The impact of sub-national income tax rates on migration

1. In evidence regarding the Scottish Rate of Income Tax (SRIT) presented to the Finance Committee, there have been differences of opinion regarding the extent, if at all, to which differences between income tax rates in Scotland and the rest of the UK would give rise to in- or out-migration. This paper reviews some of the evidence for tax driven migration in other countries where sub-national governments have power to set income tax rates.

2. One European Country with significant taxing power at the sub-national level is Switzerland. The other two countries considered are the USA and Canada. There are significant difficulties in obtaining evidence of tax driven migration as there are so many other factors bearing on a decision to migrate. Instances where there is a new and significant tax differential between sub-national territories, which is likely to have a degree of permanence, and which is not associated with economic shocks also driving migration, are not commonplace. This limits the opportunities for evidence based studies as multiple instances are necessary to tease out the influence of factors other than income tax rates on patterns of migration.

3. Obtaining relevant data on a regional basis is also an issue for researchers and many studies focus on differences between the tax revenue that would be generated in the absence of a behavioural response and that actually generated. While this provides a measure of *elasticity* in economic terms it does not distinguish the impact of migration from other responses such as migration of income, tax planning, tax avoidance and evasion. Public records generally do not record information relevant to an individual's migration history along with individual's tax and income data. Most studies, I have reviewed, which have something to say about personal income-tax driven migration are principally focussed on other questions of public policy such as welfare, business generation or other taxes such as corporate income or sales taxes.

Switzerland

4. In a 2014 paper, Anouk Bertier of SPICe surveyed the evidence for tax-induced migration in Switzerland.[1] While there is a federal income tax in Switzerland, it is at relatively low rates and Cantons and Communities have considerable taxing powers including the right to tax income. She reports that two studies she consulted found evidence of high-income taxpayers taking level of taxation into account in choosing their place of residence[2] while one found little such evidence.[3] Using

[1] Anouk Bertier, SPICe paper 14/14, 5 February 2014, p. 23

[2] Feld, L. and Kirchgassner, G., (2000) *Income Tax competition at the State and local level in Switzerland,* CESifo working paper, Munich; Schmidheiny, K., (2003), *Income Segregation and Local Progressive Taxation: Empirical Evidence from Switzerland,* Ecole des HEC, DEEP, Universite de Lausanne now apparently available in an updated version at http://www.sciencedirect.com/science/article/pii/S0047272705001325

aggregate data and econometric modelling, Feld and Kirchgassner found that tax induced migration was highest amongst the self-employed and lower amongst the retired and the employed, a conclusion that makes sense where the retired have lower levels of income and higher tax exemptions (the usual case in Switzerland) and employees would generally have to resign and find another job in order to migrate. Liebig and Sousa-Poza, using census data, found evidence that the young and the more educated were influenced by tax rates to a greater extent than other groups when migrating to a new area. Likewise, young persons were more likely to migrate out of Communities with rising tax rates. While for many groups the impact of tax rates appeared statistically insignificant, they considered their conclusion that a 1% change in higher tax rate leads to out-migration of 33 of 1,000 young Swiss college graduates robust.

5. Both these studies were limited in the time periods covered by the non-availability of relevant data over longer and more recent periods. The first covered Cantons and Communities while the second looked only at Communities. While the use of census data in the second study provided information on individuals, their education level, citizenship and visa status and other information, it did not provide information on income which had to be estimated from wage and income surveys. Together, while illustrating the difficulties in obtaining hard evidence that differential income tax rates at the sub-national level influence migration decisions, these studies suggest that the different levels of income tax charged in different localities have some influence on migration decisions and particularly so for the self employed, high earners and youngsters with high earning potential.

USA

6. One concern expressed by a number of witnesses before the Committee is that devolution of tax and spending powers to the nations of the UK will lead to tax competition and a race to the bottom where all will lose. Before looking at tax and migration between US States, I refer to a recent paper which looked at the question: does diversity in sub-national fiscal systems increase social welfare?[4] Garcia-Mila, McGuire and Oates chose the US as the subject for study in attempting to answer this question because of the high proportion of tax and spending powers in the hands of the States and local government compared to most other nations. There is significant diversity in the US in the use of a mix of income taxes, sales taxes and property taxes at the State and local authority level and diversity in the provision of public services. There is undoubtedly competition between authorities, and influence on migration as a result, but the diversity has been remarkably stable and has even tended to increase somewhat. This

---

[3] Liebig, T. and Sousa-Poza, A. (2006) *Taxation and Internal Migration: Evidence from the Swiss Census Using Community -Level Variation in Income Tax Rates* IZA DP No 2374

[4] Garcia-Mila, T., McGuire, T.J., Oates, W.E., (2015) *Strength in Diversity? Fiscal Federalism Among the Fifty U.S. States,* International Institute of Public Finance, Dublin, 20-23 August 2015

illustrates that diversity, once established, can be stable and need not lead to convergence towards the lowest common denominator.

