



Keynote Address to the Revenue Summit 2023

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“How Stage 3 will increase overall inequality and the gender pay gap, with negative effects on productivity and the fertility rate”

Outline: My presentation will centre on two issues:

1: Effective rate structure of the PIT + LITO:

Why the effective marginal tax rates (EMTRs) of the Stage 3 PIT (Personal Income Tax) rate cuts, combined with the LITO (Low Income Tax offset) of \$700, can be expected to have a negative effect on labour supply and, in turn, on productivity.

2: Tax base and EMTRs of the PIT+LITO+FTB-A (Family Tax Benefit-A):

Why the structure of EMTRs under the Stage 3 tax cuts can be expected to have a negative effect on both female labour supply and fertility.

1 Effective rate structure of the PIT + LITO

Table 1 lists the PIT MTRs on individual incomes legislated to apply in 2024-25.

Table 1: PIT MTRs 2024-25

Taxable income bracket	PIT MTR
\$0 - \$18,200	0.0
\$18,201 - \$45,000	0.19
\$45,001 – \$200,000	0.30
\$200,000 +	0.45

PIT+ LITO. The LITO is set at \$700. As a tax offset, it can be viewed as funding the gain from an increase in the zero rated threshold from \$18,200, shown in Table 1, to \$21,884. The \$700 offset is subsequently fully withdrawn by adjustments to tax rates in two income bands as follows:

Taxable income	Withdrawal of offset	Rise in tax burden
\$37,501 to \$45,000	\$700 - 5% if income above \$37,500	\$375
\$45,001 to \$66,666	\$325 – 1.5% if income above \$45,000	\$325

The second adjustment raises the MTR across the taxable income band of \$45,001- \$66,666 from 0.30 to the higher rate of 0.315.

1.1 EMTRs of the PIT + LITO in 2024-25

From the preceding outline of the impact of the LITO on tax rates, it is evident that it has the effect of replacing the strictly progressive PIT MTR scale in Table 1 with one that is no longer strictly progressive. The highest EMTR on incomes below \$200,000 is 31.5% will apply across incomes from \$45,001 to \$66,666, as listed in Table 2. This rate is above that of the 30% applying across incomes from \$66,667 to \$200,000. The LITO reduces the transparency of the fact that the true MTR scale is not strictly progressive.

Table 2: PIT+LITO: EMTRs 2024-25

Taxable income bracket	PIT+LITO MTR
\$0 - \$21,884	0.0
\$21,885 - \$37,500	0.19
\$37,501 - \$45,000	0.24
\$45,001 – \$66,666	0.315
\$66,667 - \$200,000	0.30
\$200,000 +	0.45

Given the large tax cut on incomes approaching \$200,000, it might seem surprising that the government would introduce a regressive rate scale across a selected low income band, such as the rate of 31.5% across incomes from \$45,001 to \$66,666, the band preceding the lower 30% rate on incomes up to \$200,01. However, it becomes less surprising when it is recognised that a slightly higher EMTR across this income band can be expected to raise significant revenue for funding tax cuts due to the size of the population subject to the tax rate, as indicated by the shape of primary and average second earner wage profiles in Fig. 1. The profiles, which draw on data from the 2015-16 Household Expenditure Survey (HES), tend to be relatively flat up to around the 80th percentile and thereafter to rise steeply. (See Apps and Rees (2022), p. 971).

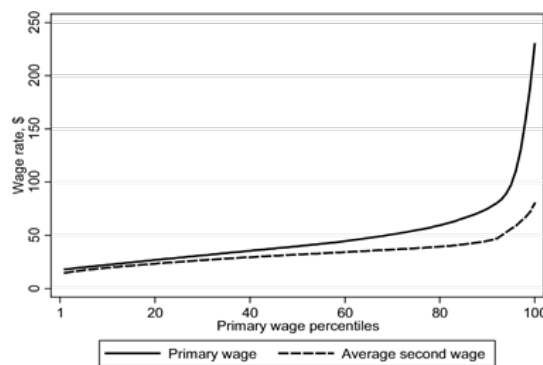


Fig. 1 Percentile primary and average second wage distributions

1.2 Labour supply incentives/productivity gains or losses

Support for lower tax rates across the upper levels of income¹ is typically based on the claim that there are efficiency gains from reducing labour supply disincentives by lowering top tax rates. This claim can be tested by computing percentile distributions of primary wage rates and hours of work drawing on HES data for two time periods. Here we present results based on data for primary earners in the 2003-04 and 2015-16 ABS HES samples.

