THE IMPACT OF TAXES ON MIGRATION IN NEW ENGLAND

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EXECUTIVE SUMMARY [1]

The impact of state and local taxes on migration is a perennial concern. When generating new revenues for public services is suggested, the prospect of people fleeing the state is inevitably raised. The available evidence, however, suggests that the impact of taxes on cross-state migration decisions is weak. There are many reasons households do not flee from a state when taxes are increased, including the fact that they value the public services financed by taxes, the cost of relocating to a different state (both financially and psychologically) is quite high, and the potential gains from moving are often small. The main reasons for moving to a different state are employment, family-related matters, and education. Taxes account for little of the migration from New England.

This paper describes migration trends for the New England states, reviews key findings from the existing research on tax-induced migration, and presents new findings from an analysis of IRS migration data.

A summary of findings from the study include:

- While residential relocation is quite common in the US, cross-state migration is much less than might be expected – more than half of American adults have never lived in any state other than where they were born, and just 3 percent of Americans move across state lines in a given year for any reason.

- The rate of people leaving New England is much lower than the national average. The region experiences lower levels of net migration (in-migration less out-migration) than most other states because people are less likely to move to New England.
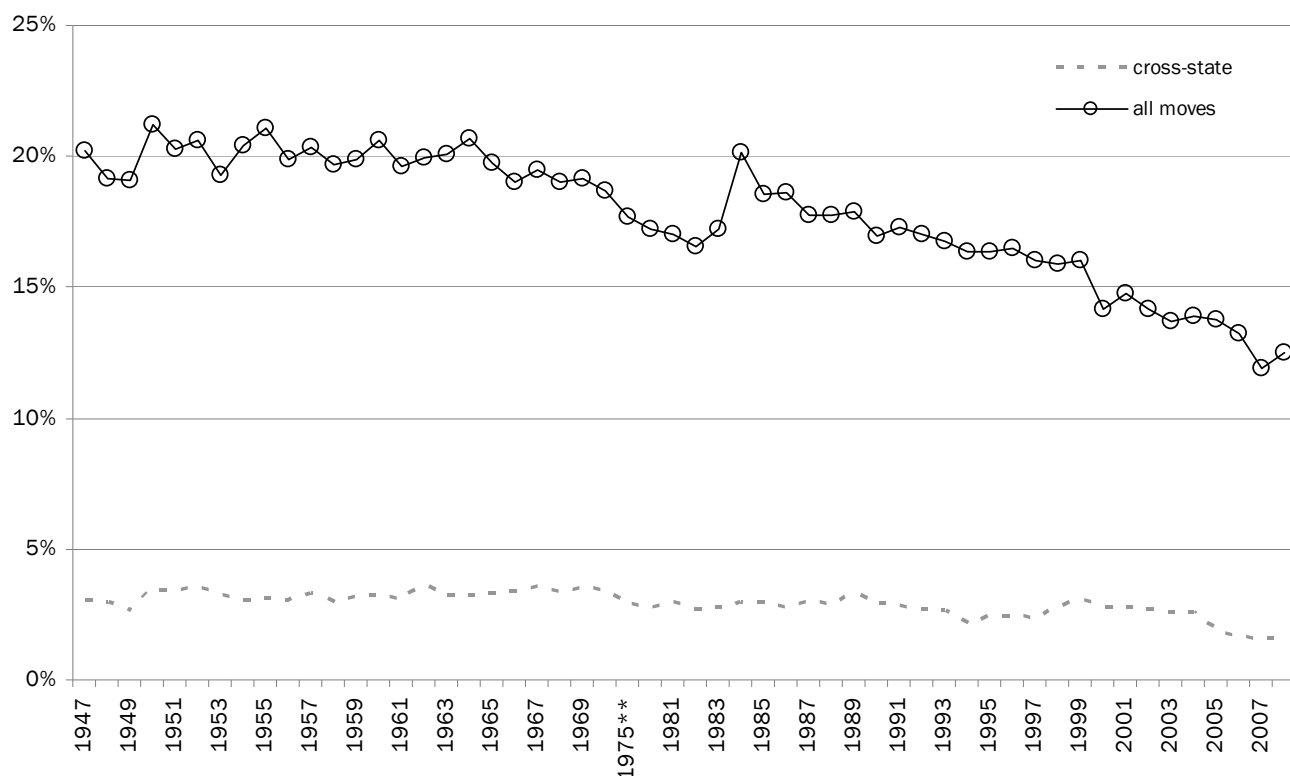
- The vast majority of households that move to a different county or state indicate employment, family, and housing-related matters are the main reason behind their move.

- The limited available research on the impact of taxes on cross-state migration suggests that taxes do not play a very important role.

- Results of a new statistical analysis of migration suggest there is no simple impact of taxes on migration. Economic conditions, property crime rates, and higher education enrollment all impact migration in anticipated ways. Higher taxes in the state of origin, however, diminish out-migration from the state. Higher taxes in destination states also diminish migration to those states. Overall the results suggest that taxes do not cause out-migration, but do influence on the choice of destination for some migrating households.

- States raising taxes will see somewhat fewer migrants choose their state as a destination, but offset and reverse this impact when they use increased tax revenues in ways that attract people and create jobs. Because the migration impacts of unemployment are so much greater than for taxes, when states use additional revenue to create jobs and lower unemployment, the net effect is to decrease out-migration and attract more people to the state.

I. MIGRATION LEVELS, TRENDS & TYPES

Between 2008 and 2009, 13 percent of US households changed residence (Figure 1). This rate of residential relocation is much lower than most of the post-war period in America. From the 1940s to the 1960s, roughly one fifth of households changed residences each year. Since the early 1980s, though, the rate of residential relocation has declined steadily.

Note: ** The migration question is not present in the CPS data between 1971 and 1974 or between 1976 and 1979.

TABLE 1. TYPE OF MOVE, 2008 TO 2009

Share Undertaking any Residential Relocation (All ages):	12.5%
Type of Relocation:	
staying in same county	67%
to different county in same state	17%
to different state	13%
abroad	3%

Source: US Census Bureau.

Most of these moves are also only over a very short geographic distance (Table 1). Two-thirds of all moves in the most recent year are within the same county. Another 17 percent of all moves are to a different county, but within the same state. Only 13 percent of all moves result in the person relocating to another state.