7. One factor mentioned by a number of commentators, regardless of the country of study, is the potential offsetting of the impact of tax differentials on migration by the levels of public spending. Thus McGuire and Reuben[5], in a study of the impact of a self-imposed revenue ceiling in Colorado, review the literature and find ambiguity in the impact of lower taxes on interregional business location. Some studies have found it significant while others have not. They refer to an early influential study by Helms,[6] amongst others, which found that how spending is correspondingly reduced matters. Thus tax cuts leading to reduced spending on services which impact on business, such as education, may have an offsetting effect on business location and economic growth. This ties in with the commentators on migration in Switzerland and Canada who found a range of factors, other than tax, influencing migration, one of which is the provision of services, support and infrastructure by the local government.

8. Saez, Slemrod and Giertz,[7] in a paper looking at the elasticity of taxable income with respect to marginal tax rates, note a finding in a number of empirical studies that behavioural response to changes in marginal rates is concentrated at the top of the income distribution. This is significant because in the US in 2006 the top quintile of tax filers paid 86.3% of all individual income taxes and the top percentile paid 39.1%. In the UK by comparison, the top 1% of taxpayers were forecast to pay 27.5% in 2015-16.[8]

9. Elasticity, the difference between actual tax revenue and what would be expected if there were no behavioural response, takes account of migration in response to tax differentials but also all other behavioural responses, such as exchanging income for leisure, moving or altering sources of income, avoiding and evading tax. Thus, Saez, Slemrod and Giertz note the sharp increase in top individual incomes after a significant reduction in US personal income tax versus corporate income tax rates in 1986, which was recorded in a number of studies. This resulted from a restructuring of businesses so that the profits fell liable to personal income tax rather than corporate income tax.[9] The forestalling effect, to bring forward income into 1992, before the introduction of Bill Clinton's promised 1993 tax increases was also

[5] McGuire, T.J. and Reuben, K.S., (2000) *The Colorado Revenue Limit: The Economic Effects of TABOR,* State Tax Notes, 8 May 2006

[6] Helms, L.J., (1985) *The Effect of State and Local Taxes on Economic Growth,* Review of Economics and Statistics, Vol. 67, No 4, pp. 574-82

[7] Saez, E., Slemrod, J.B. and Giertz, S.H., (2009) *The Elasticity of Taxable Income with Respect to Marginal Tax Rates: A Critical Review*, National Bureau of Economic Research, Cambridge MA, Working Paper 15012, p. 4

[8] HMRC, *UK Income Tax Liabilities Statistics,* 22 May 2015, p. 15

[9] Saez, Slemrod and Giertz (2009), pp. 8-10.

notable.[10] Similar significant forestalling took place in the UK before the introduction of the 50% additional rate of income tax in 2010-11 and the opposite effect on its return to 45% in 2013-14. Specifically, incomes in the UK in 2009-10 were estimated to have increased by £16-18 billion in total with significant temporary reductions in income in subsequent years.[11]

10. Saez, Slemrod and Giertz find support for this sensitivity of reported incomes at the higher end of the income scale in, for example, a UK study by Brewer and others[12] covering 1962 to 2003 which found an elasticity of around 0.5% in the top 1% of incomes. This means that, if the net-of-tax rate increases by 1%, reported incomes will increase by 0.5% and vice-versa. This paper also showed that the proportion of foreigners at the top of the UK distribution increased much more quickly than the proportion in middle of upper groups, suggesting that differential tax rates in Europe was driving migration of top income groups to the lower taxed UK.[13] They find further evidence of such international migration of top earners in papers linking migration of top earners from Canada to the US to tax differentials between the two countries[14] and similarly from New Zealand to Australia and the UK.[15]

11. A recent paper by Bruce, Liu and Murray considers the impact of State tax policies on entrepreneurship.[16] While the focus is on entrepreneurial businesses rather than individuals and the potentially influencing factors are not confined to income taxes, they make some observations on the influence of income taxes on inter-regional migration of individuals. Their data shows that the most mobile entrepreneurs have been the highest income ones.[17] However, they report that the plurality of relevant factors mean that most recent studies have been inconclusive on the impact of tax on entrepreneurial activity, stating, "As with the PIT (personal income tax) rate, the net impact of the CIT (corporate income tax rate) on entrepreneurial performance is fundamentally ambiguous."[18] Their general conclusion is that States wishing to foster entrepreneurship should focus on

---

[10] ibid. p.11

[11] HMRC, *The Exchequer effect of the 50 per cent additional rate of income tax*, March 2012, and *Income Tax Liabilities Statistics,* May 2015, p. 62.

