Millionaire Migration and the Demography of the Elite

Implications for American Tax Policy

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Abstract:

Do millionaires migrate to avoid high state income taxes? Many U.S. states have passed millionaire taxes in recent years, sparking concerns about tax flight among the wealthy. Millionaire migration can drain state revenues and undermine state-level redistributive social policies. To study this, we draw on IRS data on the tax records filed by all million-dollar income earners in the United States between 1999 and 2011, tracking the state from which millionaires file their taxes. The data contains 43 million tax records, representing 3.7 million unique tax filers, and provides a census-scale panel data on top income-earners. We advance three core analyses: (1) state-to-state migration of millionaires over the long-term, (2) decomposition of millionaire population dynamics into the "birth rate", "life expectancy", and migration of millionaire incomes, and (3) a sharply-focused discontinuity analysis of millionaire population along the borders of states. This will provide powerful evidence on the extent of millionaire tax flight, and on the capacity that states have to affect the distribution of income through tax policy.

Note: in this submission, we outline our data and planned analyses. Results are in production and will be presented at the conference.

Introduction

Do millionaires migrate to avoid state income taxes? We develop a new framework and critical data set for demographic analysis of the elite, and apply it to understanding elite response to and influence on tax policy. Elites are difficult to study using conventional data sources (for example, due to top-coding of incomes). However, they must file their taxes – providing census-scale, panel data on how much they earn and where they live. We draw on unique access to administrative tax records from the IRS on all individuals who earned $1 million or more in annual income ("millionaires") during 1999-2011.

We focus firstly on millionaire migration in response to progressive state income taxes. However, we extend this to consider broader elite demographic events captured by the millionaire "birth rate" (the domestic production of millionaires), and the millionaire "life expectancy" (the duration of million-dollar earnings over time). Because demographic events are often correlated (e.g., births create the potential for migrations), we analyze the interconnection of millionaire population dynamics.

The key motivation for this research is that nine U.S. states have passed "millionaire taxes" in recent years, representing a new turn towards progressivity in state taxes, and sparking concerns about tax flight among the wealthy. Millionaire taxes provide revenue to support state public goods and social services, and moderate the growing inequality in market incomes. However, millionaire migration – the flight of the largest taxpayers – can drain state revenues and undermine state-level redistributive social policies (Feldstein and Wrobel 1997). The out-sized impact of millionaire migration on state tax revenues may be one mechanism by which elites exert disproportionate influence over state policy (Bartels 2009; Gilens 2012). Indeed, the threat

of migration is potentially powerful leverage in an "exit versus voice" political negotiation over tax rates (Carruthers and Lamoreaux 2013). Income taxation is one of the most fundamental ways in which the state intervenes in the market distribution of income. This study offers an important look into the social consequences of progressive taxation.

The existing evidence on elite mobility and the likelihood of tax flight among millionaires is limited. In Europe, economists Kleven, Landais, and Saez (2013) study the migration of elite European soccer players, finding a gravitational pull towards teams in low-tax countries. In the United States, our recent research examines a series of "natural experiments" in taxing millionaires in New Jersey and California (Young and Varner 2011; Varner and Young 2012). Our studies use micro-data from these state's income tax records to measure millionaire migration before and after changes in the top tax rate. We estimate that increases in the top tax rate had little effect on millionaire migration, raised substantial revenues (on the order of $1 billion in both states), and modestly reduced income inequality.[1]

We are now developing new methodology for all 50 states and the District of Columbia. We have unique access to IRS data on the tax returns filed by all million-dollar income earners in the United States between 1999 and 2011, tracking the state (or county) from which millionaires file their taxes. This provides an ideal combination of the broad-geography, multi-state lens of

[1] In New Jersey, we did find evidence of tax-induced migration among retirees that have large investment income (stock market earnings). The states of Oregon and Utah are currently replicating our methods to study elite migration in their own states, which will usefully add to our existing evidence. However, a key limitation of this state-level research strategy is that it cannot be applied to the nine states that do not have an income tax, such as Florida, Texas, and Nevada. Because these states do not collect state income taxes, the required data set does not exist. This is problematic as these "tax haven" states are particularly relevant to understanding tax migration. The second limitation is that while state tax records can identify migration, they do not show what state out-migrants moved to, or which state in-migrants came from. This leaves it unknown whether migrants chose destinations that actually have lower tax rates than the states from which they migrated.

Kleven, Landais, and Saez (2013), and the scaled-up administrative data of Young and Varner (2011). Our data contains 43 million tax records, representing 12 years of panel data on 3.7 million unique tax filers, and provides census-scale evidence on the top income-earners in America.

Below, we outline three planned analyses for a comprehensive understanding of how top tax rates affect millionaire demography.

