Top Flight: How Responsive Are Top Earners to Tax Rates?

Authors: Arun Advani (University of Warwick), César Poux (LSE), Andy Summers (LSE)

This paper uses confidential administrative data accessed within HMRC's secure data facility. Results are in the process of being cleared, so we are not able to disclose the figures yet. A version of the paper including results will be available before the time of the conference.

Short abstract
Top earners contribute to a large share of economic output and fiscal revenue. While there is evidence of migration responses to top tax rates, two important questions remain. First, what the extent of the phenomenon is outside of specific groups and second, how much of a constraint it poses for policy making. We use UK administrative data and leverage two major top tax rate reforms in France and the UK to evaluate how much top earners respond to general tax reforms by migrating. We show that natives do not respond to an increase in tax rates, and that while there is a significant response among migrants, it is concentrated among those who were the most likely to leave in the first place. We turn structural estimation to estimate the long term impact of tax changes on the stock of migrants among UK top earners and find that even modest responses can lead to significant stock changes in the long run.

Extended Abstract

In the UK, the top 1% of earners contribute to about a third of the total amount of personal income tax raised,[1] and their contribution to the economy extends well beyond public finance, as they account for a large part of the economic output. There is evidence that international migration constitutes a margin of response to changes in top tax rates (Kleven et al. 2020), but who responds and how much of a constraint it poses to tax authorities remains an open question. This topic is particularly important in the British context, as existing contributions typically find that foreigners are more responsive than natives to changes in tax rates (Kleven, Landais, and Saez 2013; Kleven and Schultz 2014; Akcigit, Baslandze, and Stantcheva 2016) and migrants contribute to a large and growing portion of top earners in the UK (Advani et al. Forthcoming). In this paper, we exploit two important tax reforms affecting top earners in the UK and France to determine who responds to tax reforms by migrating, and what the fiscal consequences of this are.

While we cannot disclose figures at this time, we find limited or no response for natives, and a sizeable response from the migrant population. Among migrants, the effect is entirely driven by a subset with ex-ante high probability of leaving. We also investigate the heterogeneity of responses across two important dimensions: the time spent since first arrival in the country, and by income. This analysis allows us to uncover the determinants of migration decision and the interaction with tax induced migration. We also investigate whether migratory responses

[1] https://ifs.org.uk/inequality/top-income-inequality-and-tax-policy/

for migrants in the early years after arrival should be interpreted as an intensive margin response, i.e. a decision to reduce the duration of the spell spent in the UK, or an extensive margin response, i.e. a decision to go from staying indefinitely to leaving. While these two options are similar in terms of expected evolution of the rate of emigration, they have very different implications on the medium and long terms effects on the economy and the public finance. Altogether, we find that the impact of migration response on public finance is likely to be limited.

Literature

Over the past 10 years or so, the literature on migration responses to income taxation has developed and has converged towards a consensus of very low elasticities for domestic tax payers, and moderate to large elasticities for foreigners (see Kleven et al. 2020 for a review). However, many factors besides tax systems influence residence decisions, and disentangling the different effects to pinpoint the elasticity of mobility with respect to tax rates in a general setting has proven difficult.

Quasi-experimental designs have managed to overcome some of these challenges in specific contexts. In two seminal papers Kleven, Landais, and Saez (2013) and Kleven and Schultz (2014) leverage large tax reforms targeting specific groups to estimate the mobility elasticity of high earners. Focusing on star football players in Europe, Kleven, Landais, and Saez (2013) find large stock elasticities for domestic and foreign players, at 0.2 and 1 respectively. Kleven and Schultz (2014) study a tax break targeting foreign workers and find that high earners are highly responsive to the tax change, with an implied elasticity ranging between 1.5 and 2. Advani, Burgherr, and Summers (2022) use a 2017 reform to study the out-migration of high income foreigners with a preferential tax regime in the UK and find low migration elasticities, with a central estimate of 0.26.

Another challenge is the availability of datasets allowing researchers to follow individuals across countries. Akcigit, Baslandze, and Stantcheva (2016) focus on superstar inventors, because it is possible to follow them by using international patent database. Building on Kleven, Landais, and Saez (2013), they combine panel data analysis and quasi-experimental features to find low elasticity estimates of 0.03 for domestic inventors and high estimates of around 1 for foreign inventors. In comparison, our paper explores migration responses in a much more general setting. We exploit tax reforms affecting top earners regardless of industry and occupation, allowing us to study the behavioural responses of different groups. Since our data include nationality, we can observe which countries migrant flows come from, and are likely to be going to.