Between 2008 and 2009, only 1.6 percent of Americans moved across state lines (Figure 1). This level of cross-state migration is approximately half of the average rate between 1947 and 2009 (2.9 percent) and is also lower than the average rate for the last decade (2.3 percent).[2]

Not only are the yearly rates of cross-state migration fairly low, but a surprisingly large number of American adults (57 percent) has never lived anywhere except the state where they were born (PEW, 2008). Two-thirds of American adults spend most of their working lives in the state where they lived as a child, and nearly half

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[2] The apparent decline in cross-state migration since 2005 seen in the CPS data is largely due to technical changes in the how the Census Bureau imputes missing values (Kaplan and Schulhofer-Wohl, 2011.) The longer-term and more gradual decline in residential mobility, and to some extent, cross-state migration, however, is due to some combination of an aging population, as older households are least geographically or residentially mobile, and other factors which are decreasing mobility across age groups.

spend their careers in their childhood metropolitan region (Bartik, 2009).

Migration data at the state-level are also produced by the Internal Revenue Service (IRS). The IRS tax statistics are based on federal income tax returns, and suggest a somewhat higher rate of cross-state migration, with 3.1 percent of individuals (exemptions) moving to a different state between 2005 and 2006, compared to 2.0 percent for that year in the Census data (Figure 2, Panel A). The IRS data, however, also show that the rate of cross-state migration has declined in recent decades, and that migration out of New England is lower than the rest of the country. Between 2005 and 2006, 2.7 percent of Connecticut residents left for another state, and 2.5 percent of Massachusetts residents left for another state. Out-migration has only consistently been higher than the national average in New Hampshire. In recent years, out-migration has been greater than the national average in Rhode Island and is equivalent to the national average in Vermont.

The rate at which residents leave New England for other states is lower than the national average, but the in-migration rate from other states to New England is also lower (Figure 2, Panel B).[3] The number of residents moving into the state between 2005 and 2006 as a share of total residents was 2.2 percent in Connecticut
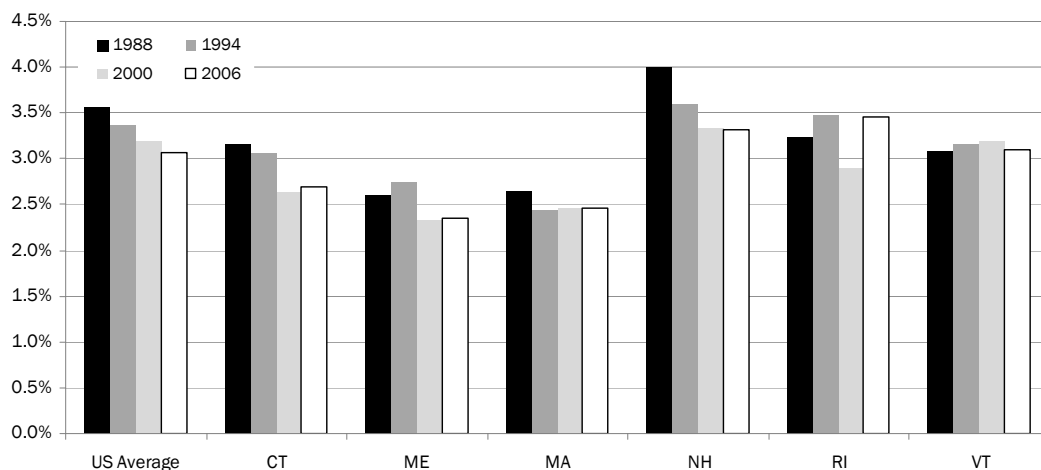
and 1.9 percent in Massachusetts. As with out-migration, the in-migration rate for New Hampshire has also typically been greater than the national average, although, the gap has faded over time, and by 2005 the state's in-migration rate was identical to the rest of the country.

With the rates of out-migration from New England exceeding the rates of in-migration to New England, the region as a whole tends to experience net population loss due to migration (Figure 2, Panel C). Between 1988 and 2006, net migration reduced the populations of Connecticut, Massachusetts, and Rhode Island. In most of those years net migration increased the populations of Maine, New Hampshire, and Vermont. In each of these states, however, in-migration has declined faster than out-migration, so that by 2006 net migration had turned negative in New Hampshire and Vermont and was barely positive in Maine, at just 0.1 percent.

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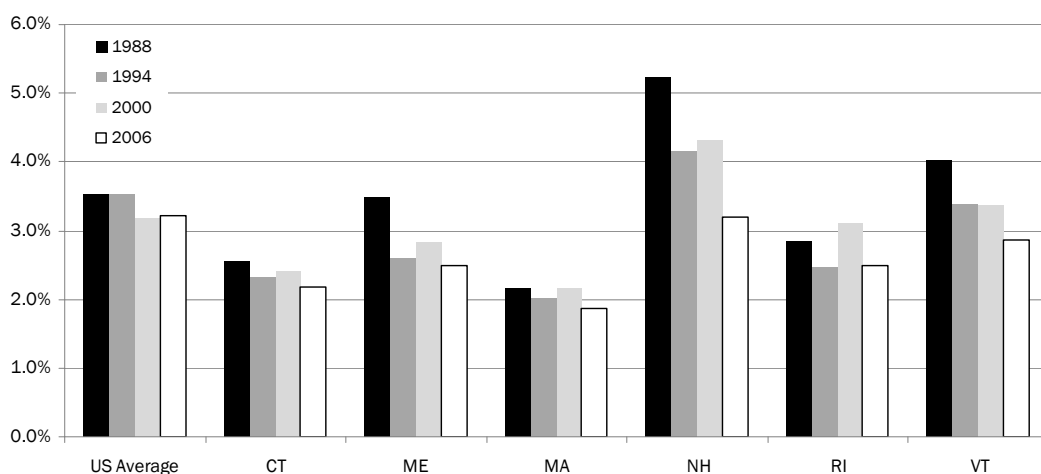
[3] After excluding movers abroad, at the national level the total number of movers out of states is exactly equal to the number of movers into states. There is a very small difference in the national average out-migration and in-migration rates due to differences in the size of the total populations of states sending and receiving migrants. In 1994 and 2006 there is a 0.1 percent difference in the national average in- and out-migration rates because cross-state migrants were somewhat more likely to leave larger states for smaller states.

