS) have been formally assessed against evidence of safety, effectiveness and cost-effectiveness.¹ A number of potentially low-value services have been identified.¹
 - A Comprehensive Management Framework for the MBS was developed in 2011-12, with a new MBS listing process that includes a review of evidence, and rolling reviews of already listed procedures.²

Social impacts

- Providing cost-effective treatments can have large social benefits, as patients are less likely to experience ineffective treatments.
- However, decisions to no longer offer a treatment that is generally not seen as cost-effective are not straightforward.
 - The right combination of measures of patient safety, health benefit, appropriate use and cost-effectiveness needs to be assessed.¹
 - There is a risk that some patients who would benefit disproportionately from a generally non-cost-effective treatment may have more difficulty accessing that treatment.
- If fewer resources are being wasted on treatments that are not cost-effective, the proposal may increase access to the health system and improve the effectiveness and quality of care.

Social impacts: Mod negative

Impact on bottom 20%: Neutral

Budget impact

- Reducing the incidence of 'marginal medicine' through a range of measures could save more than \$2b per year.
 - In the UK, savings of £0.6b/yr have been identified if the clinical guidelines developed by NICE are fully implemented, equivalent to 0.6% of National Health Service (NHS) spending per year.³
 - Other analysis suggests that 5-7% of the NHS budget could be saved by discontinuing low value-added healthcare interventions and ensuring compliance with commissioners' standards. This would be worth between £4.7 and £6.6b/yr.⁴
 - Reductions of a similar magnitude in Australia would reduce government health spending by up to \$5b/yr. While there is clearly some 'marginal medicine' being practiced in Australia,¹ the amount of scope for improvement is unclear.
- Some of these savings may overlap with other proposals for improving health service efficiency presented in this report.

Contribution to budget: \$2b

Confidence: Low

Economic impacts

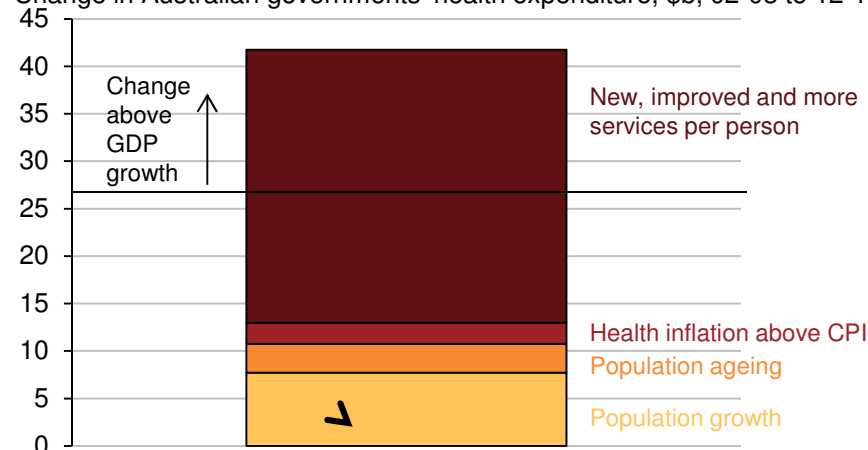
- Savings made through improving cost-effectiveness could be reinvested into the health system to pay for increasing demand for services.
- Health is a major determinant of workforce participation and productivity.⁵ More effective use of health resources can therefore increase economic activity.

Economic impacts: Moderately positive

Cost-effectiveness of treatments

Health expenditure is rising rapidly, and is mostly due to people using more and better services

Change in Australian governments' health expenditure, \$b, 02-03 to 12-13



Source: Daley *et al* (2013)

The UK has developed guidance for reducing 'marginal medicine'

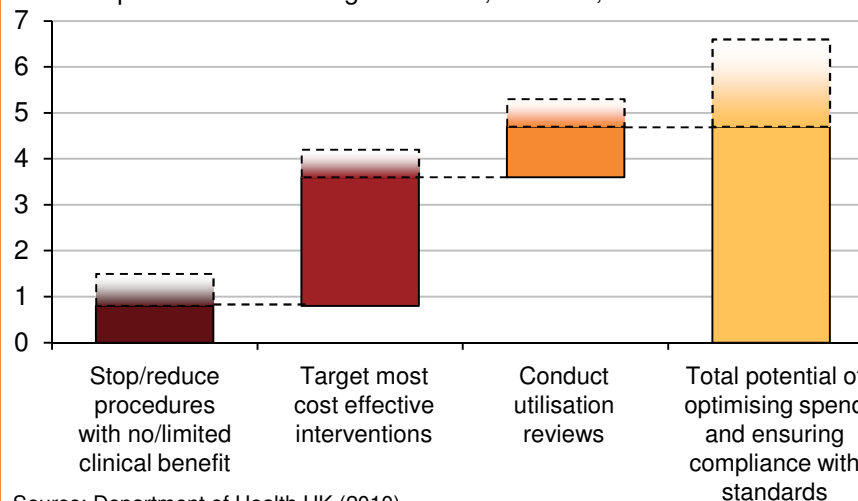
Top five cost-saving guidelines identified by NICE

Guideline	Reason why the guideline saves money	Savings per 10m people, £m/yr
Less invasive IV fluid management	Reduced hospital length of stay and fewer postoperative complications for patients	81
Change drug treatment for hypertension	Better drug regime will cost more upfront, but offset by avoided heart attacks and strokes	45
Long-acting reversible contraception	More expensive upfront than contraceptive pill, but fewer unplanned pregnancies	21
Change drug treatment for vascular disease	Drug now recommended for a larger group of people; will reduce risk of adverse events	13
Change treatment for constipation in women	Reduce referrals to consultants, and invasive interventions or surgery	7

Source: NICE (2013)

UK analysis suggests large savings from improving cost-effectiveness

Value of potential cost-saving measures, 2013-14, £b



Source: Department of Health UK (2010)

Potentially low-value health care practices have been identified here

Services identified as potentially ineffective or unsafe for some classes of patients

- Testing of patients for factor V Leiden gene mutation
- Arthroscopic surgery for knee osteoarthritis
- Testing for C-reactive protein
- Use of chest x-ray for some purposes
- Chlamydia screening
- Exercise electrocardiogram (ECG) for angina
- Imaging in cases of low back pain
- Liver function tests
- Blood, urine or plasma testing in end-stage renal disease
- Radical prostatectomy
- Radiotherapy for patients with metastatic spinal cord disease
- Routine dilatation and curettage
- Surgery for obstructive sleep apnoea

Source: Elshaug *et al* (2012)

Defence spending

Proposed budget measure

- The proposal would reduce defence spending through efficiencies and reductions in defence capability.
 - Specific efficiencies are difficult to identify given the opaque nature of the defence budget to those outside Defence agencies.
 - Capability reduction may be possible given that some believe that Australia's planned force capability and budgets are not well-aligned with strategic goals,^{1,2,3,4} and that "the biggest drain [on the Defence budget] is the billions spent on capabilities we do not need".⁵
- However, current defence spending is already at historic lows.
 - Commonwealth government defence spending in 2013-14 will be \$25b, 6.5% of its budget,⁶ and 1.6% of GDP, the lowest figure since 1938.¹ An additional \$6b is budgeted for capital investment.⁷
- Substantial increases in defence spending are planned
 - Defence spending is forecast to grow 3.6% over the forward estimates, and 2.5%/year (real) to 2023.¹ Growth of 2.6%/year (real) is needed to maintain capability given technology and wage costs.¹
 - The 2013 Defence White Paper aspired to spending at 2% of GDP.⁸

Social impacts

- Defence spending manages risks rather than providing direct benefits.
- Australia's defence spending has multiple goals:
 - Official defence policy since 1976 has been the 'Defence of Australia' doctrine, which prioritises Australia's own defence. Although some question the realism of this goal,^{5,12} it justified limited spending in the absence of credible threats to Australian sovereignty.¹
 - Australia is implicitly obliged to maintain the ability to contribute to the defence and other military operations of allies, particularly the US, although current spending is higher than that of many other allies.¹²
- Apparent waste, and spending not aligned to strategic plans, may allow cuts with limited impact on strategic goals and capabilities that are not being met anyway.^{1,2,12} Raising spending to match strategic plans would require much higher increases than those already planned.

Social impacts: Neutral

Impact on bottom 20%: Neutral

Budget impact

- Savings of around \$2b per year may be possible
 - The UK 2011 Budget planned real reductions in underlying defence spending of 8.8% over four years.¹ This would equate to approximately \$0.6b/y in the Australian defence budget.
 - The Strategic Reform Program, a program of efficiencies and savings announced in the 2009 White Paper, projected savings of \$20b over 10 years.⁹ Some external analysts suggest this target was overambitious, and it is not clear how much has been achieved, but it seems likely that significant savings are still available.^{1,10}
 - A deliberate reduction of defence capability not aligned with strategic defence goals might yield additional savings. A 2008 analysis suggested that a reduction in force capability could yield savings of \$46.1b over 15 years.¹¹ This would result in a defence force much less capable at the high end of warfighting, but still adequate for the most likely scenarios.

Contribution to budget: \$2b

Confidence: Low

Economic impacts

- Australia continues to use defence procurement as de facto industry policy; state governments lobby for major assets to be built in their State. Buying equipment from overseas would lead to the decline of some industries, such as shipbuilding, and consequent unemployment.
- However, defence procurement is very inefficient industry policy.
 - Around two-thirds of spending on materiel in Australia goes to large, mostly foreign-owned companies.¹
 - Government spending per employee is high. Building the next generation of subs in Australia will cost at least \$250k/y per job.¹³
 - Revenue per employee for defence industry firms is relatively low.¹
 - The defence industry comprises only 0.29% of jobs in Australia.¹
- Local procurement is already declining: local firms won 53% of Defence Materiel in 2011-12, down from 80% in 2007-08.¹

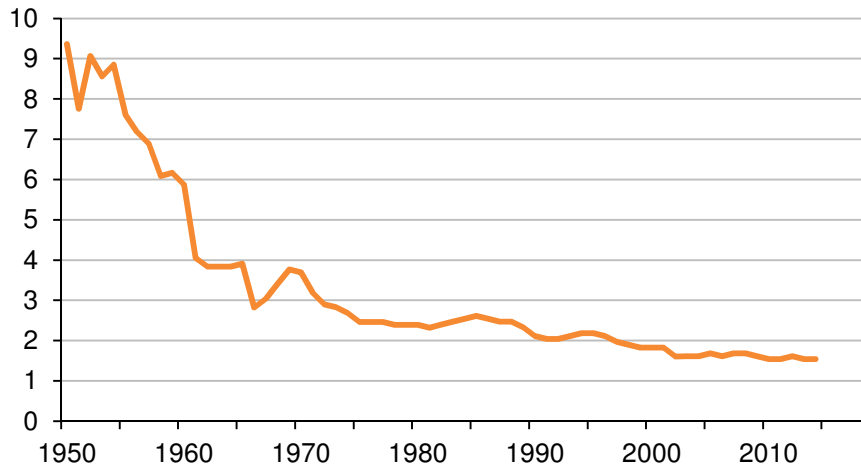
Economic impacts: Neutral

Sources: 1. Thomson (2013) 2. Davies (2013a); Davies (2013b) 3. Brown and Medcalf (2013) 4. Lewis (2012) 5. White (2012) 6. Estimates of Defence spending vary: figures here are ASPI estimates of net defence funding, which exclude national security (approx. \$1b/y), purchases of non-financial assets (\$5.2b/y), and Defence housing and superannuation. 7. Watt (2013) 8. Defence (2013) 9. Defence (2009) 10. Thomson and Davies (2013) 11. Davies (2008) 12. Thomson (2012) 13. Grattan analysis of DMO (2013); Kerin (2013)

Defence spending

Defence spending has declined steadily

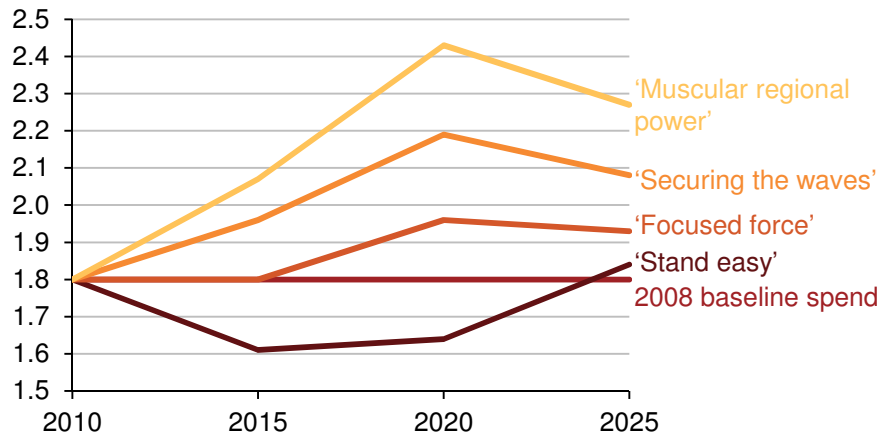
Australian defence expenditure since 1950, % of GDP



Source: Watt and Payne (2013)

Choices about capability can make big differences to budgets

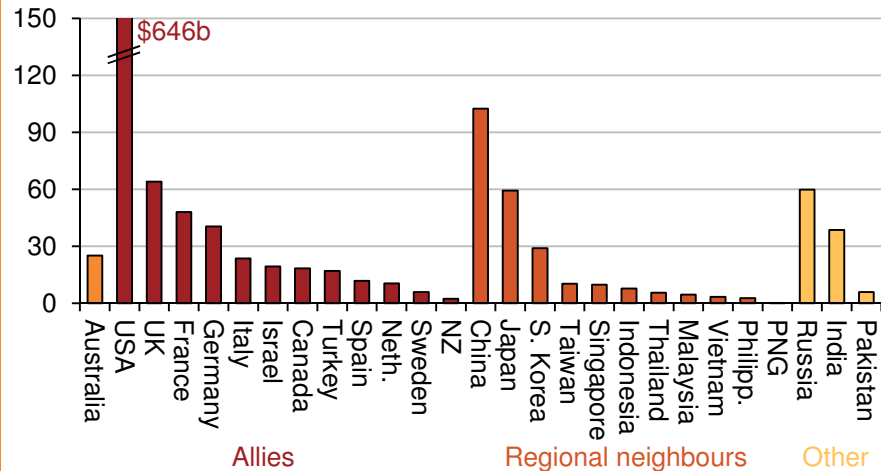
Indicative cost of selected defence capability scenarios, % of GDP



Note: These scenarios are no longer directly applicable due to subsequent budget decisions, but give an indication of the scale of options available. Source: Grattan analysis of Davies (2008).