1. State-to-State Millionaire Migration Matrix

First, we will use log-linear models to study millionaire migration flows between all states and the District of Columbia over 12 years.[2] Looking at every pair of states (51 x 51), to what extent does the difference in tax rates drive migration flows? If a state raised its millionaire tax rate by 1 point, what percent of millionaires would migrate to a different state?

There are longstanding differences in state tax rates. Florida, Texas, and Washington state, for example, have never had an income tax, while California, Oregon, and New York have long had progressive income taxes. Is there a general pattern of millionaires moving from high-tax to low-tax states? In California, are there net flows into states like Nevada or Texas? Do millionaires in Oregon tend to move to neighboring Washington – switching from Oregon's progressive income tax (high rates on the rich) for Washington's regressive sales tax system (with low rates on the rich)? Even if the annual migration flows are small, aggregate migration over 12 years should clearly document any pattern of tax-induced migration.

[2] Similar models have been applied to census data by Herting, Grusky, and Rompaey (1997) , Lin and Xie (1998), and to international migration by Beine, Docquier, and Ozden (2011). Silva and Tenreyo (2006) provide an excellent discussion of the core model.

A key advantage is that we can use all cross-state migration flows, rather than policy changes alone, to identify tax-induced migration. This strategy tests not simply whether migration rises after a tax increase, but more broadly if there is a systematic, long-term pattern of migration *from* high-tax *to* low-tax states. This is especially valuable if migration responds gradually to tax changes.

1.1 Basic Model

To analyze these data, we draw on a gravity model. The number of millionaire migrants (Mig_{ij}) from state i (origin) to state j (destination) is a function of the size of the base populations in each state (Pop_i , Pop_j), the distance between the states ($Distance_{ij}$), and a variable indicating if the states $\{i , j\}$ have a shared border ($Contiguity_{ij}$). These are the core elements that define the basic laws of gravity for interstate migration (Silva and Tenreyro 2006). To this core model we add the difference in top income tax rates between each state pair ($Tax\_Difference_{ij}$). Finally, we specify this as a log-linear model, taking logs of the count variables, and estimating either with OLS or Poisson:

$$\log Mig_{ij} = \alpha + \beta_1 \log Pop_i + \beta_2 \log Pop_j + \beta_3 \log Distance_{ij} + \beta_4 Contiguity_{ij} + \beta_5 Tax\_Difference_{ij} + \varepsilon_{ij} \qquad (1)$$

The coefficients from the log-linear model give the semi-elasticity of migration counts with respect to the tax rate – the percent of the millionaire population that migrates for each percentage point difference in the tax rates.[3]

[3] We can also calibrate the effect of tax differences relative to differences in climate (eg, winter temperatures) and other amenities between states. For example, how does tax migration compare to winter temperature migration? If a state has a one-percentage point higher income tax, how many degrees of colder winter temperature would produce the same level of out-migration?

2. Millionaire "Birth Rate" and "Life Expectancy"

In our income tax data, people are defined as millionaires based on their annual income. As such, millionaires may not only move between states, but also exit millionaire status due to a drop in income, and non-millionaires may raise their incomes high enough to enter millionaire status. Migration is only one aspect in the demography of this income-defined population.

In any demographic analysis, population change stems not only from migration, but also from a population's birth rate and life expectancy. For this income-defined population, the millionaire "birth rate" is a state's domestic production of millionaires – the rate of individuals growing into the millionaire income bracket. Millionaire "life expectancy," likewise, is the number of years that individuals sustain million-dollar annual incomes. These two factors have been largely neglected in the literature and policy debates over millionaire taxes, but they are key drivers of the overall millionaire population. Indeed, in New Jersey and California, we found that migration accounted for no more than three percent of annual changes in the millionaire population. Moreover, because demographic events are often correlated, millionaire migration should not be considered in isolation from the millionaire birth rate and the millionaire life expectancy.

Suppose, for example, that migration tends to originate from the states that produce the most millionaires. This could occur if when people become millionaires, five percent of the new millionaires exercise a pre-existing desire to move somewhere else. This would mean that states with high millionaire birth rates also have high millionaire migration. This is what we found in in New Jersey. While New Jersey had a net out-migration of millionaires in each year during 2000-07, it also had a rapidly growing millionaire population, rising by nearly 40 percent over the period of analysis. In other words, New Jersey has both net out-migration and a high birth rate

(and, very likely, a high life expectancy). A simple look at migration suggests that the state is being drained of its millionaire tax base, while a broader population focus shows the opposite.

Thus, it is important for social scientists and policy makers to understand the broader demography of the one percent. We suspect that migration is not the most important determinant of millionaire population dynamics, and migration may well be correlated with both the birth rate and life expectancy of millionaires.

