



**Inland Revenue**  
Te Tari Taake

**Policy and Regulatory Stewardship**  
***Kaupapa me te Tiaki i ngā Ture***

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## Briefing note

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To: Revenue Advisor, Minister of Revenue – Jason Batchelor  
Private Secretary, Minister of Revenue – Nikki Chamberlain  
Revenue Advisor, Parliamentary Under-Secretary to the Minister of Revenue – Mila Maxon

cc: Peter Mersi, Commissioner  
David Carrigan, Deputy Commissioner  
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Jill Compton, PA to Deputy Commissioner  
Governance, Ministerial & Ministerial Services

From: Felicity Barker

Subject: **Distributional modelling**

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1. You have asked for us to undertake modelling of the distributional impacts of GST and income tax combined.
2. The purpose of this briefing note is to confirm and clarify your request and set out some existing work on this issue.
3. We also attach the first draft of the first 10 chapters of the High-Wealth Individuals Research Project report, which was sent for peer review this week. The paper is being reviewed by Associate Professor Peer Skov and Professor Craig Elliffe.

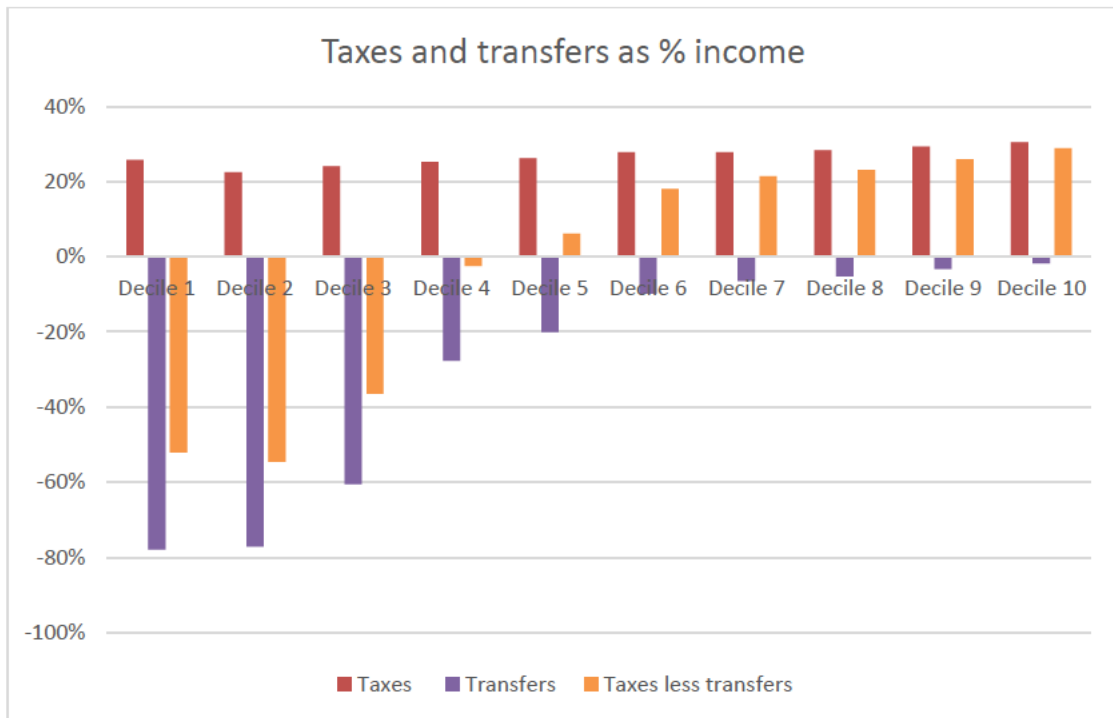
### Existing analysis

4. We understand that you are wishing to have more information on how progressive the tax system is when both income tax and GST are considered. When determining progressivity, it is useful to consider both the tax and transfer system together, given the significant role the transfer system has in redistributing income.

**Tax Working Group**

- The Tax Working Group Final Report (2019) analysed how much is paid in income tax and GST, and received in transfers, relative to total income<sup>1</sup> across the household income deciles. This analysis, based on HES 2012-13, is presented below.

*Taxes and transfers as % of total income (Treasury analysis for TWG)*



- The effective tax rates for taxes alone and taxes less transfers were as follows:

Decile	1	2	3	4	5	6	7	8	9	10
<b>Tax</b>	26%	23%	24%	25%	26%	28%	28%	28%	29%	31%
<b>Tax less transfers</b>	-52%	-55%	-36%	-2%	6%	18%	21%	23%	26%	29%

- The TWG considered that, while the absolute amount of tax paid increases by decile, there is not a significant increase in average effective tax rates with income deciles (when considering tax only). They noted that progressivity for the New Zealand tax and transfer system is instead largely delivered through transfers, such as Working for Families. The analysis above indicates that, when deciles are considered as a group, the first 4 deciles are net recipients under the tax and transfer system.
- The above analysis considers both income tax and GST paid, relative to income. As discussed previously (IR2022/327 refers), there are difficulties in using the GST to income ratio to assess the progressivity of the tax system. This is because our measures are limited to short-term data – normally a single tax year. Several

<sup>1</sup> Total income is a type of gross income that includes taxable and non-taxable sources, including cash transfers and tax credits, but is not as wide as “economic income”. It does not include non-taxable capital gains.

studies have noted that, over a lifetime, income taxes will appear less progressive and consumption taxes (e.g. GST) will appear less regressive than annual measures.<sup>2</sup>

9. For GST, this is because high-income individuals tend to save a higher portion of their income than low-income individuals. This results in lower expenditure relative to income, and therefore a lower GST-income ratio. If these individuals later spend their savings, for example in retirement, they will then have a high GST-income ratio at that point in their lives. The GST-income ratio is therefore significantly impacted by life-cycle effects. As an example, many of the people in deciles 1 and 2 of income may be borrowing (e.g. students) or "dissaving" (e.g. retirees spending previously accumulated wealth). For these people, a high GST to income ratio may be seen as entirely appropriate given at other periods of their life they paid a low GST to income ratio.
10. An alternative way to analyse the impact of GST is to measure the impact of GST on poverty, as has been done by Alastair Thomas.<sup>3</sup> In his analysis, Thomas finds that consumption taxes increase the number of individuals below the poverty line by three percentage points on average in the OECD countries studied.