Australia spends more on defence than most neighbours and allies

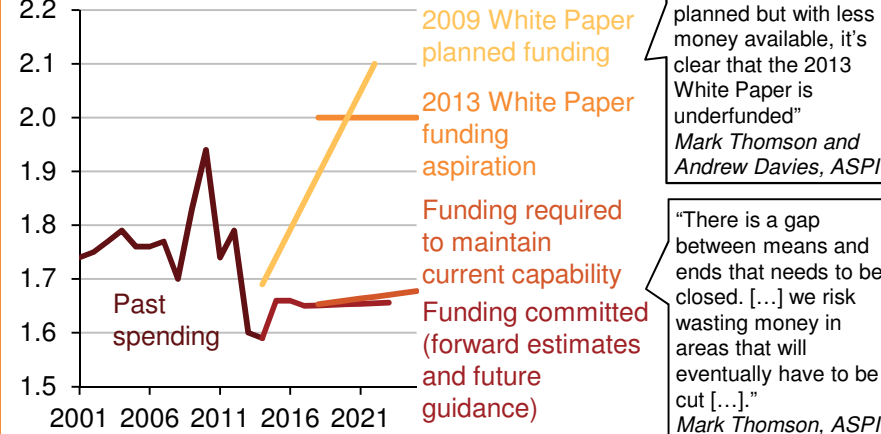
2012 defence spending, US \$b at prevailing market exchange rates



Source: Thomson (2013)

Planned capability is already misaligned with available funding

Current and planned defence spending, % of GDP



"With more capability planned but with less money available, it's clear that the 2013 White Paper is underfunded"
Mark Thomson and Andrew Davies, ASPI

"There is a gap between means and ends that needs to be closed. [...] we risk wasting money in areas that will eventually have to be cut [...]."
Mark Thomson, ASPI

Source: Grattan analysis of Thomson (2013) and Thomson and Davies (2013)

School class sizes

Proposed budget measure

- The proposal would increase class sizes, and thus reduce the number of teachers employed, while increasing teacher salaries.
- Australian governments spend \$42b on schools each year.¹ Teacher salaries are the single biggest expenditure item in school budgets.²
- The average class size in Australia in 2012 was 23.5.³ This translates into an average student-teacher ratio of 13.8:1.⁴ Increasing average class size to 27.5 would increase the student-teacher ratio to 16:1.⁴
- Larger class sizes will not necessarily impair the impact of schooling on student learning, which is primarily driven by teacher quality.⁵
- Increasing class sizes will be politically difficult given community belief that smaller class sizes improve student learning.

Budget impact

- Raising class sizes by 4 students/class would reduce teacher numbers by 22,800, and government spending on teacher salaries by \$3.4b/y.⁶
 - Spending would reduce on both teacher salaries and on-costs.
 - Estimates are based on average teacher salaries in Qld, Vic, and NSW, and distribution of teachers across salary bands in Qld.
 - Assumes that class sizes fall uniformly across school sectors, and that teacher salaries are the same across sectors.
- Funding changes may affect students shifting between sectors. Effects are complex and have not been included in the cost estimate.
 - Parents who perceive lower class sizes as better may shift students into non-government schools, reducing government budget costs.
 - Non-government schools may raise fees to retain current class sizes. This may shift some students back to government schools, increasing government budget costs.

Contribution to budget: \$3b

Confidence: Med-high

Social impacts

- Proposed class size increase would probably have little impact on academic outcomes, although the research is mixed:
 - OECD's PISA suggests smaller class sizes are not necessarily associated with better student performance.⁷
 - Most meta-analyses show that class size has no impact on student learning,^{8,9} although a few studies show a small positive effect.¹⁰
 - There is limited research on how class sizes affect other outcomes including motivation, resilience and emotional intelligence.
 - Smaller class sizes (15 or less) can benefit students in lower primary school, but have little impact on later grades.¹¹
 - Smaller class sizes may benefit students from disadvantaged backgrounds,¹¹ although this is contested.⁷
- Educational outcomes are closely related to teacher quality,⁵ maintaining teacher quality as teacher numbers fall will be important.

Social impacts: Neutral

Impact on bottom 20%: Mod negative

Economic impacts

- Cuts to the teaching workforce may increase short-run unemployment.
- Long-run economic outcomes are driven by the quality of education, and therefore by whether smaller class sizes in fact lead to better education
- Education quality is heavily dependent on teacher quality.⁵
 - Overall teacher quality would need to be maintained as teacher numbers fall. If mostly low-quality teachers leave the system, overall quality would rise, but this may be difficult to achieve. If high-quality teachers leave (e.g. taking up voluntary redundancies), then education quality may fall.

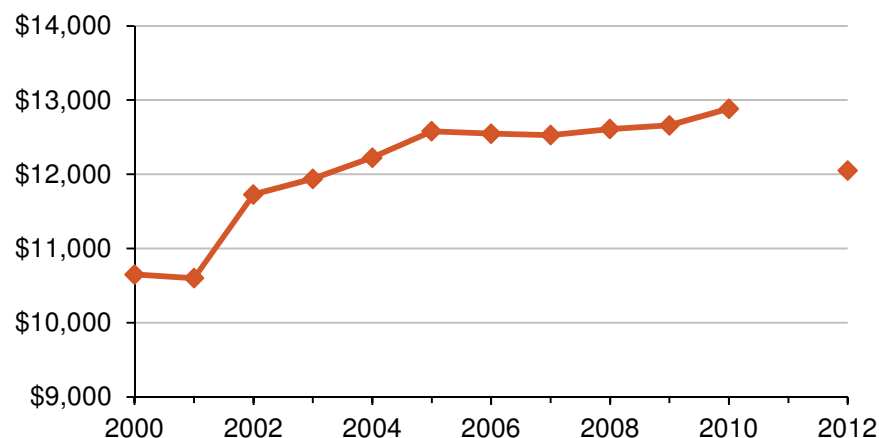
Economic impacts: Neutral

Sources: 1. Daley *et al* (2013) 2. DEEWR (2012) 3. OECD (2013a) 4. ABS (2013r) cat no 4221.0, assuming a constant relationship b/n class size and student teacher ratio, though this is more complex in practice (OECD (2010)) 5. Hanushek *et al*. (1998); Nye *et al*. (2004), Rockoff (2004); Aaronson *et al*. (2007); Leigh and Ryan (2011) 6. Grattan analysis of Productivity Commission (multiple years); Daley *et al* (2013); ABS (2013r) cat no 4221 7. OECD (2010) 8. Hoxby (2000) 9. Chingos (2011) 10. Hanushek (2003); Krueger (1999); Hattie (2005); Mishel and Rothstein (2002) 11. Krueger (1999)

School class sizes

Government expenditure on school education has increased

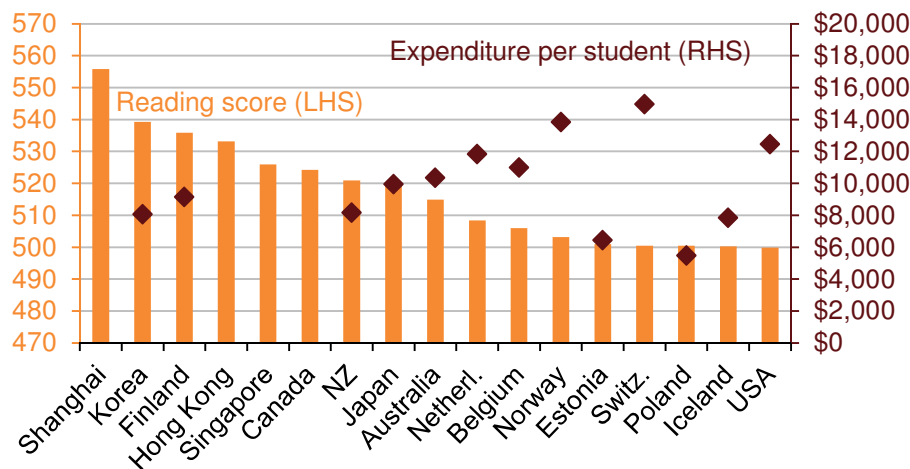
Expenditure per student, \$2011-12



Note: government expenditure on both government and non-government schools.
Source: Grattan analysis of Productivity Commission (multiple years); Daley *et al* (2013)

There is little relationship between expenditure and performance

PISA average reading score (2009) & expenditure per student (US\$2010)



Note: Top 15 performing education systems in PISA. Some of these do not participate in OECD's Education at a Glance paper so expenditure data is not available. Source: OECD (2010); OECD (2013a)

Class size has relatively little impact on student achievement

A sample of influences on student achievement

Rank	Influence	# of studies	Effect size
1	Feedback	13,209	0.81
2	Direct instruction	1,925	0.81
3	Prior achievement	619	0.80
4	Lack of disruptive students	1,511	0.79
5	Quality of teaching	808	0.67
6	Phonological awareness	429	0.66
7	Early intervention	30,275	0.64
8	Peer assessment	308	0.63
9	Challenging goals	959	0.59
10	Self-assessment	521	0.56
<hr/>			
40	Class size	2559	0.13

Source: Hattie (2005)

Most studies show large reductions in class sizes have little impact

Studies of impact of reducing class sizes from 25 to 15

Study	# of studies	# of students	Effect size
Glass and Smith (1978)	77	50899	0.09
Smith and Glass (1980)	59		0.24
Finn (1998)	1	6500	0.22
McGiverin et al (1989)	10		0.40
Molnar et al. (1999)	1	9790	0.21
Hoxby (2000)	1	306453	0.03
Blatchford et al (2005)	1	9330	0.23
Goldstein et al (2000)	9	29440	0.20
Dustmann et al (2003)	1	3811	-0.04
Akerhielm (1995)	1	24000	0.15
Rice (1999)	1	24599	-0.04
Johnson et al (2004)	1	3700	0.00
Angrist & Lavey (1999)	1	46455	0.15
Urquiola	1	10018	0.20
Average	164	948540	0.13

Source: Hattie (2005)

Student subsidies for higher education

Proposed budget measure

- The proposal would reduce the direct government subsidy for higher education to half its current rate, and correspondingly increase student income-contingent loans.¹
- The current direct government subsidy for tuition is large.
 - The amount of direct government subsidy varies from course to course, from 16 per cent for Law, Accounting, Economics and Commerce, to around 60 per cent for Agriculture.²
 - By 2016-17, direct government subsidies for higher education tuition will cost about \$7b a year.³
- In addition to the direct government subsidy, government provides income-contingent loans through HECS-HELP, repaid as a percentage of income if earnings are above a threshold (currently \$51,300).⁴

Social impacts

- University participation generates positive financial and non-financial spill-overs.
- Analysis of past changes in subsidy levels suggests that higher student loans are unlikely to affect overall participation rates, or participation rates of disadvantaged groups.¹
- However, if demand for education is more elastic than expected, there may be negative social impacts as fewer people attend university.
- With larger HELP debt balances, graduates may prefer not to take work in low-paying but socially beneficial jobs, although this risk is low given the income-contingent loans scheme currently in place.⁵
- Cash income to universities would remain the same, so there would be minimal effect on university sustainability.

Social impacts: Neutral

Bottom 20%: Neutral

Budget impact

- Decreasing the tuition subsidy to about half its current rate would save about \$3b a year, based on projected expenditure in 2016-17.
- A phased reduction would provide time to ensure that there are in fact no reductions in participation:
 - Possible phasing could be based on 80% of the current spending in year 1, 70% in year 2 and so on until 50% subsidy is reached.
 - Higher subsidies could be maintained in areas with high workforce demand and significant social spill-overs not captured in private benefits to graduates, such as nursing. Provided there is no change in participation, there will be no change to other tax revenues.

