

Response to the National Assembly for Wales' Finance Committee's Inquiry into the impact of variations in national and sub-national income tax

This is a response by David Phillips, an Associate Director at the Institute for Fiscal Studies (IFS). The views and opinions here are those of the author only; the IFS has no corporate views. The response does not seek to provide an exhaustive review of the evidence, but instead highlight key conceptual and empirical evidence, and relate these to the Welsh context (including the specific form of partial tax devolution in place).

Background: the Welsh Rates of Income Tax

Income tax is partially, not fully devolved to Wales. In particular, the tax rates set by the UK government are reduced by 10 percentage points (to 10%, 30% and 35%) for non-savings non-dividends (NSND) income. The Welsh Government has the power to levy tax rates on top of these (reduced) UK government tax bands, and has so far chosen rates of 10% in each case (so that the total income tax rates of 20%, 40% and 45% remain the same as in England and Northern Ireland). The fact that the Welsh Government receives revenue only from its 10 percentage points of each band, and its rates apply to NSND income only has important implications for the revenue effects of behavioural responses to taxation.

Evidence on the responsiveness to changes in and variations in income tax

A summary measure of how responsive people are to income tax rate is the elasticity of taxable income or ETI. It measures the percentage change in reported taxable income when the share of each £1 someone keeps after tax changes by 1%. It is typically positive – people report more taxable income when they get to keep more of each pound – and larger values mean people are more responsive. A given elasticity can capture both “real” responses to taxation such as changes in how much and how hard people work and whether they migrate or not, as well as effects on tax avoidance and evasion. The nature of the response can matter for the economic and revenue effects of changes in income tax rates.

A large number of studies seek to estimate the ETI for different population groups in different countries – although there are none for Wales specifically, and only a relatively small number focused on sub national income taxes.

Key findings of this literature¹ are:

1. High income taxpayers have higher ETIs than middle and low income taxpayers, potentially reflecting the greater scope they have to make use of tax avoidance mechanisms or migrate to other jurisdictions, and perhaps the greater role of effort/performance (as opposed to hours of work) in determining their income.

¹ A review of work up until around 2010 can be found in Saez, E., Slemrod, J., and Giertz, S. H. (2012), 'The Elasticity of Taxable Income with Respect to Marginal Tax Rates: A Critical Review', *Journal of Economic Literature*, Vol, 50, No. 1, pp 3 – 50. Recent evidence from the UK includes two studies by authors at the IFS: Browne and Phillips (2017), available at <https://www.ifs.org.uk/publications/9675>; and Miller, Pope and Smith (2019), available at <https://www.ifs.org.uk/publications/14475>.

2. Responsiveness seems to be especially high for particular sub-sets of high income people like star inventors and professional sports people, where the labour market is global, and where there is therefore more opportunity for migration responses.
3. Those approaching retirement are generally more responsive to changes in income tax rates than those earlier in their careers. This may reflect the fact that older people have an additional margin of response – retirement –, while younger people have an incentive to be in the workforce to maintain and build up experience.
4. Capital income (esp. dividends income) is much more responsive to changes in income tax rates than labour income (a large majority of NSND income). In principle this could reflect those individuals who have significant capital income being more responsive than those who do not. In practise though, much of this seems to be due to the fact that there are more opportunities to avoid taxation of capital income – especially by retaining income within a business and taking advantage of lower tax rates later (especially on capital gains).
5. When changes in tax rates apply to some forms of income but not others, responses tend to be especially large if taxpayers have scope to change the form of income in which they take their remuneration. For example, company owner-managers could take more of their income in dividends or capital gains, if taxes are increased on NSND income – and employees and self-employed individuals could incorporate to take advantage of these opportunities.
6. The migration decisions of foreigners are more responsive to taxation than the migration decisions of native-born citizens. This may reflect the latter being more likely to have long standing ties to an area (e.g. family, culture), which means that the “cost” of moving in response to changes or differences in tax rates are larger than for foreigners.
7. Estimated ETIs are often larger for “big” reforms than for “small” reforms. This does not just mean that people respond more to larger reforms. It means that estimated elasticities are often bigger, i.e. the percentage change in taxable income *for each* percent change in the share of each £ someone retains after tax is bigger. This is one of several pieces of evidence which suggest people face significant costs on responding to changes or differences in tax rates that attenuate their responsiveness, especially in the short term. For example, for migration responses, these costs include the physical cost of moving (e.g. costs of buying/selling houses), information costs (e.g. on where taxes are lower, on where and which jobs are available), and psychological costs (e.g. missing family and friends). For avoidance it includes the effort and cost of seeking professional advice and taking decisions based on this. Given these costs it may only be worth making the effort to respond at all once tax changes/differentials are a sufficient size – although what that size is is likely to be very context specific. It may be lower where one has to move less far to avoid a tax, for instance – because it might be easier to find out information about properties and jobs (or even keep the same job), still see family and friends regularly, etc. And it may be lower for those already in receipt of professional advice on their tax affairs.