Thus, in our second analysis, we will measure state-level millionaire birth rates and life expectancies, and examine their inter-relationships with migration. How is millionaire migration correlated with the millionaire birth rate and life expectancy? Do tax rates affect these broader aspects of millionaire demography? [4]

3. Millionaire Population along the Borders of States

Finally, we will focus on millionaire population in focused regions where tax differences should matter most: contiguous counties on opposite sides of a state border. These areas enclose the sharpest tax policy discontinuities in the county. By focusing on population, the analysis incorporates all demographic events, allowing any combination of the birth rate, life expectancy, and migration of millionaires to respond to tax differentials. This helps to control for geographic differences in amenities as well as social and business ties to place (Dahl and Sorenson 2010) that can be hard to accurately capture at the state level. A similar research strategy has been used to study the effect of right-to-work laws on the location of manufacturing (Holmes 1998; see also

[4] The millionaire birth rate and life expectancy are foundationally driven by economic opportunities and resources in a state. However, they may also be due in part to incentives to report or conceal income. In particular, the longer one is subject to millionaire taxes, the more they may find ways to lower their reported income and avoid being subject to the tax (and thus avoid being counted as a millionaire) (Slemrod – hierarchy of tax responses).

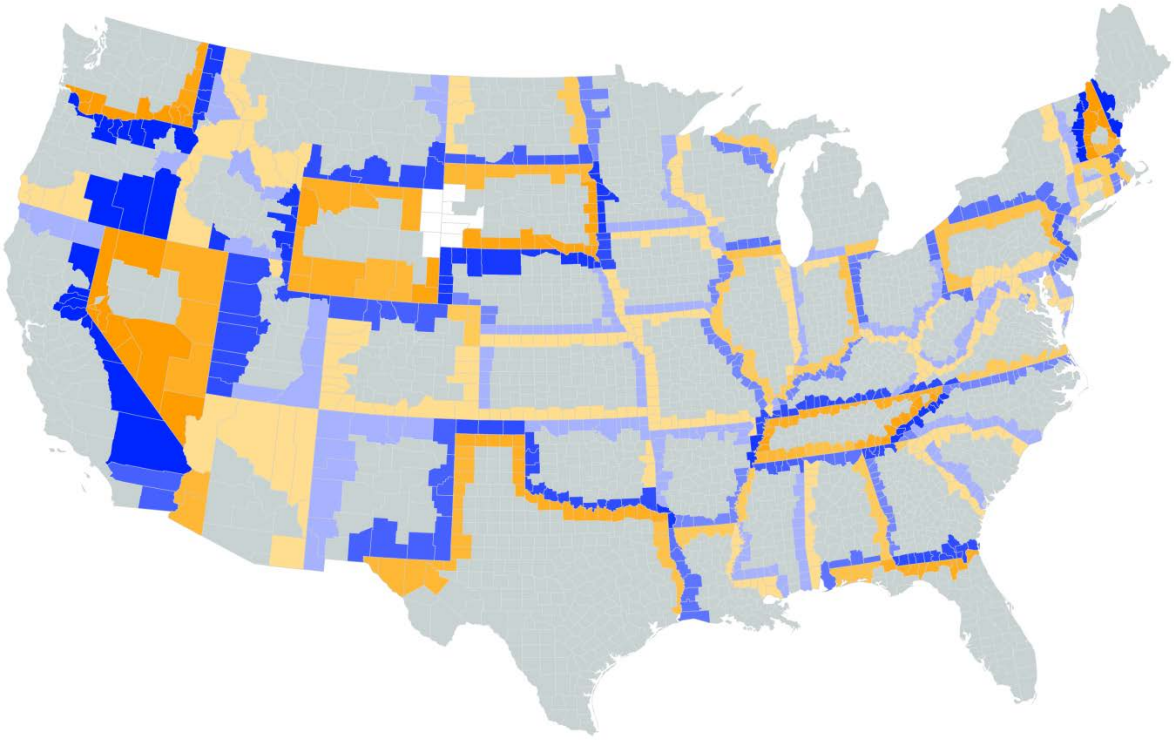
Rao, Yue, and Ingram 2011), and the effect of minimum wage laws on employment (Dube, Lester, and Reich 2010). Among contiguous counties that lie at the border of two states, do millionaires tend to cluster on the low-tax side of the border?

Border regions provide a quasi-experimental laboratory in which there are sharp geographic discontinuities in top tax rates, and few natural barriers to migration. In the border region, many of the geographic, cultural, and economic differences between states are minimized. Border regions mostly span plausible commuting distances, so that family, social, and business ties can be maintained. Border regions narrow in on a policy laboratory that is *most likely* to show tangible policy effects – it is an attempt to create a frictionless world, or a kind of particle accelerator for migration. The policy effect at the border is almost certainly larger than the policy effect away from the border. These border regions do not give the *average* treatment effect, but rather something closer to a *maximum* treatment effect.