Contribution to budget: \$3b

Confidence in estimate: High

Economic impacts

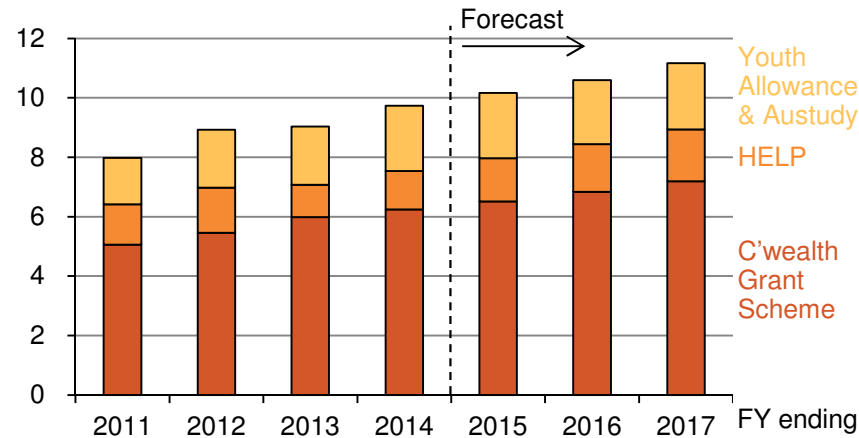
- Similarly to social impacts, economic impacts depend on whether higher student loans affect university participation rates. This is unlikely given previous experience.
- Progressive implementation would allow policymakers to evaluate whether higher loans reduce student numbers. Government subsidy cuts should be tempered if, contrary to previous experience, there are material reductions in student numbers.

Economic impacts: Neutral

Student subsidies for higher education

The demand-driven system has increased Commonwealth commitments to tertiary education

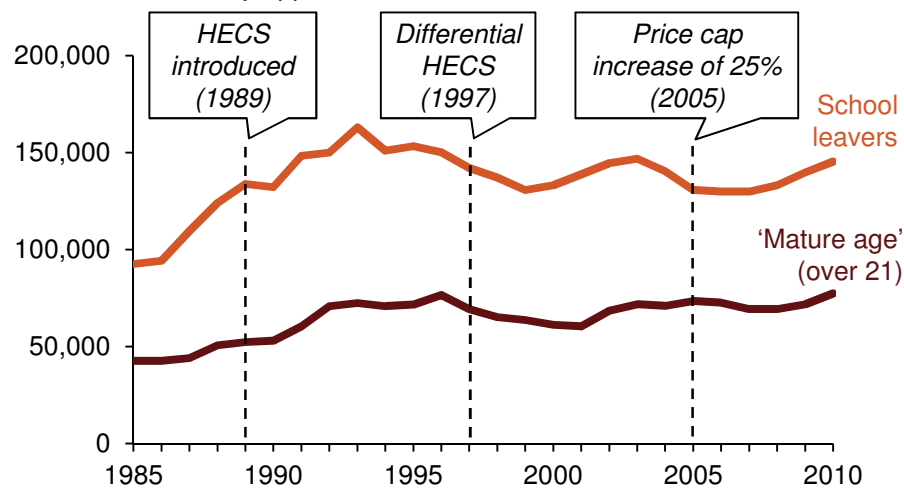
Commonwealth spending on tertiary education \$b



Source: Grattan analysis of DIICSRTE (2013)

Past increases in student loans did not obviously affect demand

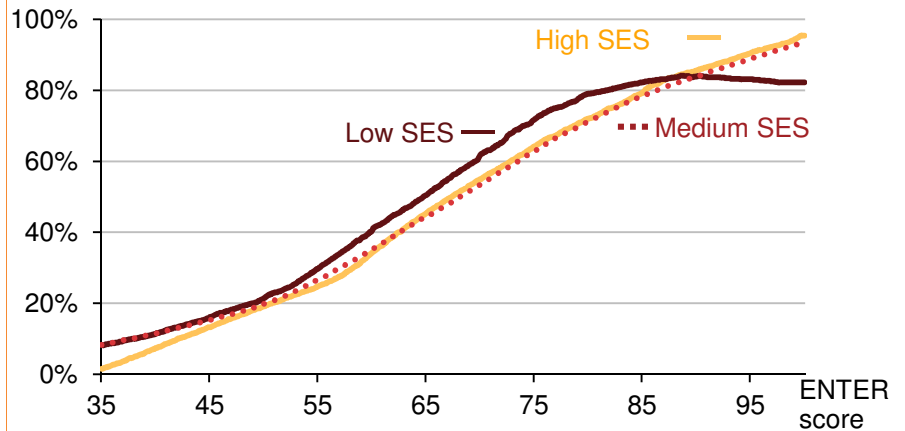
Number of university applicants



Source: Vice Chancellors' Committee Report, in Deloitte Access Economics (2011)

Existing loans do not seem to disproportionately discourage low-SES students from attending university

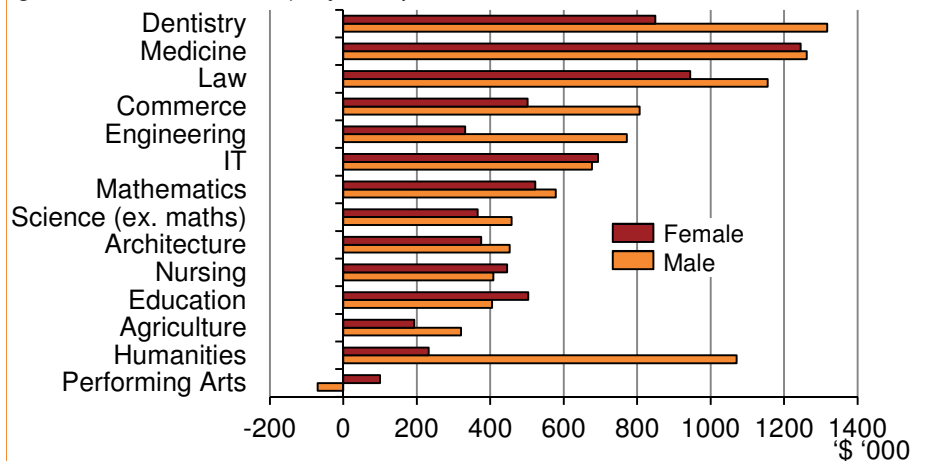
% of students with given ENTER score enrolling in higher education



Note: The apparent levelling-off for high-scoring low-SES students may not be real; sample size for this group is small. Source: Norton (2012) based on Cardak and Ryan (2006)

There are very large private benefits to tertiary study

Lifetime net private financial impact for median graduates (compared to non-graduates with Year 12), by discipline



Source: Grattan analysis of ABS (2006a)

Proposals worth less than \$2 billion per year (1)

Middle-class welfare	Budget impact: Up to \$2b
<p>Family Tax Benefit (FTB) is a two-part payment to families with children. FTB Part A is the more tightly means tested payment, aimed at low to middle income families. It will cost \$14.3b in 2013-14. FTB Part B is paid to two-parent families where one parent has little or no income and the other parent earns up to \$150,000/yr. The means test applies to the second income earner, who can earn up to \$5,000/yr. without affecting the payment rate. For a family whose youngest child is aged 5-18, the payment cuts out once the second income earner earns \$20,000/yr. There is no workforce participation requirement or assets test. Single parents earning under \$150,000 also receive the maximum rate.¹ FTB Part B costs \$4.6b/yr.², although most of this goes to low-income families. Abolishing the payment for families with combined taxable incomes of above \$100,000 would save \$0.5b/yr. Applying tougher participation requirements for those with children of school age, similar to those now required for parenting payments, would save up to an additional \$1.5b/yr.³</p>	
Subsidies for first home buyers	Budget impact: \$1.3b
<p>Under the intergovernmental agreement on the GST, states and territories are required to pay grants to first home owners. Future expenditure on these grants was estimated in 2012 to be \$0.75b/yr.⁴ Some states have recently limited grants to buyers of newly constructed houses,⁵ so actual savings from abolition may be lower. Some states also offer stamp duty concessions to first home buyers, costing budgets around \$0.56b/yr in 2012-13.⁶ The Commonwealth Government's First Home Saver Account policy costs the budget \$0.02b/yr in contributions and foregone tax revenue.^{2,7}</p>	
Improve public sector efficiency without cutting frontline staff	Budget impact: \$1.5b
<p>Across-the-board reductions in funding for government departments have long been used to improve efficiency and reduce costs. Frontline staff and services, and small agencies, are generally excluded. In recent years, annual reductions, or 'efficiency dividends' of 1.25 to 1.5% have been applied to most Commonwealth agencies.⁸ Governments also impose additional cuts above this base rate. In 2011, the Commonwealth imposed an additional efficiency dividend of 2.5% (on top of the base rate of 1.5%). This was estimated to raise \$0.5b/yr.⁹ The Victorian Government expects to raise \$0.05b/yr by increasing its efficiency dividend from 2% to 2.5%.⁵ Extrapolating nationally, this suggests that a 2.5% cut across all levels of government would save \$1.5b/yr.</p>	

Sources: 1. DHS (2013b) 2. Treasury (2013a) 3. Unpublished NATSEM modelling, cited in Karvelas (2013) 4. Treasury (2012) 5. DTF Victoria (2013) 6. Grattan analysis of state government budget papers 7. Treasury (2013c) 8. Horne (2012) 9. Treasury (2011a)

Proposals worth less than \$2 billion per year (2)

Avoidable hospital costs	Budget impact: \$1b
<p>Australian governments spent \$98b on health in 2012-13.¹ Hospitals are the single biggest expense - \$38b/yr and growing.¹ There is large variation in the cost of services between hospitals. Only some of this variation is explained by the type of treatment, type of patient (age, disadvantage and health risks) or characteristics of the hospital (including size and specialisation). Some hospitals spend more than \$1,000 per admission above the national average.² While some of the cost variation may be explained by the provision of higher quality care, some may be avoidable. Costs could be reduced through activity based funding that sets a 'price' reflecting an efficient delivery of different procedures, encouraging hospitals to identify and reduce avoidable costs. Governments would need to monitor activity and cost reductions to make sure that block funding does not restrict the impact of incentives created by activity based funding. Governments could also consider consequences for hospital and hospital network management who fail to reduce avoidable costs. Such an approach could save \$1b/yr.</p>	
Improving of end of life care	Budget impact: <\$1b
<p>The National Hospital Cost Data Collection suggests that the cost of hospital admissions in the year before death (for people aged over 65) may be around \$2 billion a year.³ Overall costs of end of life care are probably higher, as this does not capture the costs of other kinds of health care and support provided outside hospital. Although the cost of end of life care is substantial, there are few concrete proposals to reduce it, and savings are unlikely to be large.</p>	
Introduce congestion charging	Budget impact: <\$1b
<p>If implemented well, congestion charging can be effective in reducing traffic congestion and making more efficient use of existing road infrastructure.⁴ In theory, it could also raise revenue. For example, a charge of 10 cents/km travelled in the Sydney metropolitan area could raise up to \$3b in revenue.⁵ However, international experience shows that it is extremely difficult to implement congestion charging unless the majority of the revenue is directed towards improving public transport infrastructure.⁶ There is no reason to think that Australia is different in this regard; surveys here suggest that road pricing proposals have much more public support if funds are used to lower car registration charges, eliminate existing tolls, and improve public transport.^{7,8} A congestion charge regime would have to be close to budget-neutral to be feasible.</p>	

2. Previous experience of budget repair

2.1 Australian commissions of audit

The most common institution for budget repair in recent decades in Australia has been a commission of audit.¹ Australian governments have established thirteen commissions of audit since 1988. They fall in two periods. The Commonwealth and all six states appointed commissions at some stage between 1988 and 1996. There were no further commissions until 2008. Since 2008, all states and territories except Tasmania and the ACT have held a commission, as shown in Table 1.

In October 2013, the Commonwealth Government announced a National Commission of Audit, with a wide scope to look at most aspects of government operations and finances.² It also committed to a tax review.

The commissions in the first wave (1998-1996) were all established by incoming Liberal-National governments who had spent several years in opposition. Many, but not all, of these governments faced major budget and financial challenges. Many were skeptical of the willingness and capacity of the public service to solve the problems, particularly given concerns about corruption and maladministration in some jurisdictions. These commissions were held when there was considerable enthusiasm for 'New Public Management', which espoused applying private sector approaches and market principles to the public sector.³

All except one of the second wave of audits were also established by incoming coalition governments (the exception was the South Australian Sustainable Budget Commission). Again, they were usually established in response to fiscal challenges facing the government, although the magnitude of the problems varied.

Although they are commonly thought of as institutions focused on finding spending cuts – and this was the primary function of many audits – commissions also played a significant role in identifying more efficient and effective ways of delivering public services, and considering the appropriate role of government. The wide-ranging terms of reference for the Commonwealth's new commission provide ample scope for this, although whether it can be done effectively in the specified timetable is questionable.⁴

Commissions of audit have had a mixed record of success, both in fixing budgets and in driving public sector reform. Their success can be measured in a number of ways, including how effectively they contributed to budget repair, and to what extent government adopted their recommendations. Their success as political instruments is beyond the scope of this paper.