FIGURE 2. MIGRATION RATE BY NEW ENGLAND STATE AND DIRECTION
OF MIGRATION: IRS TAX STATISTICS DATA, SELECTED YEARS
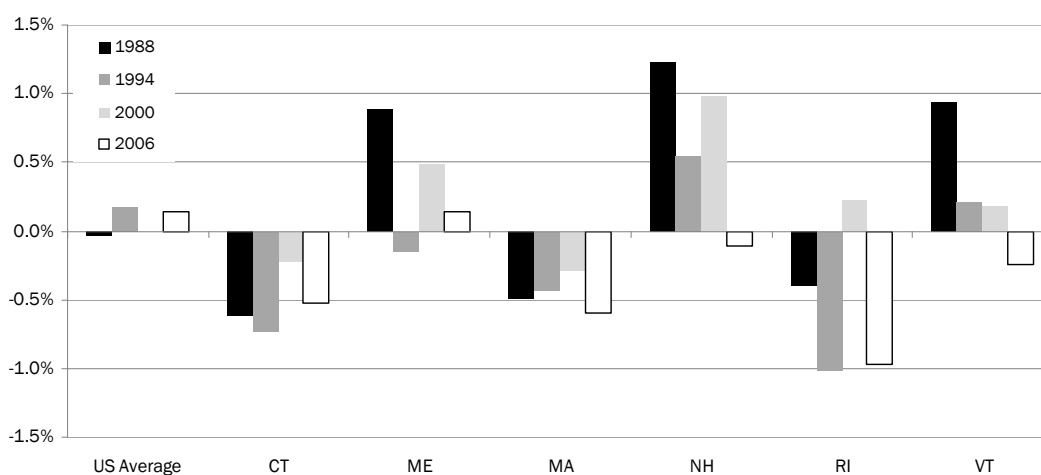
Panel A. Out-migration rate

Panel B. In-migration rate

Panel C. Net migration rate

Note: Migration rates based on exemptions claimed on federal income tax returns. "Out" and "In" migration are number of exemptions leaving or coming to the state divided by the total number of exemptions in the state. Net migration is in-migration less out-migration.

II. REASONS CITED FOR MOVING AND STAYING

Among those individuals and household that decide to relocate to a different county or a different state, the primary reasons cited are for jobs, housing, and family-related matters. While young movers commonly relocate to attend college (8 percent of all moves for 16 to 24 year olds), nearly 9 in 10 working-age adults (30 to 64) relocate for jobs, housing, and family-related reasons (Table 2). Employment-related reasons, including loss of a job, getting a new job, or wanting a shorter commute, account for more than one-third of all moves to a different county.[4]

TABLE 2. REASONS FOR MOVING (30 TO 64 YEAR OLDS), 2008 TO 2009

Main Reasons for All Between-County Moves	
Job-related	36%
Family-related	22%
Housing-related	28%
Quality of life	8%
Other	7%

* "Job-related" moves include for a new job, easier commute, or lost job. "Family-related" moves include for marriage, divorce, or other family reasons. "Housing-related" moves include for a better/newer home, cheaper housing, to "own not rent," establish own household, and other housing reasons. "Quality of life" moves include for better neighborhood, less crime, climate, and health reasons. "Other" reasons for moving include attending or leaving college, retirement, natural disaster, and "other" for unstated reasons.

Source: US Census Bureau.

A recent PEW survey of American households echoes the importance of basic economic factors as being the primary reasons for moving, with 44 percent identifying "job or business" as a major reason. Interestingly, the PEW study also identifies adults who have remained in their hometown. These "stayers" represent more than one-third of American adults (37 percent), and their reasons for staying look very different than the reasons motivating the "movers" to move. Three quarters of "stayers" cite "family ties" as a major reason they have not ever lived anywhere outside of their hometown. The top five reasons for staying also include connections to friends, a belief that it is a good place to raise children, and a "sense of belonging." "Job or business" ranks sixth among major reasons for staying.

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[4] Migrating households have the option of listing taxes under the "other" category. In 2009, 5.2 percent of households identified some "other" reason as the primary factor in their move. In addition, the survey only records one primary factor, and it is possible that taxes could influence migration decisions at a secondary or tertiary level.

III. EXISTING RESEARCH ON TAXES AND MIGRATION

Although taxes are not cited as motivating factors by moving households, policy makers and researchers are nevertheless interested in the impact of taxes on migration. There are a number of studies that explore the impacts of taxes on the migration behavior of households in the United States.[5] These papers generally show that taxes have relatively little impact on cross-state migration.

Bakija and Slemrod (2004) use 18 years of data on the number of federal estate tax returns filed, by wealth category by state, and a "difference-in-differences" approach to study the impacts of state-level estate, inheritance, and gift (EIG) taxes. They find that states with EIG taxes experience fewer federal estate tax returns. Migration is not measured directly, but the decrease in the number of estate tax filings is suggestive of location changes by wealthy households to avoid paying the state-level tax. The tax revenue lost by the states because of this migration, however, is very small compared to the revenues generated by maintaining the EIG taxes.

Conway and Rork (2006) explore a similar question, constructing a state-level panel using data from the last four decennial censuses, and directly measuring the migration patterns of elderly households following changes in EIG taxes. Their study, which also uses a "difference-in-differences" approach, finds no impact of state inheritance taxes on migration of the elderly. Correlation between the presence of large number of elderly households and the absence of state EIG taxes, in Florida for example, is more likely a result of the development of powerful voting blocs that successfully push to eliminate those taxes. The migration, in other words, was happening before the tax change and has continued since.

More recently, Conway and Rork (2010) extend this research to examine the impacts of the growing number of exemptions and deductions in state income taxes giving preferential treatment to older households. Using a number of different analytical approaches and data sets and many years of data, this detailed study finds no evidence to support the idea that state-level tax preferences for the elderly are impacting their migration choices.

Finally, Young and Varner (2011) use detailed tax return data from the state of New Jersey to consider the impacts of that state's "millionaire tax" on migration of high-income households. The New Jersey study finds that the millionaire tax – which, in 2004, raised the marginal tax rate by 2.6 percentage points for incomes above $500,000 – had little impact on affluent households leaving the state.[6] Young and Varner conclude that the tax did cause some very rich households to leave New Jersey, but generated $1 billion in additional revenue and modestly reduced income inequality in the state.

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[5] There are a number of other papers exploring tax-induced migration that rely exclusively on cross-sectional data. These studies are not discussed here because their ability to identify causal relationships between migration and economic and fiscal factors is generally discounted. Using a single year of data, researchers may verify the correlation between taxes and migration rates, but are unable to determine the direction of causation.