To keep the analysis relatively simple, we pool counties within each state along the border region. This yields 107 border regions, of which 106 have a non-zero difference in the top income tax rate. Figure 1 maps the counties in the analysis; blue counties are those on the higher-tax side of the state border, while orange counties are on the low-tax side. Darker shading indicates larger cross-border tax differences. The South Dakota – Wyoming border region is the only place in the country that does not have a tax difference at the border (these counties are in white in Figure 1). The largest tax differences lie along the California – Nevada border (9.2), the Oregon – Washington border (8.9), the New Hampshire-Vermont border (8.5), and the North Carolina-Tennessee border (7.9).

Overall, the mean difference in the tax rates across all border regions is 3.3 percentage points, with a range of 0 to 9.1. Thus, we frequently see tax differences within small geographic areas that are relatively large – at least relative to the scale of tax changes that tend to be debated at the state level (2 to 3 percentage points). Over the 16 years of data (1996-2011), this empirical strategy offers 1,712 border-region-years for analysis.

Figure 1. Border Counties and Tax Differences in the United States.



Notes: Blue shading shows the counties on the higher-tax side of the border, while orange shows the counties on the low-tax side of the border. Counties in grey are not along a state border and not included in the analysis. Counties in white have exactly the same state tax rate on each side of the border. Darker shading indicates larger tax differentials. Tax rates estimated in Taxsim for those earning $1.7 million in annual income, for the years 1996-2011.

3.1 Model

Our outcome variable is the difference in log millionaire population between contiguous border regions ($\Delta \log M_{ijt}$) :

$$\Delta \log M_{ijt} \;:\; \log M_{region\,it} - \log M_{region\,jt}\;, \qquad \forall\, i \neq j$$

This simply compares the difference in the size of the millionaire population on either side of the border in each year *t*. We expect this difference to be influenced by the difference in overall population ($\Delta \log pop_{ijt}$), and potentially by the difference in tax rates (Δtax_{ijt}) between the regions. We structure the data so that region *i* is the high-tax side of the border, so that the tax difference $\{i,j\}$is always positive. Our basic border-region level regression model is $\Delta \log M\_t$

$$\Delta \log M_{ijt} = \alpha + \beta_1 \Delta tax_{ijt} + \beta_2 \Delta \log pop_{ijt} + \gamma_{ijt} \qquad (1)$$

We can also look specifically at *changes* in the tax difference over time, by adding in fixed border region effects.

$$\Delta \log M_{ijt} = \alpha + \beta_1 \Delta tax_{ijt} + \beta_2 \Delta \log pop_{ijt} + \theta_{ij} + \gamma_{ijt} \qquad (2)$$

This may be considered to show the *short-run* or immediate effects of tax changes, while the cross-sectional estimates show the long-run effect of established tax differences (eg, Baltagi and Griffen 1984).[5] Using the hybrid fixed effects model (Allison 2009), we can estimate the short- and long-run effects in a single model. To do this, we could decompose the tax difference into (1) the average over all years (the cross-sectional difference), and the difference from the mean tax difference over time (the fixed effect or "within border region" difference).

$$\Delta \log M_{ijt} = \alpha + \beta_1 \overline{\Delta tax_{ij}} + \beta_2 \Delta\Delta tax_{ijt} + \beta_3 \Delta \log pop_{ijt} + \gamma_{ijt} \qquad (3)$$

[5] This is a conventional interpretation when there are expected to be differences in short- versus long-run responses – and migration might reasonably be considered a slow-response outcome. Of course, the fixed effects model also control for time-invariant unobserved variables, and is therefore more robust to problems of unobserved heterogeneity.

It is worth re-iterating that any overall population differences may be due to migration, millionaire birth rate, or millionaire life expectancy. This analysis combines all three sources of demographic change, and tests their overall sensitivity to top tax rates.

Among neighboring counties, what share of the millionaire population is on the low-tax side of the border? How does the millionaire population evolve when neighboring counties have different and changing millionaire tax rates?

Conclusion

Elite demography is an underdeveloped area, largely due to the difficulty of obtaining comprehensive data on the very highest income earners. Previous analyses have either used narrow segments of the elite (European soccer players) or narrow geographies (New Jersey and California). We can now develop compelling analyses of millionaire migration and elite demography using 13 years of panel data on *all* top income-earners in every region of the United States. We advance three core analyses: (1) state-to-state migration of millionaires over the long-term, (2) decompose millionaire population dynamics into the "birth rate", "life expectancy", and migration of millionaire incomes, and (3) a sharply-focused discontinuity analysis of millionaire population along the borders of states. This will provide powerful evidence on the extent of millionaire tax flight, and on the capacity that states have to cultivate unique policy solutions to problems of inequality. With these new estimates on the migration and population responsiveness to top tax rates, we can calculate the revenue cost of millionaire tax flight, infer how much tax rates reduce inequality in a state, and estimate optimal state tax rates in light of the observed demography of the elite.

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