We also contribute to the nascent literature on the heterogeneity of migratory responses to tax changes. This question matters because it shapes our interpretation of preferences for location evolve over time and interact with monetary factors and income (Borjas 1994). We answer the question of whether changes in tax rates impact the probability that migrants will “take root” or if makes migrants leave sooner rather than later. This question has important revenue and economic implications and so far remains unanswered. Muñoz (2021) finds that some occupations are less mobile than others, but does not distinguish between push and pull factors. By exploiting a local reform as well as a reform happening abroad, we are able to distinguish between responses to domestic and foreign shocks, and to study both the impact

on arrivals and departures. In the context of a Dutch scheme offering favourable tax treatment to foreigners, Giarola et al. (2023) find significant heterogeneity of response between highly mobile workers and those who have established roots in the country. Similarly, Advani, Burgherr, and Summers (2022) find that people with a lower footprint in the UK are more sensitive to tax hikes. Our setting allows us to explore heterogeneity across time spent since arrival in the country and income, providing the first heterogeneity measure in a general setting.

Finally, we contribute to the literature on how migration constrains policy making. There is a large literature exploring this question for internal migration, in particular how migration responses constrain subnational authorities. Agrawal and Foremny (2019) show that Spanish top earners move between provinces to avoid taxation, while Young et al. (2016); Rauh and Shyu (2019); Rauh (2022) and Agrawal and Tester (2023) explore this question in the context of interstate competition in the US. Visa considerations, language and cultural barriers represent additional barriers to international migration when compared to intranational migration, which means that elasticities are likely to be very different. Many of the existing studies of international migration responses to tax look at the effect of policies targeting international migrants, often designed with the particular aim of encouraging those migrants to locate in a country (Kleven and Schultz 2014; Timm, Giuliodori, and Muller 2022; Bassetto and Ippedico 2023; Giarola et al. 2023), or focusing on specific groups (Kleven, Landais, and Saez 2013; Akcigit, Baslandze, and Stantcheva 2016). These are sub-populations of all the taxpayers affected by wholesale tax changes, and the strong heterogeneity in results means that shouldn't expect to directly carry over to the policy parameter for general tax reform. By exploiting two general reforms affecting top earners we are able to quantify the short and long-term revenue effects from migration response of top tax earners.

Empirical setting and reforms

We exploit two reforms affecting top earners in the UK and in France. First, we look at the increase of the top tax rate in the UK in 2010. Second, we consider a wide-ranging reform affecting all top earners in France in 2013. We study the impact of both of these reforms in a difference in difference setting.

The top marginal rate reform of 2010 in the UK

In the UK, income, which includes labour and capital income but excludes capital gains, is subject to a progressive personal income tax (PIT) schedule. In 2010, all income above the personal allowance (£6,500) was subject to a 'basic rate' of 20%, with income over £37,400 facing a marginal 'higher rate' of 40%. Additionally, National Insurance Contributions (NICs) are paid by the employer as a fraction of the gross-wage.

The 2010 reforms saw the introduction of new tax rate band for earners above £150,000 annually. Taxpayers affected by the reform saw their marginal rate go from 40% in the tax year 2009/2010 to 50% in 2010/2011. The previous reform affecting top rates was more then 20 years prior, when the 60%, 55% and 50% bands were abolished. The reforms represents a large change affecting about 1% of taxpayers, with a significant increase both in the marginal

rate, and the average rate, in particular for those with income significantly above the threshold. Consequently, this reform appears to be an excellent opportunity to study the behavioural response of top earners in the UK.

Our analysis of the 50p reform centres on a control group made of individuals earning £120,000- 135,000 a year contemporaneously, and a treatment group made of individuals earning £165,000- £225,000.

The 2013 Hollande Reforms in France

Income in France is subject to a progressive PIT schedule. In 2011, before the reform considered, the PIT tax base included all earned income but excluded dividends and capital gains, taxed at a flat rate. After his election in April 2012, François Hollande introduced an important set of reforms that brought large changes to both rates and base of the personal income tax. There were changes in the rates, in particular at the top of the distribution. Tax thresholds were frozen, and an additional rate at 45% up from 41% for earners over €150,000. An additional 'exceptional contribution' for individuals with labour income over €1,000,000 increased their rate by a further 18pp for a scheduled period of two years.
There were also important changes in the tax base. Most importantly, dividend income went from being taxed at a flat rate of 21% to being part of the PIT tax base. Other types of capital income were also brought into the tax base, with the effect of increasing the rate on capital income, and increasing the total tax base for individuals with capital income, therefore increasing the rate on labour income. Rules on tax deductions were also significantly tightened, in particular for top earners. Finally, the tax rate on capital gains was increased from 19% to 24% and scheduled to enter the PIT base in 2014. These reforms were wide-ranging and particularly affected earners at the top of the distribution. Analysis conducted by the Institute for Public Policy in France showed that the effective rate increased by 10% to 20% for individuals in the top 1% of earners.