[6] A separate literature explores how wages respond to cross-state tax differences, with the presumed wage changes caused by cross-state shifts in labor supply. The first paper in this literature uses a simple cross-sectional analysis and finds wages to be very responsive – implying very responsive labor supply (Felstein and Wrobel, 1998). Subsequent research aimed at overcoming methodological limitations of the Feldstein and Wrobel study, however, has found wages (and presumably labor supply) to be much less responsive. Leigh (2008) uses state panel data and finds that wages are not at all responsive to cross-state tax differences. Leigh extends his approach to consider migration directly, and similarly finds that migration behavior also does not seem to respond to cross-state tax differences. Thompson (2011) explores the same question, using pseudo-panel regressions to incorporate costly migration into the state panel approach. Wages and migration behavior of high-income households (those with the highest levels of education and work experience, and presumably high migration costs) are found to not respond to cross-state differences in taxes. Wages and, to some extent, migration rates of young and highly educated workers (with presumably low migration costs, but only middle-income levels) are responsive to cross-state tax differences.

IV. TAXES AND MIGRATION IN NEW ENGLAND

To date there have been no studies focusing specifically on tax-induced migration from New England. One recent study by the New England Public Policy Center at the Boston Federal Reserve Bank does examine the impacts of various economic factors on migration using data on annual state-to-state migration flows from the Internal Revenue Service (Sasser, 2009). That study finds that unemployment, personal income, and housing affordability, along with measures of distance between states and fixed effects to reflect unobserved and unchanging state factors, together can explain the bulk of cross-state variation in migration. In this section, we extend Sasser (2009) to include a variety of fiscal factors that might potentially influence migration patterns.

4a. General trends in migration, employment, and taxes

A graphical depiction of the basic relationships between migration and both economic and fiscal factors is included in Figure 3, which contrasts the trends in net migration with those of employment growth and income taxes. The Figure includes separate panels for each New England state showing how net migration varies with relative employment growth rates and how it varies with relative income tax rates between 1988 and 2006.[7] The various Panels of Figure 3 show that trends in net-migration for the New England states match very closely to the relative employment growth in the region.[8] In each state, net migration rises and falls along with relative employment growth (Panels A1, B1, C1, D1, E1, and F1 in Figure 3).

By contrast, changes in the relative income tax rates – the average marginal tax rate in the state less the national average, seem unrelated to changes in net migration. In Connecticut, for example, net migration plummets in the early 1990s, and then recovers dramatically following the enactment of a major tax reform in which the state adopts a broad-based income tax on earnings (Figure 3, Panel A2). The contrast between Maine and New Hampshire is also instructive. The two neighboring states have very similar patterns (in trend and in level) of net-migration. Net migration rises and falls along with relative employment in both states (Figure 3, Panels B1 and D1). On taxes, however, the states are very different. New Hampshire's lower-than-average total income taxes (federal plus state) on earnings steadily drift ever lower over this period (Figure 3, Panel D2). Maine's above average income taxes slowly rise over the period (Figure 3, Panel B2). The two states' migration patterns, though, are essentially indistinguishable.
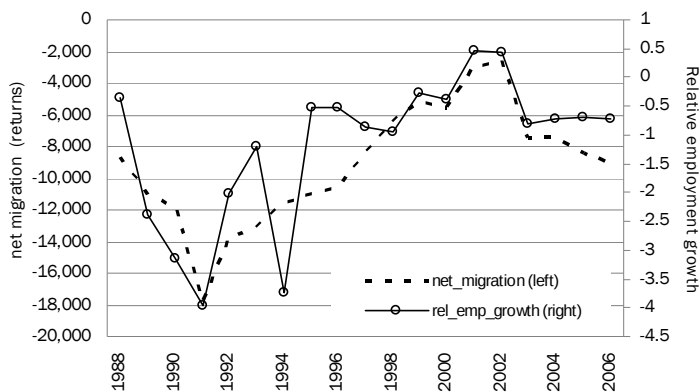
Correlation coefficients, a statistic used to measure how closely variables move together, for the data used in Figure 3 confirm that net migration moves closely with employment growth, but not with taxes. The average correlation coefficient across New England for net migration and relative employment growth is .76, while it is just .06 for net migration and relative income taxes. A correlation coefficient of 1.0 (or -1.0 if the relationship is negative) indicates perfect correlation, while 0 indicates no correlation whatsoever. In each of the New England states net migration increases when relative employment growth rises, confirming the positive relationship we expect to find. In five of the six states, however, the relationship between net migration and relative income taxes is also positive, with more people entering and/or fewer people leaving the state as relative taxes rise, the opposite of what you would expect if people were fleeing taxes.[9]

This simple graphical analysis confirms the importance of economic conditions in explaining the variation of migration in New England over time. As a first approximation, the trends revealed in Figure 3 suggest the impact of taxes on migration is not likely to be very important, but we want to explore this relationship more systematically, using statistical analysis to control for a variety of potentially confounding factors.

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[7] IRS state-to-state migration data are used to calculate net-migration, which is the total number of incoming tax returns less the total number of out-going tax returns. Relative employment growth is the state's employment growth rate (employment in year 1 less employment in year 0, divided by employment in year 0). Relative income taxes are the state's average marginal tax rate, calculated by NBER using the TAXSIM program with a fixed national income distribution for 1995, less the national average marginal tax rate (Feenberg and Coutts, 1993). The tax rate is the marginal rate on wage income, and includes both state and federal taxes to control for the deductibility of state income tax payments.

[8] Net migration is the number of households moving into the state in a year minus the number of households moving out of the state in a given year. Relative employment growth is the state's employment growth rate in a year less the national average.