Evidence on responsiveness to variation in sub-national income taxes

As discussed, a number of papers look specifically at responsiveness of taxpayers to changes in and variation in sub-national income taxes. A related literature looks at migration responses to taxation – although many of these look at national, rather than sub-national income tax.²

² See http://econ.lse.ac.uk/staff/clandais/cgi-bin/Articles/JEP_Mobility.pdf.

Some studies find relatively little effect of variations in sub-national taxes on behaviour and hence tax bases. For example, Yang and Heim (2017)³ find that counties' tax bases in Indiana, USA, were unaffected by the tax rate charged by the county in the period 1997 and 2013: the estimated ETI is 0.06, which is not statistically significant. However, the levels and changes in tax rates used for identifying these effects are small – about 0.3%. As discussed above, adjustment costs may mean the responses to such small tax changes are attenuated, especially in the short run, leading to downwardly biased estimates of the scale of response to larger differences. However, Bruce, Fox, and Yang (2010) look at the effect of state-level income taxes on state tax bases in the USA and find similar results for states, where tax rate changes are larger. And while Gius (2011) finds state-level taxes have a statistically significant impact on migration for most demographic groups in the US, the magnitude of those effects is relatively modest. Moreover, Young and Varner (2011) find little evidence of migration responses among millionaires in New Jersey when the state income tax was increased, with retirees and those relying on capital (as opposed to earned) income being more responsive than average.⁴

A number of other studies find larger responses though – especially for subsets of the population. For example, Moretti and Wilson (2017) and Akcigit et al (2018) show that star scientists and inventors in the US are highly responsive to state income (and corporate income) tax rates. They argue this is important as there are more likely to be positive spillovers from this type of high income individual – although this is an untested assertion. Follow-up work by Zhang and Hewings (2019) suggest that scientists in the US are more responsive to larger changes in tax rates – perhaps reflecting the adjustment costs issue discussed above.⁵

Agrawal and Foremny (2019) find that high income taxpayers in Spain are highly responsive to sub-national income taxes, with an estimated elasticity of 0.85 for the number of top income taxpayers in a region. However, at the rates charged by regions, even with this relatively large response, the mechanical increase in tax revenue when rates are increased is larger than the loss as a result of migration out of the region.

Evidence from Switzerland is mixed, with some studies suggesting little migration response (Liebig and Sousa-Poza)⁶, while others suggest significant responses and hence substantial tax competition between Swiss Cantons (Feld and Kirchgassner), especially for higher income residents.⁷ One study also suggests that young graduates are more responsive than the wider population (Liebig et al)⁸.

Evidence from Scandinavia is also mixed, but suggests that decisions on whether to migrate relatively short distances may be more affected by tax competition – as the adjustment costs may be smaller, because people can keep the same job.

Implications for Wales

There are several lessons for Wales, despite the mixed evidence on how responsive migration decisions are to variation and changes in sub-national income taxes:

³ See http://www.ntanet.org/NTJ/70/2/A05_Yang.pdf?v=%CE%B1.

⁴ See <http://web.stanford.edu/~cy10/public/NTJ-millionaire-migration-state-taxation.pdf>.

⁵ See <https://link.springer.com/article/10.1007/s00168-019-00902-5>.

⁶ See <https://academic.oup.com/cje/article-abstract/30/2/235/1730009>.

⁷ See <https://www.sciencedirect.com/science/article/abs/pii/S0166046200000843>.

⁸ See <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1467-9787.2007.00529.x>.