We study the impact of the Hollande PIT reforms in 2012-2013 by comparing high earning French migrants to a control group composed of Germany, Belgium and the Netherlands. These countries have been chosen for having similar economies, and while their cumulative population is much larger, they send a very similar number of migrants to the UK every year. All of these countries are EU members, and therefore face similar immigration regulations, with free movement of individuals for the entire period considered. None of the countries in the control group experienced tax changes affecting top earners during the period considered (2006-2017).

Data

We study the population of UK taxpayers at the top of the income distribution using administrative data from the UK tax authority (HMRC). Our population come from merging two datasets which together cover the universe of high-income taxpayers, and also a 10% sample of lower income individuals. We observe these groups from 2002 to 2018. High income taxpayers, with annual income over £100,000, are required to file a personal tax return known as self-assessment (SA). Individuals with non-standard tax affairs, including

those with more than de minimis levels of investment income (more than £1000), those who are self-employed, and most earners entering or leaving the country who claim relief to avoid double taxation, are also required to file. Once an individual is required to file, they remain required to file even if they no longer meet the filing criteria. This ensures a very low rate of attrition for taxpayers who remain in the country. We supplement the self-assessment data with a 10% sample of 'Pay-As-You-Earn' (PAYE) records for measurement of migration purposes. These are third-party reported records on employment income and pensions, submitted by the employer or pension provider.

References

Advani, Arun, David Burgherr, and Andy Summers. 2022. 'Taxation and Migration by the Super-Rich', September.

Advani, Arun, Felix Koenig, Lorenzo Pessina, and Andy Summers. Forthcoming. 'Immigration and the Top 1 Percent'. *Review of Economics and Statistics*.

Agrawal, David, and Dirk Foremny. 2019. 'Relocation of the Rich: Migration in Response to Top Tax Rate Changes from Spanish Reforms'. *The Review of Economics and Statistics* 101 (2): 214–32.

Agrawal, David R., and Kenneth Tester. 2023. 'State Taxation of Nonresident Income and the Location of Work'. SSRN Scholarly Paper. Rochester, NY.

Akcigit, Ufuk, Salomé Baslandze, and Stefanie Stantcheva. 2016. 'Taxation and the International Mobility of Inventors'. *American Economic Review* 106 (10): 2930–81.

Bassetto, Jacopo, and Giuseppe Ippedico. 2023. 'Can Tax Incentives Bring Brains Back? Returnees Tax Schemes and High-Skilled Migration in Italy'. SSRN Scholarly Paper. Rochester, NY. https://doi.org/10.2139/ssrn.4359376.

Borjas, George J. 1994. 'The Economics of Immigration'. *Journal of Economic Literature* 32

Giarola, José Victor C, Olivier Marie, Frank Cörvers, and Hans Schmeets. 2023. 'Should I Stay or Should I Go? Dutch Evidence on Tax Induced (Return) Migration'.

Kleven, Henrik Jacobsen, Camille Landais, and Emmanuel Saez. 2013. 'Taxation and International Migration of Superstars: Evidence from the European Football Market'. *American Economic Review* 103 (5): 1892–1924.

Kleven, Henrik Jacobsen, and Esben Anton Schultz. 2014. 'Estimating Taxable Income Responses Using Danish Tax Reforms'. *American Economic Journal: Economic Policy* 6

Kleven, Henrik, Camille Landais, Mathilde Muñoz, and Stefanie Stantcheva. 2020. 'Taxation and Migration: Evidence and Policy Implications'. *Journal of Economic Perspectives* 34 (2): 119–42. https://doi.org/10.1257/jep.34.2.119.

Muñoz, Mathilde. 2021. 'Do European Top Earners React to Labour Taxation Through Migration?' PSE Working Papers 2021–35. Paris.

Rauh, Joshua D. 2022. 'Taxes, Revenues, and Net Migration in California'. SSRN Scholarly Paper. Rochester, NY. https://doi.org/10.2139/ssrn.4037764.

Rauh, Joshua, and Ryan J. Shyu. 2019. 'Behavioral Responses to State Income Taxation of High Earners: Evidence from California'. Working Paper. Working Paper Series. National Bureau of Economic Research. https://doi.org/10.3386/w26349.

Timm, Lisa, Massimo Giuliodori, and Paul Muller. 2022. 'Tax Incentives for High Skilled Migrants: Evidence from a Preferential Tax Scheme in the Netherlands'. SSRN Scholarly Paper. Rochester, NY. https://doi.org/10.2139/ssrn.4232711.

Young, Cristobal, Charles Varner, Ithai Z. Lurie, and Richard Prisinzano. 2016. 'Millionaire Migration and Taxation of the Elite: Evidence from Administrative Data'. *American Sociological Review* 81 (3): 421–46. https://doi.org/10.1177/0003122416639625.