[9] Correlation coefficients by state (migration and employment; migration and taxes): CT(.80;.38), ME(.78;.11), MA(.76;.16), NH(.80;.13), RI(.56;.05), and VT(.61;-.47).
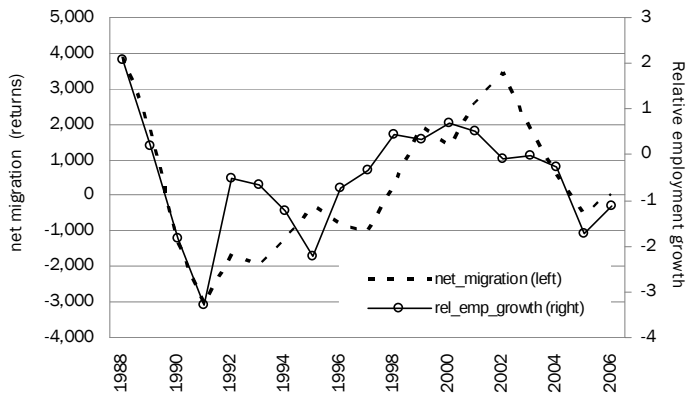
Panel A1. Connecticut: Net Migration and Employment Growth
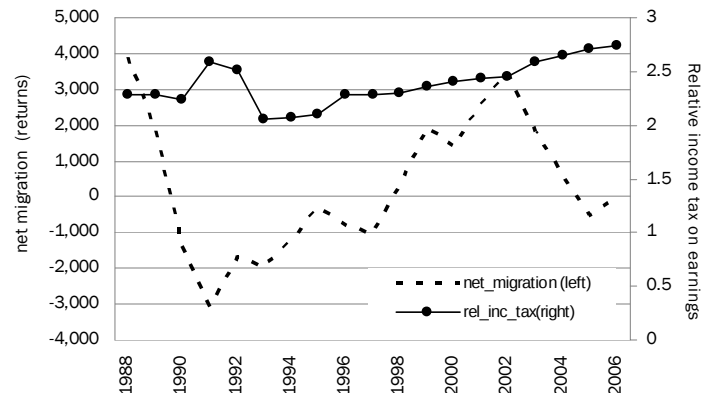
Panel A2. Connecticut: Net Migration and Income Taxes
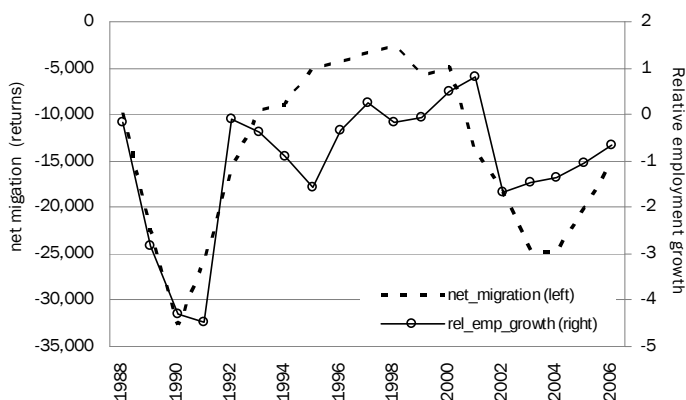
Panel B1. Maine: Net Migration and Employment Growth
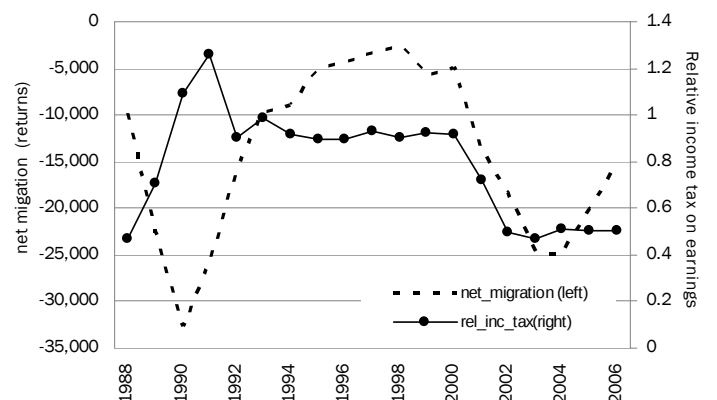
Panel B2. Maine: Net Migration and Income Taxes

Panel C1. Massachusetts: Net Migration and Employment Growth

Panel C2. Massachusetts: Net Migration and Income Taxes
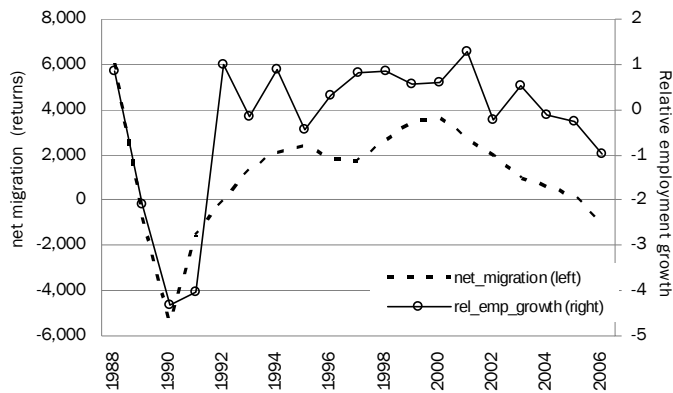
Note: Net migration is the number of households (returns) moving into the state less the number of households moving out of the state. Relative income taxes are the average marginal income tax in the state (calculated by NBER using their TAXSIM program) less the national average marginal income tax rate. Relative employment growth is the state employment growth rate less the national average employment growth rate.
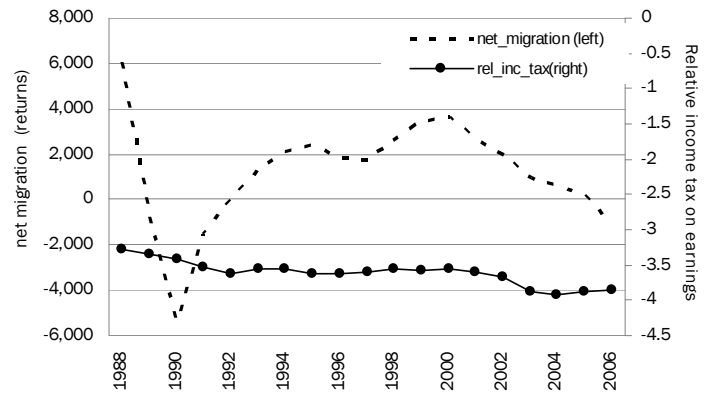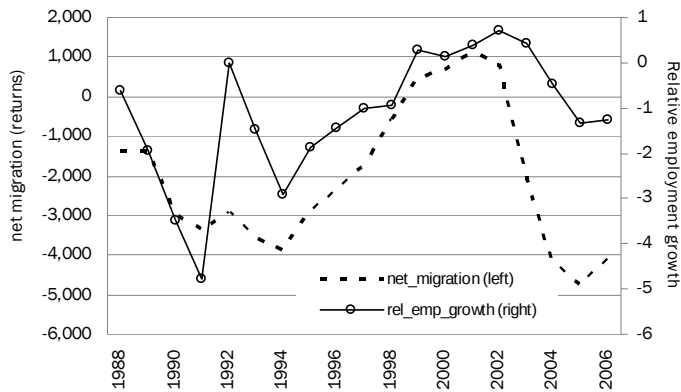
Panel D1. New Hampshire: Net Migration and Employment Growth
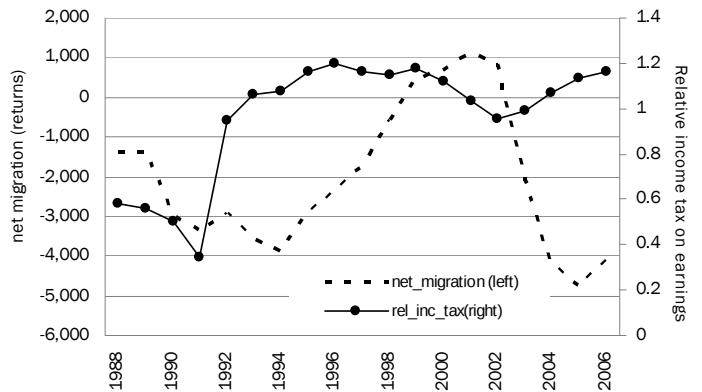
Panel D2. New Hampshire: Net Migration and Income Taxes
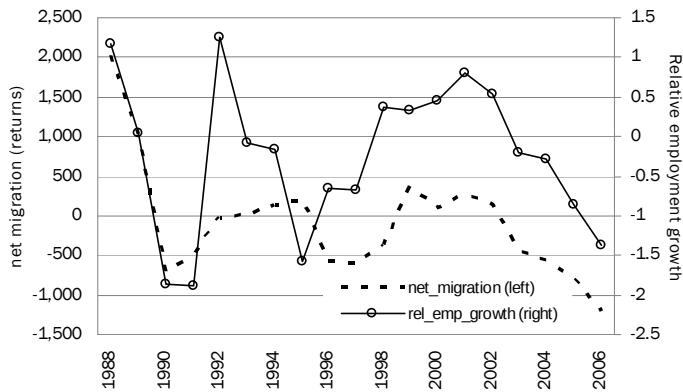
Panel E1. Rhode Island: Net Migration and Employment Growth
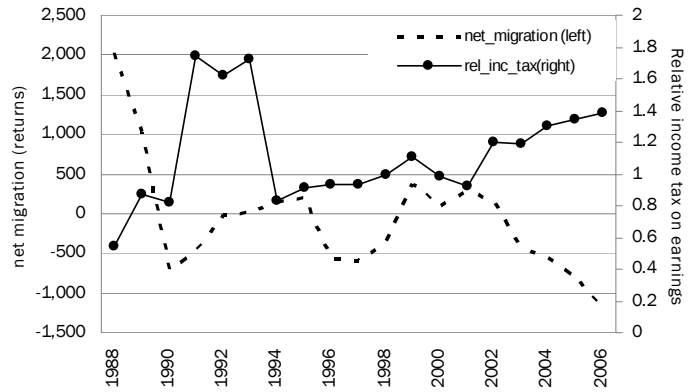
Panel E2. Rhode Island: Net Migration and Income Tax

