How low can we go? Assessing welfare costs relative to revenue raising capabilities for Australia's state and federal taxes

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Abstract

Harberger coined the term excess burden to emphasise that taxes impose costs in addition to the revenue they collect. Reviews of Australia's tax system have used point estimates of the excess burden for a series of Australian taxes, among other measures, to motivate and prioritise the nation's reform agenda. In this note we commence the work needed to elucidate what Australia's optimal tax mix might look like under alternative revenue raising efforts, by studying how the excess burden of four Australian taxes change as we alter their tax-specific revenue-to-GDP ratios. This is achieved via simulation with a large-scale CGE model with high levels of tax-specific detail.

Paper presented to the Melbourne Economic Forum, 16th August 2022, Victoria University, Melbourne.

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Summary

Australia's Future Tax System Review (the Henry Review), commissioned in 2008 and published in 2010, set out 138 specific tax reform recommendations for the nation. At a high level, these emphasised concentration of revenue-raising across a series of efficient tax bases (personal income, business income, private consumption and economic rents), and the removal of other taxes that do not fall under these categories. Most of the taxes currently relied upon by Australia's states and territories as funding sources do not fall under either of the four efficient tax bases listed in the Henry Review.

Previous studies of the relative efficiency costs of Australia's taxes have calculated point estimates of the marginal excess burden for each tax, i.e., marginal excess burden estimated at the tax's current revenue raising effort. However, comprehensive tax reform, and/or large changes in the overall revenue raising effort of the state and federal tax systems, could involve large changes in tax rates for particular taxes. To understand what a comprehensively efficient tax system might look like, and to understand which taxes should best take up additional revenue raising load as inefficient taxes are cut, we require estimates of marginal excess burden for each tax across wide potential revenue raising loads, not just point estimates. This would allow us to answer questions like: What is the systemically-efficient distribution of revenue raising effort across all tax types? Should some inefficient taxes be retained, but at much lower rates?

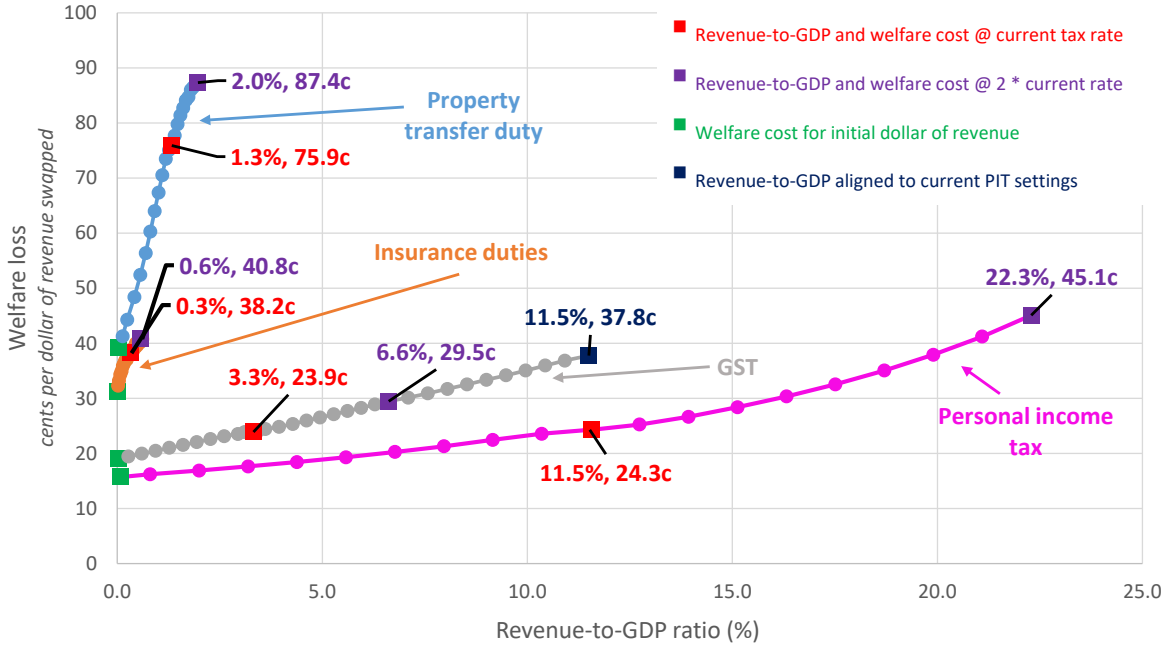
Both these questions require an understanding of how the excess burden, or welfare cost for a given tax, vary as tax rates/thresholds vary. Australia's tax system is however incredibly complex: the Henry Review for example identified 125 distinct taxes levied across all levels of Government in the country. Deriving welfare cost curves for each of these 125 taxes is beyond the scope of this note. We begin the work of estimating tax-specific relationships between marginal excess burden and revenue raising effort by focussing on four taxes in particular: (1) Personal income tax; (2) The GST; (3) Property transfer duties; and (4) Insurance duties. We begin with these four taxes for three reasons. First, personal income tax and GST are broad based taxes raising significant revenue. They are often advanced as candidates for replacing narrow based inefficient taxes. Point estimates of the marginal excess burden for these two taxes are typically in the range of 20c – 30c per dollar of revenue raised.