### **Final Income**

11. Another approach that assesses the overall redistributive impacts of the tax and transfer system, and accounts for the impact of indirect taxation, is looking at final income.
12. Final income is disposable income (market income less income tax plus government cash transfers) plus the cost of in-kind social services received (health and education), and less indirect tax paid. It can be interpreted as a proxy for the economic resources available to households and is a more complete measure than disposable income, or the tax to income ratio, of the redistributive effects of government.
13. This has been studied by Aziz et al in 2012.<sup>4</sup> The graph below shows the average cost of income support and health and education expenditure, less tax (income plus GST) payments per household for each decile. This reveals the net impact of government redistribution on households' economic well-being. In the four time periods studied, deciles 1 to 5 received more government spending on the social services included in this study than they paid in taxes.

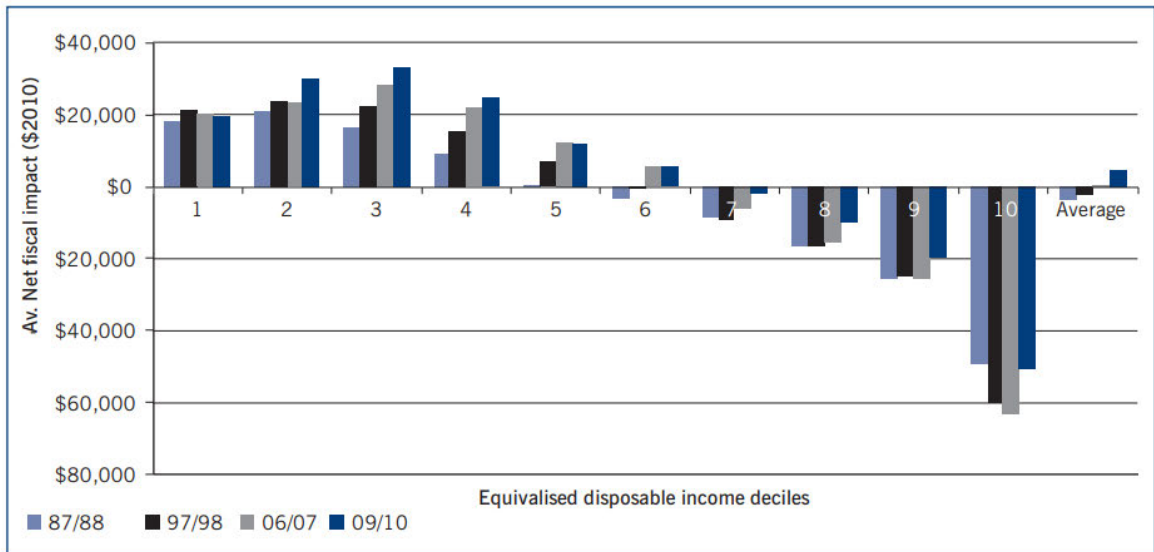
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<sup>2</sup> Fullerton, D., & Rogers, D. L. (1991). Lifetime vs Annual Perspectives on Tax Incidence. *National Tax Journal*, 277-287; Thomas, A. (2022). Reassessing the regressivity of the VAT. *Fiscal Studies* 43(1), 23 – 38; Levell, P., Roantree, B. & Shaw, J. (2021) Mobility and the lifetime distribution impact of tax and transfer reforms *International Tax and Public Finance* 28:751 – 793.

<sup>3</sup> Thomas, A (2022), Reassessing the regressivity of the VAT, *Fiscal Studies* 2022.

<sup>4</sup> Aziz, Ball, Gibbons, Gorman (2012) The Effect on Household Income of Government Taxation and Expenditure.

*Net Fiscal Impact Average receipt of income support and social services less tax payments per household (\$2010)*



**Work underway**

14. Both the Treasury effective tax rate project and the HWI project will include analysis with GST. Both these projects will look at effective tax rates including income tax and GST relative to economic income. Measuring economic income, as opposed to taxable income, allows us to assess the progressivity of the tax system against the change in economic resources available across households.
15. Preliminary results from this analysis will be made available to you later this year.
16. The Treasury is also undertaking a project to analyse final income across the income distribution, similar to the work discussed above by Aziz. In addition to looking at income tax, this work uses HES 2019 data to calculate the mean value of indirect tax (GST and excise tax on tobacco and alcohol) by income group and also accounts for government in-kind transfers. Taking account of the time needed to clear this data through Stats NZ, Treasury expect this work to be available early next year.
17. While we can also update the graph above for income tax and GST across taxable or HES income deciles, in the short term this will need to be based off aggregate data (HES median household income per decile) rather than through Treasury's micro simulation model. Aggregate data will be less accurate than micro simulation data and will miss certain factors such as tax credits. Therefore, this is likely to provide less accurate information than the above.

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