¹ The following analysis of commissions of audit draws heavily on the thorough treatment of the subject in Jones and Prasser (forthcoming)

² Hockey and Cormann (2013)

³ Jones and Prasser (forthcoming)

⁴ Martin (2013)

Table 1: Australian commissions of audit 1998-2013

Year	Jurisdiction	Title	Chair	Report date/s
Wave 1: 1988 - 1996				
1988	NSW	Commission of Audit	Curran	July 1988
1992	Tas	Independent Commission to Review Tasmania's Public Sector Finances	Curran	April 1992
1992	Victoria	Victorian Commission of Audit	Officer	May 1993
1993	WA	Independent Commission to Review Public Sector Finances	McCarrey	June 1993; August 1993
1993	SA	Commission of Audit	Thomas	April 1994
1996	Qld	Queensland Commission of Audit	Fitzgerald	July 1996
1996	C'th	National Commission of Audit	Officer	June 1996
Wave 2: 2008 - 2013				
2008	WA	Economic Audit Committee	Marney	Oct 2009
2009	SA	Sustainable Budget Commission	Carmody	Dec 2009; August 2010
2011	Victoria	Independent Review of State Finances	Vertigan	April 2011; final report not released
2011	NSW	Commission of Audit	Lambert/Schott	Jan 2012; August 2012
2012	Qld	Independent Commission of Audit	Costello	June 2012; April 2013
2012	NT	Renewal Management Board	Conn	Oct 2012 (progress report)
2013	C'th	National Commission of Audit	Shepherd	Jan 2014; March 2014 (expected)

Source: Jones and Prasser (forthcoming); Hockey and Cormann (2013)

A commission of audit is not a magic bullet for budget repair. Some, such as the Commonwealth (1996) and Victoria (1993) have coincided with significant improvement in government balance sheets, but others have not. Governments that have been successful in repairing budgets have also undertaken other fiscal reforms alongside the commission, so it's difficult to attribute success solely to the commission.

Similarly, commissions have had mixed success in driving broader public sector reforms. Whether or not their specific recommendations were adopted, the first wave of commissions were important in driving debates about the role and size of governments. Even when the economic rationalist agenda was resisted, they helped to shift the boundaries of political and policy debate. They also tended to bolster the case that the budgetary position was much worse than disclosed by the outgoing government. In doing so, they helped to build the case for the 'charter of budget honesty' reforms that now effectively force incumbent governments to make 'full disclosure' before each election. There is more debate about the success of the second wave of audits: some argue that they prosecuted a case already won.⁵ With the more recent audits, it is simply too early to determine their long-term influence.

2.2 Tax reviews

Commissions of audit have traditionally focused on the spending side of the budget, and had less to say about tax reform. This is at least partly due to their history as instruments for rethinking the scope of government activity. It remains to be seen how much

⁵ Jones and Prasser (forthcoming)

the National Commission of Audit looks at the growing revenue challenges facing the Commonwealth government..

The most recent major Australian tax review was the Australian Future Tax System Review, commonly known as the Henry Review after its chair, Ken Henry. The Review attempted to take a 'root and branch' approach to examining the tax and transfer system, and published an extensive report in 2010.⁶ Its findings were of great interest to policy-makers, but most of its substantial recommendations were rejected by the government.⁷ It was also hampered by its terms of reference excluding any consideration of the GST.

The new Commonwealth Government has committed to its own tax review. Given past experience, its terms of reference should include the whole tax system, and it should be followed by a process that engages more deeply with its recommendations.

2.3 International experiences of budget repair

While Commissions of Audit are a peculiarly Australian phenomenon,⁸ many other countries have gone through periods of budget repair. Table 2 summarises evaluations of budget repair in three countries: Canada, the UK and New Zealand.⁹

⁶ Treasury (2010)

⁷ Swan and Rudd (2010)

⁸ Jones and Prasser (forthcoming)

⁹ These countries were selected because they share a broadly similar political structure and policy culture to Australia, and have successfully achieved fiscal consolidation at some stage in recent decades.

Table 2: Case studies of international budget repair experiences

Theme	Canada ¹⁰	UK ¹¹	New Zealand ¹²
Description	Canada's 1995 repair effort improved the budget balance by almost 5 per cent of GDP between 1994 and 1997. Net debt fell from 74 per cent of GDP in 1995-6 to 34 per cent in 2007-08.	The UK made four attempts at budget repair in recent decades: in 1980, 1984, 1993 and 2007. The 1994 and 1993 consolidations met or exceeded their stated objectives; the other two did not.	In 1984, New Zealand had a budget deficit of \$2.3bn. Government debt in 1990 was 51% of GDP. By 2000, government debt had fallen to 21% of GDP. Real government expenditure stayed below 1990 levels until 2000.
Public support	Broad-based public support for reform arising from a major debt problem was strengthened by an intensive communication strategy from government, which focused on the difficult choices that would need to be made, and emphasised that the burden would have to be shared across society.	Both successful and unsuccessful plans used promises of future income tax reductions to build political support for cuts.	Reform to budget rules created much greater transparency and accompanying public scrutiny.
Cutting expenditure	The Program Review was an expenditure review focused on the role and priorities of government. Ministers and public servants were expected to identify cuts within their portfolios, and were given a wide remit on how to do so. If they did not, the central review committee would do it for them. In some cases, expenditure of departments was cut in half. Spending for some programs was increased where role justified it.	Successful plans relied more on expenditure reductions. They slowed the real rate of growth in social security, transport and defence expenditure. Cutting capital expenditure contributed to budget repair, but reduced the quality of the nation's public infrastructure stock. Even successful plans failed to cut spending on health, education and policing in real terms, though they did slow growth.	Deep cuts to public expenditure within six weeks of taking office. Implementation of Fiscal Responsibility Act imposed firm discipline on departmental spending. Departments were given fixed, non-indexed budgets and expected to find savings within that to offset any spending increases. Welfare benefits were cut by around 9% in 1991, and the age of eligibility for state pensions was increased. Generalised subsidies in health and education were narrowed to targeted areas.
Growing revenue	Little initial focus on tax reform, given Canada's tax burden was relatively high compared to the US and the two economies were closely integrated. Revenue increases outperformed initial plans.	All plans overestimated expected revenue improvements. Failed plans were hampered by discretionary policy decisions undermining planned revenue improvements, along with nondiscretionary revenue collapses.	Played little role in driving budget consolidation.

¹⁰ Grattan analysis of Bourgon (2009), HM Treasury (2009) and Sancak, *et al.* (2011)

¹¹ Grattan analysis of Abnert, *et al.* Ibid.

¹² Grattan analysis of Kamener and Tan (2012) and HM Treasury (2009)

Theme	Canada ¹⁰	UK ¹¹	New Zealand ¹²
Structural reform	Involved major structural reform, including reconsideration of the role of government in every area of activity. Labour market flexibility was increased, and pensions were restructured.	Cuts focused on controlling key public sector cost drivers: welfare benefits, public sector wages, and subsidies to public sector enterprises. Major privatisations.	Major structural reform, including floating the dollar, removing price controls, dismantling agricultural subsidies, labour market reform, significant privatisations, and public sector management reform.
Federalism	Transfers from the national to provincial governments were reduced. Despite this, provincial governments also improved their budgets through their own fiscal consolidations.	Successful reform efforts were more realistic about the scale of adjustment possible by lower levels of government.	n/a
Scale and pace of reform	A highly ambitious plan that exceeded its targets.	No clear connection between the scale and pace of adjustment and the plan's success.	Ambitious structural and budget reforms resulting in a sustained fall in expenditure.

3. A bluffer's guide to budgets

3.1 General economic and financial terms

Gross domestic product, or **GDP** is a measure of the size of a country's economy. In 2012-13, Australia's GDP is forecast to be approximately \$1,520 billion or \$1.5 trillion.¹³

Inflation measures how much prices have increased over time. It is often measured by the change in the **Consumer Price Index (CPI)** that tracks the prices of what a typical household buys.

As a result of inflation, a loaf of bread costs more today than several years ago. Consequently, \$1 today buys less than \$1 bought in 2000. **Nominal prices** are the prices you see in the shop at the time. **Real prices** remove the effects of inflation so that a dollar has a constant value – it buys the same number of loaves of bread in any year. Real prices provide more meaningful comparisons of spending in different years. Real prices are often expressed in dollar values for a particular year, e.g. 2012 dollars.

In the context of budgets, **nominal spending** is the amount listed in the budget papers each year. **Real spending** removes the effect of inflation so we can compare how spending has actually changed. For example, if government purchases medicines that increase in price by 3 per cent each year, and government spending increases at 3 per cent per year, government buys the same amount of medicine every year. While its nominal spending grows at 3 per cent each year, its real spending is constant.

¹³ Treasury (2012) MYEFO

A **price deflator** converts nominal values into real values, and is based on a measure of inflation. The nominal price divided by the price deflator is the real price.

Production is how much is produced in an economy. **Economic growth** measures the increase in production from time to time.

Productivity measures how much is produced by a given input. **Labour productivity**, for example, measures how much is produced per hour worked. **Capital productivity** measures how much is produced for every dollar invested. **Productivity growth** measures how much more is produced with the same inputs.

The labour force **participation rate** is the proportion of working-age adults (16 years and older) who are either working or looking for work. The **labour force** includes the unemployed, but not people who are retired, institutionalised, or at home caring for children.

Australia, like most developed countries, has an **ageing population**. People are living longer on average, so a greater proportion of the population is older. This **demographic change** is likely to have big effects on society over time, affecting participation rates, tax collection, and government spending, particularly health and aged pensions

The **Organisation for Economic Co-operation and Development (OECD)** is a Paris-based think-tank whose members and funders are rich countries. It includes most

developed countries.

3.2 Macroeconomics

Many measures of economic activity – such as GDP, unemployment and interest rates -- move in cycles. During a boom, economic output increases, unemployment drops, and interest rates typically rise. Conversely, during busts, unemployment increases, interest rates fall, and GDP growth slows (or becomes negative). This is known as the **economic cycle**.

The **terms of trade** is the ratio of export prices to import prices for a country. Crudely, it measures the tonnes of coal Australia must export in order to import a plasma-screen TV. When terms of trade rise, Australia earns more plasma screen TVs per tonne of coal. If terms of trade fall, Australia would need to export more tonnes of coal to buy the same number of televisions.

From the mid-2000s, increased international demand for Australian minerals raised their price relative to other goods. Mining became very profitable. More mines were dug, increasing employment in the mining sector, as well as related industries (such as construction). Increasing demand for Australian minerals contributed to the rise in the value of the Australian dollar. These effects together are known as the **mining boom**.

The **global financial crisis (GFC)** is a common term for the financial crisis of 2007-08, which led to the 2008-12 global recession. Australia fared considerably better than most of the developed world during and after the crisis, but even so, economic growth slowed and government budgets were placed

under greater pressure than in earlier years.

3.3 Budgets

3.3.1 Revenue

Revenue is all money the government collects. It is made up of:

- Taxes, including:
 - **Income taxes** – taxes paid by individuals on their earnings
 - **Company tax** – taxes paid by companies on their profits. When firms purchase new equipment, they are not generally allowed to deduct the entire cost from their revenues all at once. Instead, they allocate a portion of the investment to each year of its useful life. For some types of asset, Australian tax rules allow **accelerated depreciation**: firms can claim a greater share of the initial investment cost each year than the usual portion. This means that firms claim the cost of the capital more quickly, and so the firm's cost of investing decreases. Because firms pay less tax while they are claiming this greater portion of costs, accelerated depreciation reduces government revenues in the short term.
 - **Sales taxes** – such as the Goods and Services Tax
 - **Excises** – sales taxes levied on a particular product, such as fuel, cigarettes, or alcohol.
 - **Customs duties** - taxes on imported items, including

- clothing and cars
- Other taxes, including **resource rent taxes** ('mining taxes') and **carbon pricing**.
- Sale of goods and services
- Income received from investments, such as dividends from government-owned companies, and interest.
- **Royalties** – In Australia, states own resources and mining companies purchase them. Royalty revenues are the sales of these minerals to mining companies. Royalties are generally levied either as a fixed rate per tonne, or as a percentage of the total value.
- Grants from other levels of government

3.3.2 Expenditure

Expenditure is all money the government spends. It includes:

- Payments to individuals, such as the Age Pension and unemployment benefits.¹⁴
- Transfers to other levels of government

¹⁴ These payments are sometimes called 'transfers' or 'welfare transfers'. This report uses 'transfers' to refer to payments by the Commonwealth to the states; welfare transfers are called 'payments' or 'benefits' to avoid confusion.

- Purchases of goods and services. This includes purchase of physical goods as needed, as well as the purchase of services from many different entities. For example, a government might purchase job retraining services from a private company or not-for-profit organisation rather than employ staff directly to deliver the training.
- Salaries and other expenses for employees, including front-line staff such as teachers and nurses as well as administrative staff.

3.4 Terms used in the budget papers

Commonwealth and State governments in Australia each publish a collection of documents every year in May or June that set out the government's economic and fiscal plans for the next year. These are generically called the **budget papers**.

Since economic conditions change through the year, governments also update their estimates of revenue and expenses late in the year. The Commonwealth update is called the **Mid-Year Economic and Fiscal Outlook (MYEFO)**. They also publish an updated set of figures before each election in the **Pre-election Fiscal Outlook (PEFO)**. State governments publish equivalent documents under different names.