1. Responsiveness to taxes, both in terms of migration and other behaviour (such as avoidance) is likely to be greater for high income individuals than for the rest of the population. The empirical evidence on this is what has led both HMRC (and the OBR) and the Scottish Government (and Scottish Fiscal Commission) to use substantially higher ETIs for people subject to the additional rate of income tax than for the higher and basic rates, when analysing and making tax policy decisions. Such an approach makes sense for Wales too.
2. While the appropriate *ranking* for scale of ETIs is fairly clear, it is less clear what should be assumed about the absolute size of ETIs. The HMRC and the OBR typically assume an ETI of about 0.45 for people subject to the additional rate of income tax rate. The Scottish Government and Fiscal Commission assume a similar value, effectively assuming that factors that could mean the appropriate ETI assumption for the Scottish Rates of Income Tax (SRIT) are higher or lower than for the UK rates offset each other:
 - a. On the one hand, the fact that the SRIT and the WRIT apply only to NSND income, which is generally found to be less responsive to changes in tax rates (potentially because of less opportunity to avoid tax on this type of income), would tend to suggest the ETI would be lower for devolved income tax and UK income tax.
 - b. On the other hand, the fact that devolved income applies only to NSND income means changes in devolved tax rates lead to changes in the relative taxes on NSND and savings and dividends income. This offers an additional margin of response – shifting income between these forms – which would tend to lead to a higher ETI.
 - c. And, one might expect that people are more likely to be migrate between constituent parts of the UK (especially where the distances involved are relatively small, such as in border areas, which are relatively densely populated in the case of England and Wales) than to migrate between the UK and overseas. This would again suggest a higher ETI for changes in devolved income taxes.
 - d. But, the characteristics of high earners in Wales – more likely to work in the public sector, less likely to be foreign – could offset at least part of this.

Ultimately, until there is analysis of variation in income tax between Wales and England, there will be very significant uncertainty about just how these factors interact to determine the responsiveness of the Welsh income tax base (and even then, identifying the effects of differences in income tax per se, in the context of many other economic and policy differences will be a difficult task). If there are income tax policy changes in Wales, the Welsh Government should consider commissioning research on its impacts – covering a period of several years to look at short and longer-term responses. But, in the meantime, starting from the assumptions used by HMRC/OBR and SG/SFC would be reasonable.

3. It is important to note though, that unless migration responses are very large indeed, the set-up of income tax devolution in Wales means that it is very highly likely that increases in tax rates, even the additional rate, would increase Welsh Government revenues.⁹ Conversely, reductions in tax rates would reduce revenues, unless behavioural responses were very large. This is because whilst the Welsh Government gains or loses the full ‘mechanical’ effect of the tax rate change, it only bears a portion of the behavioural effect.

⁹ The Wales Governance Centre have previously calculated how large migration responses would have to be to offset the increases (decreases) in revenue as a result of a tax increase (cut). I believe they will be updating these figures for their submission to this inquiry.

For instance, consider the case of an increase in the WRIT applied to the additional rate band from 10% to 11%. The Welsh Government would retain all the extra revenue raised from increasing that rate from 10% to 11%. But if the tax base fell, it would only bear the share of that fall that relates to its 11 percentage points of income tax; the impact on the UK government's 35 percentage points of income tax on this tax band in Wales would be borne by the UK government. This means it is much less likely that reductions in revenues from the falls in the tax base would be big enough to offset the increased revenues as a result of the higher tax rate than if all income tax revenues and rates were devolved to Wales.

This means compared to a situation in which income tax were fully devolved to Wales, increases in income tax rates are relatively more attractive (and decreases relatively less attractive) from a revenue perspective.

4. Of course, when making tax policy decisions, it is not just the effects of those decisions on revenues that the Welsh Government would want to consider. An increase in the additional rate of tax might yield revenue due to the fact the Welsh Govt bears only a portion of the migration and avoidance effect on the size of the Welsh tax base. But the Welsh Govt may still decide it does not want to do this if it is concerned with the welfare of additional tax rate payers appropriately, or it thinks there could be spillovers on the wider Welsh population (e.g. lower wages or fewer employment opportunities) if there is a reduction in the number of additional rate taxpayers in Wales. Any research commissioned in future would likely want to consider spillover effects on the wider Welsh population – although these can be difficult to identify empirically.
5. The scale of response to a significant change in tax rates could be more than proportionally bigger than the scale of response to a small change in tax rates. For example, one might expect a 5 percentage point change in tax rates to lead to a more-than 5 times as large a response as a 1 percentage point change in tax rate. This is because adjustment costs can attenuate the responses to small changes or differences in tax policy. This means that the scope for learning how taxpayers may respond to a big tax change from how they responded to a small tax change may be limited. This should be recognised in any future research.