Panel F1. Vermont: Net Migration and Employment Growth

Panel F2. Vermont: Net Migration and Income Taxes

4b. Statistical analysis of migration and taxes

Using the annual IRS migration data for 1988 to 2006, we study the same economic factors as Sasser (the Insured Unemployment Rate, Real Per-Capita Personal Income, and a "Housing Affordability Index"), but also include measures for income taxes, sales taxes, total state and local government revenues, in addition to measures of crime and educational services, as well as additional economic factors.[10] Appendix Table 1 contains summary statistics for each of the variables included in these regressions.[11]

Following Sasser (2009) we use state panel data, which in effect allows us to examine how changes in different variables within states over time impact changes in the out-migration rate (the number of exemptions leaving the state divided by the total number of exemptions in the origin state during the previous year). We also use one-year lagged values of the independent variables, looking at how a change in economic conditions or conditions in the previous year impacts migration rates in the current year.

Also following Sasser (2009), we present some results on the impact of "net" differences in economic and fiscal conditions between the origin and destination states, as well as some results from "asymmetric" regressions which allow conditions in the origin and destination states to have different impacts on migration behavior. Simply put, this allows the factors that attract people to a state to differ from the factors that inspire people to leave a state. Asymmetric impacts are consistent with the idea of migration being a two-step process, where people first decide whether or not to move, and then decide where to move. With very large fixed costs to moving, a large shock, such as job loss or divorce, may trigger the decision to move, and then a secondary set of factors (such as employment growth, housing costs, climate, etc.) influence the choice of the destination.[12] Allowing for "asymmetric impacts" is also consistent with the PEW survey findings showing very

different factors motivating the location choices of "leavers" as compared to "stayers." Further details explaining the statistical analysis, including descriptions of the variables used and the equations estimated are included in the Technical Appendix.

Results for the "net" difference regressions using only the three economic factors highlighted by Sasser (2009) confirm the findings from that earlier paper (Column 1, Appendix Table 2). Out-migration rises as unemployment climbs in the origin state relative to the destination state, and it falls as per-capita income and housing affordability rise. The impacts of unemployment and housing affordability, as well as the distance in miles between each state's largest city are statistically significant. Introducing the additional economic and fiscal factors has little impact on the model's overall explanatory power, as the "R^2" rises from .836 to .837. Several of these other variables, though, are statistically significant (Column 2, Appendix Table 2). Neither a net increase in the income tax rate nor an increase in K-12 spending seems to impact migration. Greater total state and local revenue and property crime rates both increase out-migration, while increased higher education enrollment decreases it. Including demographic factors (Column 3, Appendix Table 2) causes little change in the economic and fiscal factors, but does indicate that higher concentrations of younger age groups results in greater out-migration.

When these same regressions for the impacts of net differences in economic and fiscal factors are estimated only for the New England states (Columns 3 through 4, Appendix Table 2) the results are largely similar.[13] The only notable differences are that before including demographic controls (Column 5), greater K-12 spending is shown to decrease out-migration, and the share of the population with a Bachelor's degree or higher is found to significantly increase out-migration (Column 6).

Results from the "asymmetric" regressions continue to affirm the importance of economic factors in explaining migration trends and also the mixed impacts of fiscal factors. Column 1 of Appendix Table 3 includes only the key economic factors highlighted by Sasser (2009), and shows that favorable economic conditions (lower unemployment, more affordable housing, and higher per-capita income) in destination states increase out-

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[10] Sasser (2009) uses IRS state-migration data for 1977 to 2006, having obtained and coded additional years of data that are not currently available in computer readable format.

[11] Sasser (2009) uses the overall Insured Unemployment rates, which combines initial claims and continuing claims. Here we separate the two and consider their independent impacts.