Budget papers generally contain figures for revenue and expenditure for the previous financial year, the current financial year (sometimes called the **budget year**), and the next three financial years. This three-year period is called the **forward years** and the figures are known as the **forward estimates**.

Figures for the previous, current and next financial year are generally presented as **estimates**. Sometimes figures for the past year are presented as **actual** figures and the current year as **budgeted** figures. The figures for the final two years of the forward estimates are generally presented as **projections**.

Government expenses and revenues vary with the economic cycle. During a boom, profits and incomes increase, resulting in more taxes being paid; unemployment also falls, reducing expenses. During a bust, the opposite happens. The **cyclical balance** component of the budget is the proportion of revenues and expenses that occur due to the economic cycle. Once we subtract this from the cash balance, we arrive at the **structural balance**. Determining the cyclical balance depends on modelling assumptions about the relationship between the economic cycle, expenses, and revenues.

3.5 Surplus, deficits and debt

A **budget deficit** occurs when a government collects less in revenues than it spends in any given year. A **budget surplus** occurs when revenues are greater than expenditures in a year. **Government debt** is the total debt that a government owes, and may come from governments running deficits several years in a row. **Gross debt** is the total amount of debt the government has. **Net debt** is the gross debt minus the value of assets the government owns (such as the Future Fund).

3.6 Federal financial relations

In Australia, the Commonwealth government collects most of the taxes, while State governments deliver most of the services. To

correct this imbalance, sometimes known as **vertical fiscal imbalance**, the Commonwealth transfers money to the States in several ways:

- Some funding, such as the money collected via the GST, is given to States as **untied funding**. It can be spent however the State chooses.
- Most of the rest of the funding is given to the States as **tied funding**. This funding is given to the States on the condition that they use it for a particular purpose. There are two types of tied funding: **Specific Purpose Payments (SPPs)** are relatively large amounts of money to be spent in general areas, such as schools or housing. **National Partnership Payments (NPPs)** are smaller amounts of money more closely tied to a particular policy goal, such as improving literacy and numeracy, or mental health reform.
- A small amount is paid by the Commonwealth ‘through’ the states to other bodies, mostly non-government schools and local governments. States do not control how this money is spent; they just pass it on to the Commonwealth-identified recipient. These payments are sometimes known as **on-passings**.

In this report, we use the term ‘**transfers**’ to refer to untied and tied funding from the Commonwealth to the States. Where we present combined Commonwealth and state expenditures, these transfers are treated as state expenditure unless otherwise specified. On-passings are always treated as Commonwealth expenditure.

References

- Aaronson, D., Barrow, L. and Sander, W. (2007) 'Teachers and Student Achievement in the Chicago Public High Schools', *Journal of Labor Economics*, 25, p 95-135
- ABARES (2005) *Australian Mineral Statistics*, Australian Bureau of Agricultural and Resource Economics and Sciences, Australian Government, accessed October 2013, from http://www.daff.gov.au/abares/publications_remote_content/publication_series/australian_mineral_statistics
- ABARES (2007) *Australian Mineral Statistics*, Australian Bureau of Agricultural and Resource Economics and Sciences, Australian Government, accessed October 2013, from http://www.daff.gov.au/abares/publications_remote_content/publication_series/australian_mineral_statistics
- ABARES (2009) *Australian Mineral Statistics*, Australian Bureau of Agricultural and Resource Economics and Sciences, Australian Government, accessed October 2013, from http://www.daff.gov.au/abares/publications_remote_content/publication_series/australian_mineral_statistics
- ABARES (2011) *Australian Mineral Statistics*, Australian Bureau of Agricultural and Resource Economics and Sciences, Australian Government, accessed October 2013, from http://www.daff.gov.au/abares/publications_remote_content/publication_series/australian_mineral_statistics
- Abnert, T., Hughes, R. and Takahashi, K. (2011) 'United Kingdom: Four chancellors facing challenges', in *Chipping away at public debt: sources of failure and keys to success in fiscal adjustment*, P. Mauro, Ed. John Wiley & Sons, p 115-152
- ABS (2006a) *Census of Population and Housing*, Australian Bureau of Statistics
- ABS (2006b) *Household Expenditure Survey 2003-04*, catalogue number 6535.0.55.001, Australian Bureau of Statistics
- ABS (2008) *Australian Historical Population Statistics*, catalogue number 3105.0.65.001, Australian Bureau of Statistics
- ABS (2009) *National Health Survey*, catalogue number 4364.0, Australian Bureau of Statistics
- ABS (2011a) *Census of Population and Housing*, Australian Bureau of Statistics
- ABS (2011b) *Household Expenditure Survey*, catalogue number 6530.0, Australian Bureau of Statistics
- ABS (2011c) *Household Expenditure Survey 2009-10 CURF*, catalogue number 6503.0, Australian Bureau of Statistics
- ABS (2011d) *Retirement and Retirement Intentions*, catalogue number 6238.0, Australian Bureau of Statistics
- ABS (2012a) *Australian System of National Accounts, 2011-12*, catalogue number 5204.0, Australian Bureau of Statistics
- ABS (2012b) *Employment and Earnings, Public Sector, Australia, 2011-12*, catalogue number 6248.0.55.002, Australian Bureau of Statistics
- ABS (2012c) *Patient experiences in Australia: Summary of findings, 2011-12*, catalogue number 4839.0, Australian Bureau of Statistics
- ABS (2012d) *Year Book Australia*, catalogue number 1301.0, Australian Bureau of Statistics
- ABS (2013a) *Australian National Accounts: National Income, Expenditure and Product, Jun 2013*, catalogue number 5206.0, Australian Bureau of Statistics
- ABS (2013b) *Australian System of National Accounts, 2012-13*, catalogue number 5204.0, Australian Bureau of Statistics
- ABS (2013c) *Average Weekly Earnings, Australia, May 2013*, catalogue number 6302.0, Australian Bureau of Statistics
- ABS (2013d) *Balance of Payments and International Investment Position*, catalogue number 5302.0, Australian Bureau of Statistics
- ABS (2013e) *Construction work done, Australia*, catalogue number 8755.0, Australian Bureau of Statistics
- ABS (2013f) *Consumer Price Index*, catalogue number 6401.0, Australia Bureau of Statistics
- ABS (2013g) *Counts of Australian Businesses, including Entries and Exits, Jun 2008 to Jun 2012*, catalogue number 8165.0, Australian Bureau of Statistics
- ABS (2013h) *Energy Use, Electricity Generation and Environmental Management, Australia, 2011-12*, catalogue number 4660.0, Australian Bureau of Statistics
- ABS (2013i) *Engineering Construction Activity, Australia*, catalogue number 8762.0, Table 11, Australian Bureau of Statistics

- ABS (2013j) *House price indexes: Eight capital cities, Sep 2013*, catalogue number 6416.0, Australian Bureau of Statistics
- ABS (2013k) *Household Expenditure Survey 20011-12 CURF*, catalogue number 6503.0, Australian Bureau of Statistics
- ABS (2013l) *Household income and income distribution, CURF data*, catalogue number 6523.0, Australian Bureau of Statistics
- ABS (2013m) *Household Wealth and Wealth Distribution*, catalogue number 6554.0, Australian Bureau of Statistics
- ABS (2013n) *Input-Output Tables, 2009-10*, catalogue number 5209.0.55.001, Australian Bureau of Statistics
- ABS (2013o) *International trade in services by country, by state and by detailed services category, calendar year, 2012*, catalogue number 5368.0.55.004, Australian Bureau of Statistics
- ABS (2013p) *Labour Force, Australia*, catalogue number 6202.0, Australian Bureau of Statistics
- ABS (2013q) *Producer Price Indexes, Australia, Jun 2013*, catalogue number 6427.0, Australian Bureau of Statistics
- ABS (2013r) *Schools, Australia*, catalogue number 4221.0, Australian Bureau of Statistics
- ABS (2013s) *Taxation Revenue, Australia, 2011-12*, catalogue number 5506.0, Australian Bureau of Statistics
- Access Economics (2002) *Striking a balance: choice access and affordability in Australian health care*, APHA
- AIHW (2012) *Health expenditure Australia 2010-11*, Catalog number HWE56, Australian Institute of Health and Welfare
- AIHW (2013) *Health expenditure Australia 2011-12*, Australian Institute of Health and Welfare, Cat. no. HWE 59, accessed 13 November 2013, from <http://www.aihw.gov.au/publication-detail?id=60129544658>
- Albalade and Bel (2009) 'What local policy makers should know about urban road charging: lessons from worldwide experience', *Public Administration Review*, 69(5), p 962-974
- APRA (2013a) *Annual Superannuation Bulletin*, Australian Prudential Regulation Authority, accessed 15 November, 2013, from <http://www.apra.gov.au/Super/Publications/Pages/annual-superannuation-publication.aspx>
- APRA (2013b) 'Superannuation Fund-Level Publications', from <http://www.apra.gov.au/super/publications/pages/superannuation-fund-level-publications.aspx>
- ASIC (2013) *Retirement income & tax*, Australian Securities and Investments Commission from <https://www.moneysmart.gov.au/superannuation-and-retirement/income-sources-in-retirement/income-from-super/retirement-income-and-tax>
- ATO (2013a) *Capital Gains Tax*, accessed 30 October 2013, from <http://www.ato.gov.au/General/Capital-gains-tax/>
- ATO (2013b) 'Concessional Contributions Cap', from http://www.ato.gov.au/Rates/Key-superannuation-rates-and-thresholds/?page=2#Concessional_contributions_cap
- ATO (2013c) *Excise Tariff Working Pages - Schedule (1 August 2013)*, Australian Tax Office, Australian Government, accessed October 2013, from <http://law.ato.gov.au/atolaw/view.htm?Docid=PAC/BL030002/1&PiT=99991231235958>
- ATO (2013d) *Fuel tax credits and eligible fuels*, Australian Tax Office, Australian Government, accessed October 2013, from <http://www.ato.gov.au/Business/Fuel-schemes/In-detail/Fuel-tax-credits---for-GST-registered-businesses/Calculating-and-record-keeping/Fuel-tax-credit-rates-and-eligible-fuels/>
- ATO (2013e) *HELP repayment thresholds and rates*, Australian Tax Office, Australian Government, accessed September 2013, from <http://www.ato.gov.au/Rates/HELP-repayment-thresholds-and-rates/>
- ATO (2013f) *Individual sample file*, Australian Taxation Office
- ATO (2013g) 'Preservation Age', from <http://ato.gov.au/Super/Self-managed-super-funds/Assessing-your-super/Preservation-age/>
- ATO (2013h) *Self-managed super fund statistical report - March 2013*, accessed 15 November, 2013, from <http://www.ato.gov.au/About-ATO/Research-and-statistics/In-detail/Super-statistics/SMSF/Self-managed-super-fund-statistical-report--March-2013/?anchor=smsfannualdata#smsfannualdata#smsfannualdata>
- ATO (2013i) *Taxation Statistics 2010-11*, Australian Taxation Office, Australian Government, accessed 4 September 2013, from www.ato.gov.au/About-ATO/Research-and-statistics/In-detail/Tax-statistics/Taxation-statistics-2010-11/