[12] Brewer, M., Saez, E., and Shephard, A., (2008) *Means Testing and Tax Rates on Earning,* IFS Working Paper, April 2008

[13] Saez, Slemrod and Giertz (2009), p. 50

[14] Saez, E. and Veall, M., (2005) *the Evolution of High Incomes in Northern America: Lessons from Canadian Evidence,* American Economic Review, 95(3): 831-849 reported in Saez, Slemrod and Giertz (2009), pp. 52-3

[15] Atkinson, A. and Leigh, A., (2008) *Top Incomes in New Zealand 1921-2005: Understanding the Effects of Marginal Tax Rates, Migration Threat, and the Macroeconomy,* Review of Income and Wealth, 54(2) reported in Saez, Slemrod and Giertz (2009), pp. 56-7

[16] Bruce, D., Liu, X. and Murray, M.N., (2015) *State Tax Policy and Entrepreneurship,* National Tax Journal, September 2015, 68 (3S), 803-838

[17] ibid., p. 815

[18] ibid., p. 820-1

creating a stronger business climate and economic growth rather than on tax policies.[19]

Canada

12. In Canada, the Federal Government and Provinces share the right to tax personal incomes. With the exception of Quebec, the provincial governments use the same tax base as the Federal Government and have agreements under which the Federal Government collects the provincial income tax for them. Quebec defines its own tax base and collects the tax itself. In 2009, 39.6% of the total Canadian income tax revenue accrued to the sub-national governments. In 2013, provincial rates for high earners varied from a low of 10% in Alberta to a high of 25.75% in Quebec. Outside Quebec, the highest federal bracket is taxed at 29% but in Quebec an abatement drops this to 24.2%. The combined Federal/Provincial rate is lowest in Alberta at 39% and highest in Nova Scotia at 50%. Prior to tax year 2000/2001, the system was one of "tax on tax" as the provincial tax was calculated as a percentage of a measure of federal taxes. Similar to SRIT, therefore, Canadian provinces could not apply progressivity in taxing income as they were limited to one percentage applicable to the "Basic Federal Tax". Now the system is closer to the Smith proposals with the Provinces setting their own rates and brackets on a Federally defined income base.[20]

13. Milligan and Smart, in a 2013 paper, find evidence of a strong behavioural response to high tax rates in the top one percent, and an even stronger on in the top tenth of one percent, than in the rest of the population. They attribute this to "a financial rather than real response mechanism" commenting on the ready access of the wealthy to skilled tax planning and financial advice. In a study based on 10 provinces for 24 years, they estimated an elasticity of 0.644 for the top 1% and of 1.414 for the top 0.1%. While the elasticity in the top 1% is significantly higher than other studies in the literature, for example, Saez, Slemrod and Giertz[21] suggest 0.12 to 0.4 as the range of best available estimates, it is close to the 0.62 estimated by the Department of Finance.[22] They offer three explanations for their differing results, the provincial data they use is a better basis than that used in much of the literature, elasticities relate to a particular tax base and are not necessarily comparable across jurisdictions and the ease with which

---

[19] ibid., p. 834

[20] This outline of the Canadian personal income tax system is taken from Milligan, K. and Smart, M., (2014) *Taxation of top incomes in Canada,* NBER Working Paper No. 20489, September 2014, pp. 3&4

[21] 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

[22] Department of Finance, (2010) *The response of individuals to changes in marginal income tax rates,* Part 2 in Tax Expenditures and Evaluations 2010

income can be switched between provinces would suggest higher elasticity than at the federal level.[23]

14. An interesting point noted by Milligan and Smart is that the federal grant system in Canada offsets to some extent the behavioural consequences of raising tax rates. A decline in a province's income tax base due to behavioural response results in an increase in equalisation entitlements of similar amounts some three to five years later. They speculate that this has encouraged the relatively high rate of provincial taxation in Canada. Consistent with this, four of the five provinces that have raised their top tax rates since 2010 are equalisation recipients, the exception being British Columbia, compared to only two of the five provinces that held their tax rates constant.[24]