[12] For further discussion of the logic and the evidence behind migration being costly, see Thompson (2011).

[13] In these regressions, the migration flows to and from New England states, are included.

migration, while favorable economic conditions in the origin state decrease out-migration. The only economic factor that does not have the anticipated sign is housing affordability in the destination state. More affordable housing in the origin state seems to decrease out-migration, but housing affordability in the destination state appears to have no impact on out-migration.

Including the additional explanatory variables (Column 2, Appendix Table 3) further supports the finding that favorable economic conditions in the origin state decrease out-migration, while favorable conditions in the destination state increase out-migration. With the inclusion of the employment growth rate and the continuing claims uninsured rate, the initial claims rate now switches signs, but most of the economic factors are of the anticipated sign and are statistically significant.

Results for the tax variables, though, provide mixed evidence at best for their impact. The coefficients for sales taxes do not have a consistent sign, and are generally not statistically significant across the specifications shown in Appendix Table 3. In the case of income taxes and total revenue, higher taxes in the destination do seem to deter out-migration. But higher income taxes and revenue in the origin state also seem to deter out-migration. For total revenues, the coefficients in the origin are negative in every case, but quite small in the specifications which include demographic controls, and statistically significant in none of them.[14] In the case of income taxes, the impact in the origin state is larger in each specification, and in two of the four specifications they are statistically significant. Since total revenue as a share of GDP is already included in these regressions, the explanation for the negative sign in the origin state is not simply more spending on state services as a result of higher income taxes. It could be that there are some differences in types of spending in states with income taxes that attract residents, but are not controlled for in these regressions.[15] The different distributions of income taxes as compared to other taxes could also account for this finding. Although much of the concern over tax-induced migration centers those with high-income, the reality is that outside of the few extremely

rich who own homes in many different states, high-income households are not especially geographically mobile. The most mobile group is young and highly-educated workers, who are in middle-income households. High-income households are also highly-educated, but they are also much older and more likely to be married, have kids, and own a home, all factors dramatically reducing their geographic mobility (Thompson, 2011). If higher income taxes, controlling for total revenue, permit lower overall taxes on younger and more mobile workers, and instead shift the tax burden to higher-income and less mobile workers, then it is plausible that these taxes could reduce outmigration.

A series of robustness checks (regression results available from the author) indicate that the income tax findings are robust to using different tax variables. If the highest state marginal tax rate is used instead of the average marginal rate, the results are very similar, in magnitude, sign and significance. Also, if the average marginal rate on capital gains income is used instead of, or in addition to, wage income, the sign in the destination state flips, suggesting higher capital gains taxes in the destination state are associated with additional out-migration.[16] In the origin state, however, capital gains taxes don't impact out-migration.

The property crime and higher-education enrollment variables have the anticipated signs and are statistically significant, but higher violent crime has no consistent impact on out-migration. Only the New England specifications yield any statistically significant results for violent crime, but the signs suggest a negative impact on out-migration from conditions in both the origin and the destination state. Greater K-12 spending in the origin state has a negative impact on out-migration in each of the specifications, but none of them are significant, and the impact is also negative in most of the specification for the destination state, and significant in two cases.

While some of the coefficients are not statistically significant, and some have the "wrong" sign, the results included in Appendix Tables 2 and 3 tend to support a plausible story about the factors that influence cross-state migration. For one thing, it is not surprising that

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[14] If the revenue-share variable is dropped from this specification, the income tax variable becomes larger (but remains negative) in both the origin and destination.

[15] Alternatively, higher income taxes could allow for lower levels of other types of taxes and fees that are more disliked, and also not included in the specification.

[16] The positive sign for migration and capital gains taxes should not be considered evidence for the idea that people are moving because of the tax. More likely explanations are that higher capital gains taxes, which are paid by very few people, allow other types of taxes to be lower – in some way that is not being controlled for in our regressions.

spending on K-12 education has weak and seemingly contradictory impacts on cross-state migration since spending levels are arguably an inadequate proxy for the quality of eduction. Also, education is primarily a locally-provided service. Substantial research supports the idea that households choose communities at least in part based on quality of school and property taxes.[17] Within states and even within urban areas, however, there is wide variation in the quality and the tax-related cost of education. Thus K-12 quality and costs influence location within, but likely not between, states. The economic and crime variables impact migration largely in the anticipated direction.

The tax variables, while exhibiting the "same sign 'problem'" (having the same sign in both the origin and destination state), seem largely consistent with a "two-step" or "high-cost of moving" explanation for migration behavior. Higher taxes in the origin state either do not impact out-migration (at least in terms of statistical significance in some cases) because the differences remain small relative to the high economic and psychological costs of moving, or even decrease out-migration. When households make the decision to move, they do seem to be impacted by economic, crime, and tax factors in generally anticipated ways. Higher taxes in the origin state, then, either do not impact or possibly reduce out-migration, but higher taxes in the destination state to some extent deter out-migration to that state.

4c. Understanding the size of the migration effects

The findings presented in Appendix Tables 2 and 3 show the direction and the statistical significance of the impacts of changes in various economic and fiscal factors on the out-migration rate, but do not show the size of the change in those variables or the size of the impact on migration in a way that is easily interpreted by policy makers or other interested parties. Tables 3 and 4 use the findings from those appendix tables to show the size of changes in selected economic and fiscal variables, and the numbers of people that can be anticipated to move in response. Calculated for a one standard deviation change in each of the relevant economic and fiscal variables, Table 3 shows the number of additional out-migrants for the US average and for the New England region.

Results from the net difference regressions (Appendix

Table 2, Column 3) indicate that an increase of 0.8 in the Insured Unemployment Rate for continued claims leads to 187 more people migrating outside of the state. Multiplied over the 47 potential destination states, this average effect implies a relatively large number of people leaving the state following a worsening unemployment situation relative to other states. Using the results from the asymmetric regressions (Appendix Table 3, Column 3), this same 0.8 increase leads to 152 additional out-migrants from the origin state, and 224 fewer out-migrants when it occurs in a destination state. Average total covered employment is roughly 2.6 million and an increase in the IUR for continued claims of 0.8 means 23,400 additional unemployed for more than a week. When totaled over all 47 potential alternative states, the results from the asymmetric regressions indicate this level of increased unemployment will lead to 10,500 fewer people leaving other states to move to the higher unemployment state, and 7,000 more people leaving the high unemployment state to live elsewhere.