- ATO (multiple years) *Taxation Statistics*, Australian Taxation Office, Australian Government, accessed 4 September 2013, from [http://www.ato.gov.au/About-ATO/Research-and-statistics/In-detail/Tax-statistics/Taxation-statistics-2010-11/?default=&page=53#Previous editions of Taxation statistics](http://www.ato.gov.au/About-ATO/Research-and-statistics/In-detail/Tax-statistics/Taxation-statistics-2010-11/?default=&page=53#Previous%20editions%20of%20Taxation%20statistics)
- Bartlett, B. (2012) *The benefit and the burden: tax reform - why we need it and what it will take*, Simon & Schuster
- BCA (2013) *Securing investment in Australia's future: Managing the economic transition*, Business Council of Australia, accessed October 2013, from <http://www.bca.com.au/DisplayFile.aspx?FileID=1039>
- Beer, A. (2008) 'Risk and return: housing tenure and labour market adjustment after employment loss in the automotive sector in South Adelaide', *Policy Studies*, 29(3), p 319
- Bernie, K. and Downes, P. (1999) *The Macroeconomics of Unemployment in the Treasury Macroeconomic (TRYM) Model*, TYRM Related Paper No. 20, Modelling Section, Macroeconomic Analysis Branch, The Treasury, Australian Government, accessed August 2013,
- BITRE (2001) *Elasticities Database*, Bureau of Transport, Infrastructure and Resource Economics, Australian Government, accessed October 2013, from <http://www.bitre.gov.au/tedb/pdf/table1D11.pdf>
- Blanchflower, D. and Oswald, A. (2013) *Does high home-ownership impair the labor market*, NBER Working papers: 19079
- Bourassa, S., Haurin, D., Hendershott, P. and Hoesli, M. (2012) *Mortgage interest deductions and homeownership: an international survey*, *Research Paper Series No 12-06*, Swiss Finance Institute, accessed 8 November 2013, from <http://ssrn.com/abstract=2002865>
- Bourgon, J. (2009) *Program Review: the Government of Canada's experience eliminating the deficit, 1994-99: a Canadian case study*, Institute for Government, accessed 30 June 2013, from <http://www.cigionline.org/publications/2009/9/prorgram-review-government-canadas-experience-eliminating-deficit-1994-99-canadi>
- BREE (2013) *Resources and Energy Quarterly*, Bureau of Resources and Energy Economics, Australian Government, accessed October 2013, from <http://www.bree.gov.au/publications/req.html>
- Brown, J. and Medcalf, R. (2013) *Fixing Australia's incredible defence policy*, Lowy Institute for International Policy, accessed October 2013, from http://lowyinstitute.org/files/brown_and_medcalf_fixing_australias_incredible_defence_policy_web.pdf
- Brown, P., Ferguson, A. and Sherry, S. (2010) 'Investor behaviour in response to Australia's capital gains tax', *Accounting and Finance*, 50(2010), p 783-808
- Burman, L. (2009) 'Taxing Capital Gains in Australia: Assessment and Recommendations', in *Australian Business Tax Reform in Retrospect and Prospect*, C. Evans and R. Krever, Eds., Thomson Reuters, Sydney
- Caravel (2013) *A review of project governance effectiveness in Australia*, Commissioned by Infrastructure Australia, Caravel, accessed October 2013, from http://www.infrastructureaustralia.gov.au/publications/files/CARAVEL_GROUP_Project_Governance_Effectiveness_March_2013.pdf
- Cardak, B. and Ryan, C. (2006) *Why are high ability individuals from poor backgrounds under-represented at university?*, Working Papers 2006.4, School of Economics, La Trobe University, accessed September 2013, from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=914025
- Carne, K. (2007) *Determinants of labour demand: the Australian experience*, Queensland Department of Education, Training and the Arts, accessed August 2013, from <http://training.qld.gov.au/resources/employers/pdf/wp49-determinants-labour-demand.pdf>
- Cheng, T. (2013) *Does Reducing Rebates for Private Health Insurance Generate Cost Savings?*, Melbourne Institute Policy Briefs Series, Policy Brief No. 3/13, accessed 20 November 2013, from http://melbourneinstitute.com/downloads/policy_briefs_series/pb2013n03.pdf
- Chingos, M. M. (2011) *The Impact of a Universal Class-Size Reduction Policy: Evidence from Florida's Statewide Mandate*, Program on Education Policy and Governance Working Paper Series, Harvard Kennedy School, accessed 8 October 2013, from www.hks.harvard.edu/pepg/PDF/Papers/PEPG10-03_Chingos.pdf
- Costello, P. (2006) *Simplified Superannuation - Final Decisions*, Treasury, accessed 13 November, 2013, from <http://ministers.treasury.gov.au/DisplayDocs.aspx?doc=pressreleases/2006/093.htm&pageID=003&min=phc&Year=2006&DocType=0>
- Credit Suisse (2013) *Iron Ore Cost Curves*, Credit Suisse Securities Research and Analytics

- Daley, J. and Lancy, A. (2011) *Investing in regions: Making a difference*, Grattan Institute
- Daley, J., McGannon, C. and Ginnivan, L. (2012a) *Game-changers: Economic reform priorities for Australia*, Grattan Institute, accessed 2 October 2013, from <http://grattan.edu.au/publications/reports/post/game-changers-economic-reform-priorities-for-australia/>
- Daley, J., McGannon, C. and Ginnivan, L. (2012b) *Game-changers: Economic reform priorities for Australia - supporting analysis*, Grattan Institute, accessed October 2013, from <http://grattan.edu.au/publications/reports/post/game-changers-supporting-materials/>
- Daley, J., McGannon, C. and Savage, J. (2013) *Budget pressures on Australian governments*, Grattan Institute, accessed October 2013, from <http://grattan.edu.au/publications/reports/post/budget-pressure-on-australian-governments/>
- Davidson, P. (2000) 'Tax reform: a retrospective', *UNSW Law Journal*, 23(2), p 264-274
- Davidson, S. (2010) 'The RSPT is a Brown Tax', accessed September 2013, from <http://catallaxyfiles.com/2010/05/13/the-rspt-is-a-brown-tax/>
- Davies, A. (2008) *Pay Your Money and Take Your Pick: Defence Spending Choices for Australia*, Australian Strategic Policy Institute, accessed August 2013, from http://www.aspi.org.au/publications/publication_details.aspx?ContentID=33
- Davies, A. (2012a) 'Why do subways cost so much more here than elsewhere?', accessed September 2013, from <http://blogs.crikey.com.au/theurbanist/2012/02/15/why-do-subways-cost-so-much-to-build-here-than-elsewhere/>
- Davies, A. (2012b) 'Why is infrastructure so bloody expensive?', accessed September 2013, from <http://blogs.crikey.com.au/theurbanist/2012/02/16/why-is-infrastructure-so-bloody-expensive/>
- Davies, A. (2013a) 'Are cost estimates for transport projects reliable?', accessed September 2013, from <http://blogs.crikey.com.au/theurbanist/2013/09/17/are-cost-estimates-for-transport-projects-reliable/>
- Davies, A. (2013a) 'Cutting our cloth - part II', accessed 1 October 2013, from <http://www.aspistrategist.org.au/cutting-our-cloth-part-ii/>
- Davies, A. (2013b) 'Cutting our cloth - part III: a force structure for straitened times', accessed 1 October 2013, from <http://www.aspistrategist.org.au/cutting-our-cloth-part-iii-a-force-structure-for-straitened-times/>
- Davies, A. (2013b) 'If WA can build rail lines cheaply, why can't the other states?', accessed September 2013, from <http://blogs.crikey.com.au/theurbanist/2013/03/15/if-wa-can-build-rail-lines-cheaply-why-cant-the-other-states/>
- Davies, A. (2013c) 'Infrastructure: what to do about the 'Cleopatra Problem'?', accessed September 2013, from <http://blogs.crikey.com.au/theurbanist/2013/08/01/infrastructure-what-to-do-about-the-cleopatra-problem/>
- Davies, A. (2013d) 'Is more transport infrastructure all our cities need?', accessed 17 November 2013, from <http://blogs.crikey.com.au/theurbanist/2013/11/12/is-more-transport-infrastructure-all-our-cities-need>
- Debelle, G. and Vickery, J. (1998) 'The Macroeconomics of Australian Unemployment', in *Unemployment and the Australian Labour Market*, G. Debelle and J. Borland, Eds., Reserve Bank of Australia and the Centre for Economic Policy Research, ANU, p 235-265
- DEEWR (2012) *Review of Funding for Schooling - Final Report*, Department of Education, Employment and Workplace Relations, Australian Government
- Defence (2009) *Defending Australia in the Asia-Pacific Century: Force 2030*, Defence White Paper 2009, Department of Defence, Australian Government, accessed August 2013, from <http://www.defence.gov.au/whitepaper2009/>
- Defence (2013) *Defence White Paper 2013*, Department of Defence, Australian Government, accessed August 2013, from <http://www.defence.gov.au/whitepaper2013/>
- Deloitte Access Economics (2011) *The impacts of changes to student contribution levels and repayment thresholds on the demand for higher education*, Report for the Department of Education, Employment and Workplace Relations, Australian Government, accessed 30 October 2013, from <http://www.deewr.gov.au/HigherEducation/Policy/BaseReview/Documents/HEstudentdemandreport.pdf>

- Department of Health UK (2010) *Achieving World Class Productivity in the NHS 2009-10 – 2013-14: Detailing the Size of the Opportunity*, McKinsey&Co, accessed 20 November 2013, from <http://www.rightcare.nhs.uk/index.php/2010/07/achieving-world-class-productivity-in-the-nhs-200910-201314-detailing-the-size-of-the-opportunity/>
- Deutsche Bank (2013) *Commodities Weekly, 16 September 2013*, Deutsche Bank Markets Research
- DHS (2013a) 'Age Pension', accessed 31 October 2013, from <http://www.humanservices.gov.au/customer/services/centrelink/age-pension>
- DHS (2013b) 'Income test for Family Tax Benefit Part A', accessed October 2013, from <http://www.humanservices.gov.au/customer/enablers/centrelink/family-tax-benefit-part-a-part-b/ftb-a-income-test>
- Diamond, P. (2009) *Taxes and Pensions*, Centre for Retirement Research at Boston College Working Papers from http://crr.bc.edu/wp-content/uploads/2009/05/wp_2009-12-508.pdf
- DIICCSRTE (2013) *Portfolio Budget Statements 2013-14*, Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education, Australian Government, accessed 20 October 2013, from <http://www.innovation.gov.au/AboutUs/Budget/Documents/PortfolioBudgetStatementsDIICCSRTE2013-14.pdf>
- Dixon, R., Freebairn, J. and Lim, G. C. (2004) *An employment equation for Australia: 1966-2001*, Department of Economics Working Papers Series 892, University of Melbourne Faculty of Business and Economics, accessed August 2013,
- Djankov, S., Ganser, T., McLiesh, C., Ramalho, R. and Shleifer, A. (2010) 'The Effect of Corporate Taxes on Investment and Entrepreneurship', *American Economic Journal: Macroeconomics*, 2(July 2010), p 31-64
- DMO (2013) *Future Submarine Industry Skills Plan*, Defence Materiel Organisation, Australian Government, accessed 24 October 2013, from <http://www.defence.gov.au/dmo/id/fsisp/FSISPWEB.pdf>
- Dobes, L. (2008) *A century of Australian cost-benefit analysis*, Working papers in cost-benefit analysis. WP 2008-01, Office of Best Practice Regulation, Department of Finance and Deregulation, Australian Government, accessed 18 November 2013, from www.finance.gov.au/obpr/docs/Working-paper-1-Leo-Dobes.pdf
- DoH (2013) 'Comprehensive Mangement Framework for the MBS', accessed 20 November 2013, from http://www.health.gov.au/internet/main/publishing.nsf/Content/New_MB_S_Items
- DoHA (2012) *Expenditure and prescriptions 12 months to 30 June 2012*, Pharmaceutical Benefits Scheme, Department of Health and Ageing, Australian Government, accessed 17 October 2013, from <http://www.pbs.gov.au/statistics/2011-2012-files/expenditure-and-prescriptions-2011-2012.pdf>
- Dol (2013a) *Allocation of units of study to funding clusters and student contribution bands according to field of education codes 2013*, Department of Industry, Australian Government, accessed 25 October 2013, from http://www.innovation.gov.au/highereducation/ResourcesAndPublications/Resources/Documents/Allocation_units_study2013.pdf
- Dol (2013b) *State/territory resource rent charges*, Department of Industry, Australian Government, accessed 30 October 2013, from http://www.ret.gov.au/resources/enhancing/taxation/govt_responsibilities/st-rent/Pages/StateTerritoryResourceRentCharges.aspx
- DTF NT (2012) *Territory Budget Papers 2012-13*, Department of Treasury and Finance, Northern Territory Government
- DTF NT (2013) *Territory Budget Papers 2013-14*, Department of Treasury and Finance, Northern Territory Government
- DTF SA (2012) *State Budget Papers 2012-13*, Department of Treasury and Finance, Government of South Australia
- DTF SA (2013) *State Budget Papers 2013-14*, Department of Treasury and Finance, Government of South Australia
- DTF Tasmania (2012) *State Budget Papers 2012-13*, Department of Treasury and Finance, Tasmanian Government
- DTF Tasmania (2013) *State Budget Papers 2013-14*, Department of Treasury and Finance, Tasmanian Government
- DTF Victoria (2012) *State Budget Papers 2012-13*, Department of Treasury and Finance, Government of Victoria
- DTF Victoria (2013) *State Budget Papers 2013-14*, Department of Treasury and Finance, Government of Victoria