The wage and hours profiles are plotted in Fig. 2. As in Figure 1, the percentile wage profiles rise slowly and are virtually linear up to the 85th percentile. They then turn sharply upwards,

¹ As illustrated by the arguments for the now legislated income tax reforms for 2024-25 in Australian Government (2020).

reflecting the rise in top incomes over the period. In contrast, hours of work are relatively flat beyond the 15th percentile. Fig. 3 plots compensated labour supply elasticities across the primary wage distribution. Given that wage rates rise steeply in the top percentiles while hours show almost no change, it is not surprising to find that the elasticity profiles tend to zero towards the top percentiles, as illustrated in Fig. 3. Given these results, it cannot be argued that there are efficiency or productivity gains from lowering taxes on top incomes. To the contrary, the far higher elasticities across relatively low and middle wage percentiles suggest that high MTRs across this range of incomes may be far more costly in terms of labour supply disincentive effects.

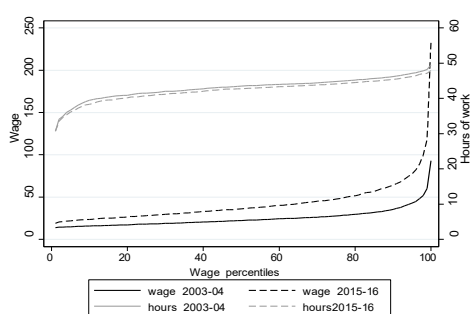


Fig. 2 Hours & primary wages

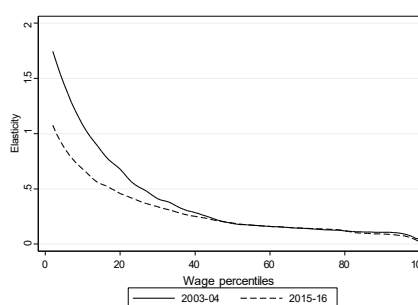


Fig. 3 Labour supply elasticities

These results suggest that the optimal response to the significant increase in income inequality over recent decades, driven largely by the growth in the income share of the top few percentiles,² is a shift towards a more progressive income tax system by raising top marginal tax rates, increasing the degree of differentiation and marginal rate progressivity in the upper half of the income distribution and lowering marginal tax rates in the lower half and middle of the distribution. Given the characteristics of the empirical wage and income distributions, the actual changes over recent decades, with reductions in the tax burden on top income and considerable shifting of the overall burden towards the middle deciles of income, cannot be rationalised in a model that takes account of the empirical evidence on inequality and labour supply elasticities.³

² As documented over the last two decades by, for example, Atkinson (2015), Atkinson and Leigh (2007), Atkinson, Piketty and Saez (2011), and Piketty, Saez and Stantcheva (2014).

³ Consistent with Australian Government (2015), the recent OECD (2021) Economic Survey for Australia supports the ongoing shift towards a “flatter personal income tax schedule” based on assumed efficiency gains from reduced labour supply disincentive effects. The authors fail to recognise that elasticities approach zero towards top incomes. See Andrienko et al. (2016) and Apps and Rees (2018).

2 Tax base and EMTRs of PIT + LITO + FTB-A

As noted above, the majority of the working age population lives in couple income units and many are two-parent families. With the formation of a couple household additional information problems arise. While data on individual incomes remain available, data on individual consumptions are missing, and so a consumption tax, such as the GST, cannot be superior to a well-designed income tax because it is a more constrained policy instrument.

It is less well recognised that there is also a missing data problem associated with reported earnings of two parent families. The implicit earnings of a partner who specialises in home production is typically omitted. This has critical implications for tax design when the data show a significant fall, together with a high degree of heterogeneity, in the 2nd earner's labour supply after the arrival of the first child.

The explanation is straightforward: the arrival of the first child creates an additional time constraint: the child requires full time care. In turn, this constraint provides an alternative work choice, that of working at home and providing childcare as a substitute for working in the market and buying in childcare, a choice that will depend on both the 2nd earner's wage rate and the price of childcare. This also makes the availability of good quality childcare at an affordable price crucial to the decision on the 2nd earner's labour supply.⁴

2.1 Two parent family: PIT+LITO+FTB-A

This Section begins by outlining the structure of EMTRs and lump sums under the PIT+LITO and FTB-A across the distribution of primary income and on the second income at selected primary income levels. Graphs of the profiles of EMTRs and ATRs for a 2-child family are included as an illustrative case. The Section goes on to presents evidence of the high degree of heterogeneity in the allocation of time to labour supply vs. home production by the female partner as 2nd earner across a family life cycle defined according to the presence and age of children.