Second, property transfer duties and insurance duties are often identified as good candidates for reform. They are narrow based and point estimates of their excess burdens are typically high. Third, a popular reform proposal is for the federal government to assist the states in reducing inefficient taxes. One possibility would be to raise personal income tax and/or GST to reduce property transfer duties and insurance duties.

For each of the four taxes, we study how its welfare cost, or marginal excess burden, changes as its tax rate varies. The process is conceptually intuitive but computationally intensive. We incrementally adjust the rate of each tax across a series of twenty simulations, allowing us to sample the welfare cost distribution for each of the four taxes across the range [0, T^{initial}, $2T^{\text{intial}}$] where T^{initial} is the level of the tax rate in the baseline forecast. All simulations are conducted using VURMTAX. The model is dynamic, and we compute results out to 2040. We report results for the 2040 solution year.

Figure 1: Marginal excess burdens at different revenue raising efforts

Schedules of welfare loss (*y*-axis) relative to the ratio of revenue-to-GDP (*x*-axis) for insurance duties (orange circles), property transfer duties (blue circles), the GST (grey circles) and personal income tax (magenta circles) in Australia, derived using VURMTAX.



The results of the eighty simulations we perform yield the welfare cost curves reported in Figure 1. Along the vertical axis in Figure 1, we plot welfare costs (or marginal excess burdens), measured in cents per dollar of revenue raised. Because the tax bases for each tax we study differ significantly,

plotting these costs against tax rates on the *x*-axis is inappropriate. Instead, we study how welfare costs vary relative to the tax-specific revenue-to-GDP ratio for each tax. This has the benefit of allowing the graph to be used to investigate shifts in revenue raising effort across taxes. In the upper left of Figure 1, the blue and orange lines sketch the welfare cost curves for property transfer and insurance duties, respectively. The narrow-base of each tax is evident in the high and steep welfare cost gradients exhibited in Figure 1, certainly relative to the broader-based GST (grey line) and personal income tax (magenta line). The current marginal excess burden and revenue-to-GDP ratio for each tax are highlighted in red squares and text, with property transfer duties carrying the largest marginal excess burden (75.9 cents per dollar). Interestingly, despite carrying quite different revenue shares to GDP, the GST and personal income tax exhibit similar marginal excess burdens of 24 cents per dollar, indicating that policy makers have arrived at about the right mix of GST / personal income tax.

Importantly, even at revenue-to-GDP ratios close to zero (green squares), the excess burdens for insurance duties (31 cents per dollar) and property transfer duties (39 cents per dollar) exceed the current levels for both the GST and personal income tax (24 cents per dollar). Replacing both the inefficient state taxes (worth about 1.6 percent of GDP) with the GST, we would see a rise in its excess burden of about 2.5 cents per dollar, which remains well below the zero-rate excess burdens for each of the state taxes considered. The rise in the tax-specific excess burden is smaller if the state taxes are replaced via increased personal income tax collections (25 cents per dollar at the new revenue-to-GDP target, a rise of 1 cent per dollar). Hence, relative to the excess burdens of GST and personal income tax estimated over relevant revenue replacement ranges, property transfer and insurance duties are inefficient at any level and should be eliminated entirely.

In future work, we plan to expand the range of taxes for which we estimate the damage / revenue functions reported in Figure 1. This will allow us to estimate optimal tax mixes across alternative system-wide revenue raising efforts by calculating the marginal excess burden equalising revenue-to-GDP ratios across all tax instruments necessary to achieve given overall revenue-to-GDP targets.