- DTIRE NSW (2013) *NSW Minerals and Petroleum*, Department of Trade and Investment, Resources and Energy, New South Wales Government, accessed 30 October 2013, from <http://www.resources.nsw.gov.au/resources/royalty>
- DTRS (2006) *Fuel tax credit rates and eligible fuels*, Department of Transport and Regional Services, Australian Government, accessed 31 October 2013, from <http://www.ato.gov.au/Business/Fuel-schemes/In-detail/Fuel-tax-credits---for-GST-registered-businesses/Calculating-and-record-keeping/Fuel-tax-credit-rates-and-eligible-fuels/>
- Duckett, S., Breadon, P., Ginnivan, L. and Venkataraman, P. (2013) *Australia's bad drug deal: high pharmaceutical prices*, Grattan Institute
- Duckett, S., Breadon, P., Weidmann, B. and Nicola, I. (forthcoming) *Costly Care*, Grattan Institute
- Duckett, S. and Willcox, S. (2011) *The Australian Health Care System, 4th edition*, Oxford University Press
- Dungey, M. and Pitchford, J. (1998) *Prospects for Output and Employment Growth with Steady Inflation*, Centre for Economic Policy Research Discussion Paper 387, Australian National University Research School of Economics, accessed August 2013,
- Eddington, R. (2006) *The case for action: Sir Rod Eddington's advice to Government*, The Eddington Transport Study, accessed October 2013, from <http://collections.europarchive.org/tna/20100408160254/http://www.dft.gov.uk/about/strategy/transportstrategy/eddingonstudy/>
- Elshaug, A., Watt, A., Mundy, L. and Willis, C. (2012) 'Over 150 potentially low-value health care practices: an Australian Study', *Medical Journal of Australia*, 2012(197), p 556-560
- Ergas, H. and Robson, A. (2010) 'The social losses from inefficient infrastructure projects: Recent Australian experience', Strengthening evidence-based policy in the Australian federation, Canberra, accessed 15 November 2013, from http://www.pc.gov.au/_data/assets/pdf_file/0020/96203/roundtable-proceedings-volume1.pdf
- Eslake, S. (2010) 'Infrastructure investment and productivity', Address to the Economic Society's Annual Tasmanian Economic Forum 3 December 2010, accessed October 2013, from http://grattan.edu.au/static/files/assets/0ed085c4/061_eslake_tasecoforum.pdf
- Eslake, S. (2011) 'Australia's tax reform challenge', Australian Parliamentary Library Lecture, 21 September 2011, accessed October 2013, from http://grattan.edu.au/static/files/assets/ce5572a5/111_eslake_tax_reform_parl_library.pdf
- Eslake, S. (2013) 'Australian Housing Policy: 50 years of failure. Address to the 122nd Annual Henry George Commemorative Dinner, The Royal Society of Victoria, Melbourne', 2 September 2013, accessed via author,
- Even, W. E. and Macpherson, D. A. (2012) 'Is bigger still better? The decline of the wage premium at large firms', *Southern Economic Journal*, 78(4), p 1181-1201
- Falsetta, D., Rupert, T. and Wright, A. (2013) 'The Effect of the Timing and Direction of Capital Gain Tax Changes on Investment in Risky Assets', *The Accounting Review*, 88(2), p 499-420
- Flatau, P., Hendershott, P., Watson, R. and Wood, G. (2004) *What drives Australian housing careers? An examination of the role of labour market, social and economic determinants*, Australian Housing and Urban Research Institute, accessed 1 November 2013, from www.ahuri.edu.au/publications/download/ahuri_80151_fr
- Flyvbjerg, B. (2009) 'Survival of the unfittest: why the worst infrastructure gets built - and what we can do about it', *Oxford Review of Economic Policy*, 25(3), p 344-367
- Freebairn, J. (2013) 'A larger GST in a tax-mix change', *Insights: Melbourne Business and Economics* 13(April), p 39-43
- Fuel Watch WA (2013) 'Petrol Prices - Perth Metropolitan', accessed 30 October 2013, from <http://www.fuelwatch.wa.gov.au/fuelwatch/pages/public/historicalPricesSearch.jsp>
- Gabbitas, O. and Eldridge, D. (1998) *Directions for State Tax Reform*, Staff research paper, Productivity Commission, accessed August 2013, from http://www.pc.gov.au/_data/assets/pdf_file/0003/7725/statetax.pdf
- Glaeser, J. and Shapiro, J. (2003) *The Benefits of the Home Mortgage Interest Deduction*, National Bureau of Economic Research, accessed 12 November 2013, from <http://www.nber.org/chapters/c11534>
- Goldman Sachs (2013) *Iron age continues until structural oversupply in 2014*, Goldman Sachs Commodities Research
- Hanushek, E. A. (2003) 'The failure of input-based schooling policies', *Economic Journal*, 113(February 2003), p F64-F98

- Hanushek, E. A., Kain, J. F., O'Brien, D. M. and Rivkin, S. G. (1998) *Teachers, schools and academic achievement*, NBER Working Paper Series Working Paper 6691, The National Bureau of Economic Research, accessed 8 October 2013, from www.nber.org/papers/w6691.pdf
- Hattie, J. (2005) 'The paradox of reducing class size and improving learning outcomes', *International Journal of Educational Research*, 43(2005), p 387-425
- Hensher, D. A. and Mulley, C. (2013) 'Complementing distance based charges with discounted registration fees in the reform of road user charges: the impact for motorists and government revenue', *Transportation*, April 2013,
- Hensher, D. A., Rose, J. M. and Collins, A. T. (2013) 'Understanding Buy-in for Risky Prospects: Incorporating Degree of Belief into the ex-ante Assessment of Support for Alternative Road Pricing Schemes', *Journal of Transport Economics and Policy*, 47(3), p 453-473
- HILDA (2012) *Survey of Household Income and Labour Dynamics Australia*, Melbourne Institute
- HM Treasury (2009) *International examples of spending consolidations*, HM Treasury, UK Government, accessed 28 October 2013, from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/220923/foi_fiscal_consolidation_010210.pdf
- Hockey, J. and Cormann, M. (2013) 'Coalition commences National Commission of Audit', Australian Government, 22 October 2013, accessed October 2013, from <http://jbh.ministers.treasury.gov.au/media-release/009-2013/>
- Horin, A. (2010) 'Raising pension age 'will not work'', *Sydney Morning Herald*, from <http://www.smh.com.au/national/raising-pension-age-will-not-work-20100818-12f8j.html>
- Horne, N. (2012) *The Commonwealth efficiency dividend: an overview*, Parliamentary Library of Australia, accessed August 2013, from http://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/BN/2012-2013/EfficiencyDividend
- Hoxby, C. M. (2000) 'The Effects of Class Size on Student Achievement: New Evidence from Population Variation', *Quarterly Journal of Economics*, 115(4), p 1239-1285
- Hutchings, R. and Kouparitsas, M. (2012) *Modelling Aggregate Labour Demand*, Treasury Working Paper 2012-02, The Treasury, Australian Government, accessed August 2013, from http://www.treasury.gov.au/~media/Treasury/Publications%20and%20Media/Publications/2012/Modelling%20Aggregate%20Labour%20Demand/Downloads/PDF/Labour_Demand_Model_WP.ashx
- IHPA (2013) *National Hospital Cost Data Collection*, Independent Hospital Pricing Authority
- IndexMundi (2013) *Coal, Australian thermal coal monthly price - US dollars per metric ton*, from <http://www.indexmundi.com/commodities/Default.aspx?commodity=coal-australian&months=300>
- Infrastructure Australia (2013) *National Infrastructure Plan, June 2013*, Infrastructure Australia, Australian Government, accessed October 2013, from http://www.infrastructureaustralia.gov.au/coag/files/2013/2013_IA_COAG_Report_National_Infrastructure_Plan_LR.pdf
- Jensen, B., Hunter, A., Sonnemann, J. and Burns, T. (2012) *Catching up: learning from the best school systems in East Asia*, Grattan Institute, accessed 10 August 2013, from http://grattan.edu.au/static/files/assets/69a59c9a/129_report_learning_from_the_best_main.pdf
- Jensen, B., Reichl, J. and Kemp, A. (2011) 'The Real Issue in School Funding: An Analysis of Increasing Government School Expenditure and Declining Performance', *The Australian Economic Review*, 44(33), p 321-329
- Jones, K. and Prasser, S. (forthcoming) *Audit Commissions: Reviewing the reviewers*, Connor Court
- Kamener, L. and Tan, S.-I. (2012) *Strategies for taming government deficits*, BCG Perspectives, Boston Consulting Group, accessed 28 October 2013, from <http://www.bcg.com/documents/file119676.pdf>
- Karanassou, M. and Sala, H. (2008) *Labour Market Dynamics in Australia: What drives unemployment?*, School of Economics Discussion Paper: 2008/26, UNSW: Australian School of Business, accessed August 2013, from http://www.docs.fce.unsw.edu.au/economics/Research/WorkingPapers/2008_26.pdf

- Karvelas, P. (2013) 'Family tax ripe for budget axe, NATSEM modelling finds', *The Australian*, 28 February 2013, accessed August 2013, from <http://www.theaustralian.com.au/national-affairs/policy/family-tax-ripe-for-budget-axe-natsem-modelling-finds/story-fn59nsif-1226587257174>
- Kelly, J.-F., Harrison, C., Hunter, J. and Donegan, P. (2013) *Renovating Housing Policy*, Grattan Institute
- Kelly, J.-F., Mares, P., Harrison, C., O'Toole, M., Oberklaid, M. and Hunter, J. (2013) *Productive cities: opportunity in a changing economy*, Grattan Institute, accessed October 2013, from http://grattan.edu.au/static/files/assets/c422f26b/188_productive_cities.pdf
- Kerin, J. (2013) 'Spending boost paves way for fourth Navy destroyer', *Australian Financial Review*, 15 October 2013, accessed 24 October 2013, from http://www.afr.com/p/national/spending_boost_paves_way_for_fourth_AAQdkOcqu05gQuHfQxaiVP
- KPMG Econtech (2010) *CGE Analysis of the Current Australian Tax System*, from http://www.taxreview.treasury.gov.au/content/Content.aspx?doc=html/commissioned_work.htm
- Krueger, A. B. (1999) 'Experimental Estimates of Education Production Functions', *Quarterly Journal of Economics*, 114(2), p 497-532
- Leigh, A. and Ryan, C. (2001) 'Long-run trends in school productivity: Evidence from Australia', *Education Finance and Policy*, 6(1), p 105-135
- Levinson, D. (2012) 'Why transportation costs too much, 39 hypotheses and counting', accessed September 2013, from http://transportationist.org/2012/02/23/why_transportation_costs_too_much/
- Lewis, D. (2012) 'Talking dollars and strategy: the challenging link in defence planning', Speech by the Secretary of Defence to the Australian Strategic Policy Institute Annual Dinner, 23 August 2012, accessed October 2013, from <http://www.aspi.org.au/admin/eventFiles/Secretary%20of%20Defence%20ASPI%20speech.pdf>
- Lewis, P. E. T. and MacDonald, G. (2002) 'The Elasticity of Demand for Labour in Australia', *The Economic Record*, 78(1), p 18-30
- Light, D. W. and Lexchin, J. (2005) 'Foreign Free Riders and the high price of US medicines', *British Medical Journal*, 331(7522), p 958-960
- Lignier, P. and Evans, C. (2012) 'The rise and rise of tax compliance costs for the small business sector in Australia', *Australian Tax Forum*, 27(3), p 615-672
- Ludlow, M. (2013) 'Infrastructure 'gold plating is blowing out costs: Qld'', *Australian Financial Review*, 2 October 2013, accessed October 2013, from http://www.afr.com/p/national/infrastructure_gold_plating_is_blowing_out_costs
- Martin, P. (2013) 'Here's a back-up if Hockey's audit is too rushed', *Sydney Morning Herald*, 26 October 2013, accessed 31 October 2013, from <http://www.smh.com.au/business/heres-a-backup-if-hockeys-audit-is-too-rushed-20131025-2w78k.html>
- Mishel, L. and Rothstein, R. (2002) *The Class Size Debate*, Economic Policy Institute, Washington
- Moorin, R. and Holman, C. (2006a) 'Does federal health care policy influence switching between the public and private sectors in individuals?', *Health Policy*, 79(2006), p 284-295
- Moorin, R. and Holman, C. (2006b) 'The influence of federal health care policy reforms on the use of private health insurance in disadvantaged groups', *Australian Health Review*, 30(2), p 241-251
- NICE (2013) 'Cost saving guidance', accessed 23 October 2013, from <http://www.nice.org.uk/usingguidance/benefitsimplementation/costsavingsguidance.jsp>
- Norton, A. (2012) *Graduate winners: Assessing the public and private benefits of higher education*, Grattan Institute, accessed 17 August 2013, from http://grattan.edu.au/static/files/assets/4c182f07/162_graduate_winners_report.pdf
- NSW Treasury (2011) *NSW Government Submission to the 2011 Tax Forum*, NSW Treasury
- Nye, B., Konstantopoulos, S. and Hedges, L. V. (2004) 'How large are teacher effects?', *Educational Evaluation and Policy Analysis*, 23(3), p 237-257
- OECD (2006) *Taxation of Capital Gains of Individuals: Policy Considerations and Approaches*, OECD Tax Policy Studies, No. 14, OECD