15. In 2012, Day and Winer published a book on *Interregional Migration and Public Policy in Canada*[25] and tax rates are one of the policies they identify as influencing migration. They provide a tabular survey of previous empirical studies on fiscally[26] induced migration in Canada.[27] Of the studies commenting specifically on income tax rates, a 1984 study by MacNevin found clear evidence of taxes influencing migration, while the link with government expenditure was less clear. Higher taxes in the province of origin increased out-migration while higher taxes in other provinces reduced out-migration.[28] In a 1992 study, Day found that tax, among other variables, had a significant impact on migration through its effect on net wages.[29] Bennaroch and Grant used information on the migration of physicians in a 2004 study. Among various other physician-specific factors, they found after tax income having a positive effect on in-migration but differentials in tax rates as such did not seem to have a significant impact on a physician's decision to move.[30] Based on the "tax on tax" system in place before 2000/01, Day and Winer's modelling finds that interprovincial migration is generally sensitive to changes in provincial

[23] Milligan, K. and Smart, M., (2013) *Provincial Taxation of High Incomes: What are the Impacts on Equity and Tax Revenue?,* CLSRN-IRPP Conference, Ottawa, 24-25 February 3013, pp. 9&10

[24] Ibid., p. 17

[25] Day, K.M. and Winer, S.L., (2012) *Interregional Migration and Public Policy in Canada,* McGill-Queen's University Press, Montreal and Kingston, 2012

[26] *Fiscal* is used here in the broad sense and is not confined to tax matters - the most studied variable is unemployment insurance

[27] Ibid., Table 3.1, pp. 75-82

[28] MacNevin, A.S., (1984) *Fiscal Integration and Subcentral Public Sector Inducements to Canadian Interprovinicial Migration,* Unpublished Ph.D. dissertation, McMaster University

[29] Day, K.M., (1992) *Interprovincial Migration and Local Public Goods,* Canadian Journal of Economics 25 (I), pp. 123-44

[30] Bennaroch, M. and Grant, H., (2004) *The Interprovincial Migration of Canadian Physicians: does Income Matter?* Applied Economics 36 (20), pp. 2335-45

income tax rates just as it is to wage changes. In effect, what is influential is after-tax income.[31]

16. Day and Winer's work leads them to a clear conclusion that high taxation discourages in-migration. They note that there have been few studies where the impact of taxation has been examined independently of labour income. If one accepts that it is disposable or after-tax income that matters, they consider that the evidence in the literature becomes much clearer. Where tax changes are expected to be as permanent as changes in wages, they will have the same effect and the literature is clear on the impact of wages on migration. In conclusion, they suggest that the literature of the last few decades provides definite results regarding the impact of unemployment insurance and individual taxation on migration within Canada. Social assistance, public services and grants also appear to influence migration in some measure but the quantitative effects are not well established.[32]

Conclusion

17. The evidence from Switzerland suggests that the self-employed and the young, mobile and well educated are those most likely to take tax rates into account when locating. While the very diversity of the US States and the differing mix of taxes used makes it difficult to separate out the impact of personal income taxes on migration, the propensity of high income and entrepreneurial individuals to reduce reported income in response to tax increases is clear. In such an environment, out-migration is one of the likely ways of reducing income reported to a tax jurisdiction which raises its tax rates. In Canada, the sharing of the income tax base between the Federal and Provincial Governments is not dissimilar from the incoming SRIT and the more radical Smith proposals. Hence the evidence linking inter-provincial migration to income tax rate differentials is of particular relevance to Scotland.

18. The studies make it clear that many factors other than tax influence migration, some of them relating to policies of the sub-national governments concerned and others not. Personal views on the relative weight that individuals will give to income tax rates vis-a-vis these other factors may account for the differing views of those giving evidence to the Committee. I believe that experience in Switzerland, the US and Canada gives us good reason to expect that relative changes in rates of income tax between Scotland and the rest of the UK, provided the differences are expected to persist, will have an effect on the migration decisions of high-income individuals. One Swiss study[33] based on census data detected a similar impact on young, well-educated individuals who anticipate rising earnings. Given the proportion of

---

[31] Day and Winer (2012), p. 203
[32] Ibid., p. 261
[33] Liebig, T. and Sousa-Poza, A. (2006)

income tax in Scotland paid by high-earning individuals[34] and the importance to Scotland's future of retaining and attracting talent, these migration effects are of potential significance in future income tax rate setting.

Acknowledgment: My thanks to Professor David Heald of the University of Aberdeen for significant help in locating relevant studies.

Gavin McEwen
26 October 2015

[34] Prof. D Heald in written evidence to the Committee on 5 November 2014 reported that in 2011-12, out of a total of 2.64 million Scottish taxpayers, 217,000 with incomes above £50,000 paid 44.41% of total tax and 42,000 with incomes above £100,000 paid 22.55% of total tax.