⁴ Attanasio et al. (2003), for example, show that childcare prices were the main explanation for changes in labour supply across cohorts of women in the USA. See also the results of the analysis of optimal family taxation in Apps and Rees (2018), and for cross county comparisons, see Apps and Rees (2009, Ch.6).

FTB - A: Structure of EMTRs and lump sums

A key feature of the FTB-A system is that it provides a “Maximum Rate” payment for each child, set according to the age of the child. The total of the Maximum Rate payments for a family is withdrawn, or “targeted”, on the basis of joint family income. The system therefore has three major implications:

- (i) The tax base shifts towards joint family income.
- (ii) Since the payment for each child varies with the age of the child, an observable characteristic, the total is a “tagged” *universal* payment.
- (i) Income targeting of total payments at specified rates in the dollar changes *effective marginal tax rates* but not the *universality* of the payments.

With the shift towards joint taxation, the calculation of EMTRs changes dramatically. As we saw in the case of an individual based PIT and PIT+LITO, the same rate scale applies separately to the taxable income of each partner. The system therefore has *marginal rate independence* at all income levels - an increase in one partner’s income does not affect the other’s MTR. In contrast, under a joint income tax the marginal rates faced by partners are equalised, regardless of the degree of inequality of those incomes – their tax rates exhibit *positive jointness*. This means, for example, that if the male partner as primary earner is fully employed, the question of whether the female partner will take a job or work longer hours depends on the change in the household's total tax bill that results, including any effect on the male partner’s marginal tax rate of her increase in income, that is, it depends on the incremental family tax burden with respect to her work decision.

Example: 2-child family.

Fig. 4(a) plots the profile of EMTRs across the income of the primary earner in a single income, 2 child family. Fig. 4(b) plots the profile of average tax rates on the income of the second earner who goes out to work when the primary earner’s income rises from \$52,000 to \$70,000. For example, if the primary earner’s income is \$60,000 and the second earner can find full time work for the same income, she will no longer have the benefit of a zero rated threshold but instead can face an EMTR above that on the last dollar of the primary earner’s

income. (For a detailed analysis, see Apps and Rees (2018). For cross county comparisons, see Apps and Rees (2009)).

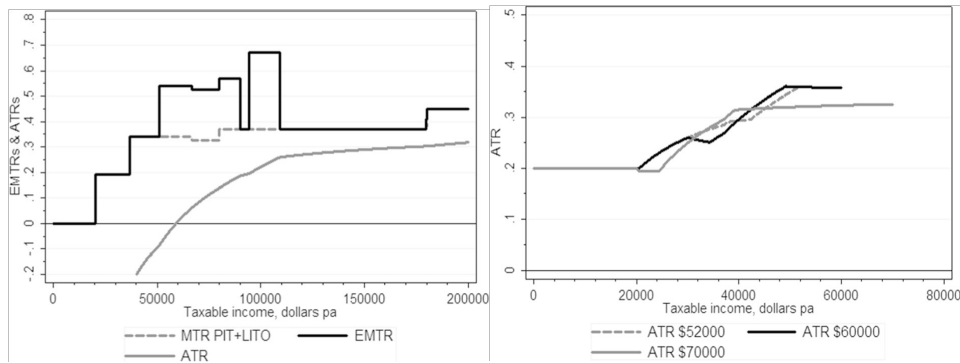


Fig 4(a): EMTRs on primary income Fig 4(b): ATRs on second income.

3 Female labour supply over the life cycle

The data indicate a sharp but highly heterogeneous fall in female labour supply following the arrival of the first child. This becomes strongly evident when we construct labour supply profiles across a life cycle is defined according to the age and presence of children as follows:

- Phase 1: Pre-children
- Phase 2: At least one child of pre-school age is present
- Phase 3: Children are of school age or older but still dependent
- Phase 4: Parents are of working age but with no dependent children
- Phase 5: Retirement

To illustrate, we draw on data for couple income units in the HES 2015-16. We split the records within each phase into two subsets according to the 50th percentile of female hours. Households in which female hours are at or below the 50th percentile are labelled H1 and those that are above, H2.