- OECD (2010) *Programme for International Student Assessment, Volume 1: What Students Know and Can Do: Student Performance in Reading, Mathematics and Science*, from <http://www.oecd.org/pisa/pisaproducts/pisa2009/pisa2009resultswhatstudentsknowandcandostudentperformanceinreadingmathematicsandsciencevolume1.htm>
- OECD (2013a) *Education at a Glance: OECD Indicators*, OECD from <http://www.oecd.org/edu/eag.htm>
- OECD (2013b) 'Productivity by enterprise size class', in *Entrepreneurship at a glance 2013*, OECD, Ed. OECD Publishing
- Office of State Revenue Queensland (2013) *Revenue Statistics*, Office of State Revenue, Queensland Government, accessed 30 October 2013, from <https://www.osr.qld.gov.au/royalties/statistics.shtml>
- Palmer, J. (2010) *The acceptability of road pricing: an application of a theoretical and analytical framework to the realities of decision making in Sydney*, Research report ITLS-RR-10-2, Institute of Transport and Logistics Studies, University of Sydney, accessed 20 November 2013, from http://sydney.edu.au/business/_data/assets/pdf_file/0006/94461/ITLS-RR-10-02.pdf
- PHARMAC (2012) *Introduction to PHARMAC*, Government of New Zealand, accessed 23 January 2013, from <http://www.pharmac.govt.nz/2011/09/16/01INTRO.pdf>
- PHIAC (2013a) *The operations of private health insurers: Annual report 2011-2012*, Private Health Insurance Administration Council, accessed 22 November 2013, from <http://phiac.gov.au/wp-content/uploads/2013/02/Annual-Report-on-Operations-2011-12-web-version.pdf>
- PHIAC (2013b) *Private Health Insurance Australia Quarterly Statistics March 2013*, Private Health Insurance Administration Council, accessed 12 November 2013, from <http://phiac.gov.au/industry/industry-statistics/statistical-trends/>
- Productivity Commission (2005) *Economic Implications of an Ageing Australia*, Productivity Commission, accessed 21 August 2013, from http://www.pc.gov.au/_data/assets/pdf_file/0020/69401/ageing.pdf
- Productivity Commission (2007) *Potential Benefits of the National Reform Agenda*,
- Productivity Commission (2012) *Trade and Assistance Review 2010-11*, Productivity Commission, accessed August 2013, from <http://www.pc.gov.au/annual-reports/trade-assistance/trade-assistance-review-2010-11>
- Productivity Commission (2013a) *Major Project Development Assessment Processes: Draft Report*, Productivity Commission, accessed October 2013, from <http://www.pc.gov.au/projects/study/major-projects/draft>
- Productivity Commission (2013b) *Trade and Assistance Review 2011-12*, Productivity Commission, accessed August 2013, from <http://www.pc.gov.au/annual-reports/trade-assistance/2011-12>
- Productivity Commission (multiple years) *Report on Government Services*, Productivity Commission, accessed 28 October 2013, from <http://www.pc.gov.au/gsp/rogs>
- PwC (2013) *Protecting prosperity: Why we need to talk about tax*, PwC, accessed 2 October 2013, from <http://www.pwc.com.au/tax/assets/Protecting-prosperity-22Jul13.pdf>
- Rawdanowicz, Ł., Wurzel, E. and Christensen, A. K. (2013) *The equity implications of fiscal consolidation*, OECD Economics Department Working Papers no 1013, OECD Publishing, accessed 15 November 2013, from <http://dx.doi.org/10.1787/5k4dlvx2wig0-en>
- RBA (2013a) *Indicator Lending Rates*, Statistics Table F5, Reserve Bank of Australia
- RBA (2013b) *Lending and Credit Aggregates*, Statistics Table D2, Reserve Bank of Australia
- RBA (2013c) *Lending Commitments - All Lenders*, Statistics Table D6, Reserve Bank of Australia
- Robson, A. and Paolucci, F. (2012) 'Private Health Insurance Incentives in Australia: The Effects of Recent Changes to Price Carrots and Income Sticks', *The Geneva Papers*, 2012(37), p 725-744
- Rockoff, J. E. (2004) 'The Impact of Individual Teachers on Student Achievement: Evidence from Panel Data', *American Economic Review*, 94, p 247-252
- Saez, E., Slemrod, J. and Giertz, S. (2012) 'The Elasticity of Taxable Income with Respect to Marginal Tax Rates: A Critical Review', *Journal of Economic Literature*, 50(1), p 3-50
- Sancak, C., Liu, L. Q. and Nakata, T. (2011) 'Canada: a success story', in *Chipping away at public debt: sources of failure and keys to success in fiscal adjustment*, P. Mauro, Ed. John Wiley & Sons, p 1-30

- Savage, J. and Norton, A. (2012) *Non-financial benefits of higher education*, Grattan Institute from http://grattan.edu.au/static/files/assets/0b7377cf/164_graduate_winners_non-financial_benefits.pdf
- Seah, D., Cheong, T. and Anstey, M. (2013) 'The hidden cost of private health insurance in Australia', *Australian Health Review*, 2013(37), p 1-3
- Segal, L. (2004) 'Why it is time to review the role of private health insurance', *Australian Health Review*, 27(1), p 3-15
- Siriwardana, M., Meng, S. and McNeill, J. (2011) *The impact of a carbon tax on the Australian economy: results from a CGE model*, University of New England
- Stacey, G. and Downes, P. (1995) *Wage determination and the labour market in the Treasury Macroeconomic (TRYM) Model*, Modelling Section, Macroeconomic Analysis Branch, The Treasury, Australian Government, accessed August 2013, from <http://epsa.treasury.gov.au/documents/239/PDF/paper13.pdf>
- Stern, T. (2007) 'Fuel taxes: An important instrument for climate policy', *Energy Policy*, 35(6), p 3194-3202
- Swan, W. and Rudd, K. (2010) 'Stronger, fairer, simpler: a tax plan for our future', Australian Government, 2 May 2010, accessed October 2013, from <http://ministers.treasury.gov.au/DisplayDocs.aspx?doc=pressreleases/2010/028.htm&pageID=003&min=wms&Year>
- Taylor, C., Bradley, C., Dobbs, R., Thompson, F. and Clifton, D. (2012) *Beyond the boom: Australia's productivity imperative*, McKinsey Global Institute, accessed October 2013, from http://www.mckinsey.com/insights/asia-pacific/australia_productivity_imperative
- Thomson, M. (2012) *How much is too little? Learning to live with a smaller force*, Australian Strategic Policy Institute, accessed August 2013, from http://www.aspi.org.au/publications/publication_details.aspx?ContentID=344
- Thomson, M. (2013) *The Cost of Defence: ASPI Defence Budget Brief 2013-14*, Australian Strategic Policy Institute, accessed August 2013, from http://www.aspi.org.au/publications/publication_details.aspx?ContentID=359&pubtype=3
- Thomson, M. and Davies, A. (2013) 'Defence', in *Agenda for change: Strategic choices for the next government*, Australian Strategic Policy Institute
- Treasury (1996) *Documentation of the Treasury Macroeconomic (TRYM) Model of the Australian Economy*, Modelling Section, Macroeconomic Analysis Branch, The Treasury, Australian Government, accessed August 2013, from <http://archive.treasury.gov.au/documents/236/PDF/part01.pdf>
- Treasury (2002) *History of fuel taxation in Australia: Background paper to the Fuel Taxation Inquiry*, The Treasury, Australian Government
- Treasury (2010) *Australia's future tax system - Report to the Treasurer*, The Treasury, Australian Government, accessed October 2013, from http://taxreview.treasury.gov.au/content/Content.aspx?doc=html/pubs_reports.htm
- Treasury (2011a) *Mid-year economic and fiscal outlook 2011-12*, The Treasury, Australian Government, accessed August 2013, from <http://www.budget.gov.au/2011-12/content/myefo/html/index.htm>
- Treasury (2011b) *Strong Growth, Low Pollution: Modelling a carbon price*, The Treasury, Australian Government from <http://archive.treasury.gov.au/carbonpricemodelling/content/default.asp>
- Treasury (2012) *GST Distribution Review - Final Report*, The Treasury, Australian Government, accessed 18 August 2013, from http://www.gstdistributionreview.gov.au/content/reports/finaloctober2012/downloads/GST_final_consolidated.pdf
- Treasury (2013a) *Commonwealth Budget Papers 2013-14*, The Treasury, Australian Government, accessed October 2013-14, from <http://budget.gov.au/2013-14/>
- Treasury (2013b) *Pre-election economic and fiscal outlook 2013*, The Treasury, Australian Government, accessed August 2013, from http://www.treasury.gov.au/~media/Treasury/Publications%20and%20Media/Publications/2013/Pre-Election%20Economic%20and%20Fiscal%20Outlook%202013/Downloads/PDF/PEFO_2013.ashx
- Treasury (2013c) *Tax Expenditures Statement 2012*, The Treasury, Australian Government, accessed 2 October 2013, from http://www.treasury.gov.au/~media/Treasury/Publications%20and%20Media/Publications/2013/TES/downloads/PDF/TES_2013_Consolidated.ashx
- Treasury (multiple years-a) *Commonwealth Budget Papers 2002-03 to 2012-13*, The Treasury, Australian Government, accessed October 2013, from http://www.budget.gov.au/past_budgets.htm

- Treasury (multiple years-b) *Tax Expenditures Statement*, The Treasury, Australian Government, accessed 7 November 2013, from <http://www.treasury.gov.au/PublicationsAndMedia/Publications>
- Treasury ACT (2012) *Territory Budget Papers 2012-13*, Chief Minister and Treasury Directorate, Australian Capital Territory Government
- Treasury ACT (2013) *Territory Budget Papers 2013-14*, Chief Minister and Treasury Directorate, Australian Capital Territory Government
- Treasury and Trade Qld (2012) *State Budget Papers 2012-13*, Queensland Treasury and Trade, Queensland Government
- Treasury and Trade Qld (2013) *State Budget Papers 2013-14*, Queensland Treasury and Trade, Queensland Government
- Treasury NSW (1999) *The Case for Payroll Tax*, Office of Financial Management Research and Information Paper TRP 99-3, The Treasury, Government of New South Wales, accessed August 2013, from http://www.treasury.nsw.gov.au/_data/assets/pdf_file/0017/6650/TRP9-3_Pay_Roll_Tax.pdf
- Treasury NSW (2011) *NSW Government submission to the 2011 Tax Forum*, The Treasury, Government of New South Wales, accessed October 2013, from http://www.futuretax.gov.au/content/TaxForum/statements/state_territory/NSW_Government.pdf
- Treasury NSW (2012) *State Budget Papers 2012-13*, The Treasury, Government of New South Wales
- Treasury NSW (2013a) *Interstate Comparison of Taxes*, The Treasury, Government of New South Wales, accessed August 2013, from http://www.treasury.nsw.gov.au/_data/assets/pdf_file/0004/24349/TRP13-01_Interstate_Comparison_of_Taxes_2012-13_dnd.pdf
- Treasury NSW (2013b) *State Budget Papers 2013-14*, The Treasury, Government of New South Wales
- Treasury NSW (multiple years-a) *Interstate Comparison of Taxes*, The Treasury, Government of New South Wales, accessed August 2013, from http://www.treasury.nsw.gov.au/Treasury_Research_Papers
- Treasury NSW (multiple years-b) *State Budget Papers 2002-03 to 2012-13*, The Treasury, Government of New South Wales
- Treasury WA (2012) *State Budget Papers 2012-13*, Department of Treasury, Government of Western Australia
- Treasury WA (2013a) *Royalty Income Forecasts*, Department of Treasury, Government of Western Australia, accessed 30 October 2013, from <http://www.treasury.wa.gov.au/cms/content.aspx?id=4031>
- Treasury WA (2013b) *State Budget Papers 2013-14*, Department of Treasury, Government of Western Australia
- Turner & Townsend (2012) *International construction cost survey 2012*, Turner & Townsend, accessed September 2013, from <http://www.turnerandt Townsend.com/construction-cost-2012/16803.html>
- University of Sydney (2012) 'Sydney motorists support congestion charges', accessed 18 November 2011, from <http://sydney.edu.au/news/84.html?newsstoryid=9509>
- Ventry, D. (2010) 'The accidental deduction: a history and critique of the tax subsidy for mortgage interest', *Law and Contemporary Problems*, 73, p 233-284
- Watt, D. (2013) *Budget Review 2013-14: Defence Budget overview*, Parliamentary Library of Australia, accessed August 2013, from http://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/BudgetReview201314/DefenceBudget
- Watt, D. and Payne, A. (2013) *Budget Review 2013-14: Trends in Defence expenditure since 1901*, Parliamentary Library of Australia, accessed August 2013, from http://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/BudgetReview201314/DefenceExpenditure
- Weidmann, B. and Norton, A. (2012) *Detailed financial analysis: Analysis supporting the Graduate Winners report*, Grattan Institute from http://grattan.edu.au/static/files/assets/cdb8c2b7/163_graduate_winner_s_report_detailed_financial_analysis.pdf
- White, H. (2012) 'A middling power: why Australia's defence is all at sea', *The Monthly*, September 2012, accessed August 2013, from <http://www.themonthly.com.au/issue/2012/september/1346903463/hugh-white/middling-power>
- Wiggins, J. (2013a) 'Governments fail on infrastructure analysis: Ken Henry', *Australian Financial Review*, 1 October 2013, accessed 1 October 2013, from http://www.afr.com/p/australia2-0/governments_fail_on_infrastructure_y3HVAbasoDLDBsiOT4Kdnl

- Wiggins, J. (2013b) 'NSW needs more infrastructure built faster: Baird', *Australian Financial Review*, 1 October 2013, accessed 1 October 2013, from http://www.afr.com/p/business/companies/nsw_needs_more_infrastructure_built_irtzdPS8Fuus4FS06Ztn6H
- Wood, G., Ong, R. and McMurray, C. (2011) *The impacts of the Henry Review recommendations on the private rental market-Savings income discount and rent assistance*, Final Report No. 175, Australian Housing and Urban Research Institute
- Yates, J. (2009) *Tax expenditures and housing*, for the Brotherhood of St Laurence, Australian Housing and Urban Research Institute, accessed 8 October 2013, from http://www.ahuri.edu.au/publications/download/ahuri_judith_yates_research_paper
- Yates, J., Kendig, H. and Phillips, B. (2011) *Sustaining Fair Shares: the Australian Housing System and Intergenerational Sustainability*, Final Report No. 2011, Australian Housing and Urban Research Institute

This paper uses unit record data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey. The HILDA Project was initiated and is funded by the Australian Government Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA) and is managed by the Melbourne Institute of Applied Economic and Social Research (Melbourne Institute). The findings and views reported in this paper, however, are those of the author and should not be attributed to either FaHCSIA or the Melbourne Institute.