Table 3 reports the data means for male and female total hours of work, together with those of the H1 and H2 subsets, across the five life cycle phases. The profiles of total hours are shown graphically in Fig. 5(a). Fig. 5(b) plots the profiles of the data means of the male and female H1 and H2 hours of work. We observe that while male H1 and H2 hours of work are very closely matching within each phase, there is a wide gap between the profiles of female H1 and H2 hours in each phase.

Table 3: Male and female labour supplies (HES 2015-16)

Phase	Male			Female		
	Hours	H1	H2	Hours	H1	H2
1	2161	2186	2121	1772	1368	2217
2	2202	2250	2249	1036	273	1866
3	2187	2234	2135	1285	549	2089
4	2068	2080	2056	1419	701	2211
5	566	566	566	441	0	882

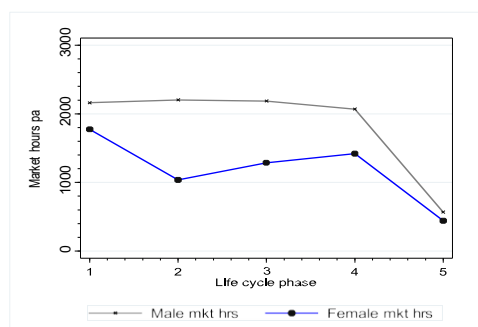


Fig 5(a) Life cycle labour supplies, HES 2015-16

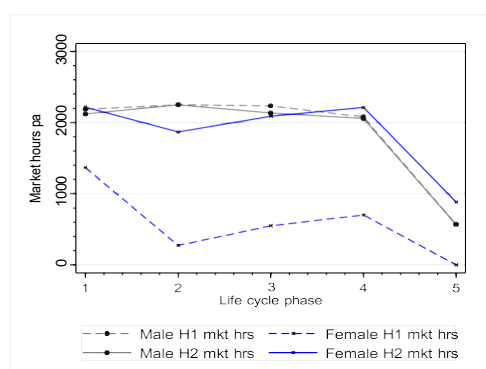


Fig. 5(b) H1 and H2 labour supplies, HES 2015-16

In the analysis of optimal family taxation in Apps and Rees (2018) we find that the observed heterogeneity in second earner labour supply can be generated by the interaction between the wage rates of mothers as 2nd earners and small variations in the price of childcare. In other words, given the 2nd earner's lower wage, her labour supply is sensitive to childcare prices which are known to vary widely across a largely privatised system. Under these conditions, a progressive individual based income tax is found to strongly dominate one based on joint income, on grounds of both efficiency and equity. This finding also indicates the potential for a high efficiency cost due to variation in the price of childcare, net of taxes and subsidies, across a largely privatised childcare sector.

In addition, borrowing by low to middle wage earners in Phase 2 to cover high childcare fees can be costly.⁵ The data show that the capital market is far from perfect, with parents facing a borrowing interest rate that rises with non-collateral based borrowing. This result lends further support for a public childcare system. A more progressive, and strictly progressive, individual based income tax combined with access to public childcare can be expected to achieve a significant increase in the tax base, together with gains in human capital for 2nd earners able to stay in full-time work in Phases 2 and 3. The latter can also be expected to reverse the ongoing decline fertility.⁶

4 Concluding comment

The preceding analysis provides a critique of Australian income tax policy over recent decades based on the economic concepts of modern tax theory and drawing on ABS survey data. It summarises the results of previous work with co-authors over this period and extends the analysis to take account of reforms legislated to take effect in 2024-25.

The findings imply the need for a far-reaching change in the direction of reform to the Australian income tax system, one which reverses the significant shift in the tax burden towards lower and middle income households. The analysis highlights the importance of recognising that income targeting family payments raises effective marginal tax rates across low to middle income primary earners and, in turn, across the incomes of 2nd earners, but leaves the universality of the payment intact. The higher effective rates are found to be associated with strongly negative effects on female labour supply during the preschool years and across subsequent phases due to loss of human capital following withdrawal from the workforce in the pre-school phase.

The results support a more progressive, entirely individual income-based PIT system, with family payments recognised as universal and “tagged” according to the observed needs of a child of a given age. This would mean a simplification of the system with the removal of the LITO, which have served essentially to conceal the replacement of the strictly progressive rate scale of the PIT with one that is regressive across low to middle bands of income.

⁵ See Apps and Rees (2010).

⁶ See Apps and Rees (2004).

References

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