If the average marginal state tax rate on income from wages rises from 4.5 to 6.7 percent, there is no discernible effect on migration using the net-difference results. The asymmetric results indicate this size of increase leads to 124 fewer out-migrants from the origin state, and 113 fewer out-migrants when the increase occurs in a destination state. A 2.2 point increase in the average marginal income tax rate, though, is much larger than what most states typically consider. These findings, however, can be simply scaled, with an increase in the average MTR on wages of 1.1 leading to migration flow half as large as those in the table.

An increase in own-source state and local government revenues as a share of state GDP from 12.8 percent to 14.6 percent generates no measurable out-migration from the origin state, but when increase occurs in a destination state, out-migration falls by 82 people. A 1.7 increase in revenue as a share of GDP, though, is also very large. Such an increase, based on 2009 state GDP levels, represents $860 million in additional revenue in Maine and $6.6 billion in Massachusetts, for example.[18] These migration impacts can also be scaled to consider smaller increases.

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[17] This research is reviewed in Gibbons and Machin (2009).

[18] The implied revenue increases in the other New England states are: CT, $3.7 billion; NH, $1 billion; RI, $809 million, and; VT, $427 million.

	Change in Independent Variable			Results in:		
				Based on Net-differences in Independent Variables	Based on Asymmetric Treatment of Independent Variables	
	Rises From:	To:	Size of Change	Change in Migration:	In Origin State	In Destination State
US Average						
Insured Unemployment Rate - Continuing Claims	2.1	3.0	0.8	187	152	-224
Average Marginal Income Tax Rate on Wage Earnings*	4.5	6.7	2.2	**	-124	-113
Own-Source Revenue as Share of GDP	12.8%	14.6%	1.7%	47	**	-82
Housing Affordability Index	28.1%	33.6%	5.5%	-86	-131	42
Property Crime (per 1,000 people)	40.7	52.6	11.9	13	22	-7
New England						
Insured Unemployment Rate - Continuing Claims	2.4	3.3	0.9	94	81	-109
Average Marginal Income Tax Rate on Wage Earnings*	4.7	6.9	2.3	**	-39	-38
Own-Source Revenue as Share of GDP	12.9%	14.6%	1.7%	28	**	-43
Housing Affordability Index	28.7%	34.0%	5.2%	-42	-49	32
Property Crime (per 1,000 people)	36.7	47.8	11.1	5	9	**

Note: regressions use the combined federal and state tax rate to incorporate the cross deductibility of income taxes. Here the tax change is displayed showing only the state tax.

** Based on regression results that are not statistically significant

The results in the two appendix tables also suggest that more affordable housing leads to decreased outmigration. The net difference regressions indicate that a 5.5 point increase in the housing affordability index relative to destination states (median household income divided by median home price) leads to 86 fewer outmigrants. The asymmetric results show that more affordable housing in the origin state leads to 131 fewer out-migrants, and in a destination state it leads to 42 more migrants. As with the tax and revenue changes, this size of improvement in housing affordability is dramatic. Based on a scenario with median household

income of $50,000 and median home price of $180,000, this size of increase in the housing affordability index would imply that median housing prices fall to $147,000, or that median family incomes rise to $61,000, or some combination of the two. A less dramatic, though still substantial, improvement in housing affordability, an increase of 1.5 points brought about by a 10 percent decline in the median home price, would reduce out-migration by 36 when the improvement occurs in the origin state and increase out-migration by 11 when the improvement happens in the destination.[19] When summed across all 47 alternative states,

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[19] It is important to note that the impact of a reduction in housing prices on migration will crucially depend on the means by which the housing prices are lowered. The regression findings suggest that more affordable housing, assuming all other factors held equal, will decrease out-migration and attract people to a state. If house prices

this level of improvement in housing affordability in one state would cause 1,680 fewer out-migrants and 540 more to move to the improving state.

The impact of equivalently large changes in economic and fiscal conditions in the New England states leads to changes in migration that are roughly half as large as in the rest of the country. The bottom half of Table 3, based on the results in Appendix Table 2, Column 6, and Appendix Table 3, Column 5, shows the impacts on the number of additional migrants when the regressions include only the migration flows into and out of New England states. In each case, the direction of the impact from the change in economic and fiscal conditions is the same as the national average, but the size of the impact in numbers of migrants is approximately half as large.

Table 4 replicates these migration impact figures for each New England state. The estimates in Table 4 use the same regression coefficients as in the New England portion of Table 3, but are scaled based on the different economic and fiscal conditions, as well as the different migration rates and populations of each state. The primary difference between the states is that larger states experience nearly proportionally larger shifts in the numbers of migrants in response to the changing economic and fiscal conditions.

A final point to note about the figures in Table 3 and 4, which express the regression findings in a way that is accessible to policy makers and other readers, is that the impact of each of the changes in economic and fiscal conditions holds all other factors constant. So, the income tax changes described above assume that no other factors, including revenue, change. In practice, income tax increases will nearly always increase revenue. And, also, increased revenue will be spent in ways that will often make a place more attractive to current and potential residents (better schools or parks and additional police officers, for example). Allowing these different factors to change simultaneously, the results in Table 4 suggest, for example, that if the state of Massachusetts were to raise the average marginal tax rate on wage income by 1 percentage point, nearly 1,700 fewer people would leave the state, but approximately 1,900 fewer people would choose Massa-

chusetts when they move away from other states. Since a 1 percentage point increase in the average MTR on wage income, unless offset by some other large tax cut, would generate approximately $2 billion in revenues, an additional 1,600 people could be expected to not choose Massachusetts when relocating.[20]

The combined impact of generating additional revenue by raising the income tax is that the state loses 1,800 people because fewer people choose Massachusetts over other states when relocating.[21] The final impact on migration, though, will depend greatly on how the state uses the additional revenue. If the public sector uses the additional revenue to hire workers directly or create initiatives that induce the private sector to hire workers, and reduce unemployment, the economic drivers of migration quickly overcome the fiscal drivers. If Massachusetts used the $2 billion in new revenue to hire (directly or indirectly) 28,000 workers and reduce unemployment, for example, migration would be impacted dramatically.[22] Even if only half of the new jobs are filled with currently unemployed Massachusetts residents, out-migration from the state would fall by 3,600, and 5,800 would choose Massachusetts over other states when relocating.[23] If a substantial number of those jobs were in the law-enforcement field or other sectors that could lower the property crime rate, then the impacts on migration would be even greater, further reducing outmigration from the state and increasing

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[20] Massachusetts collected $10.6 billion in personal income tax revenue in 2009, and its average MTR on wage income was 5.28 percent. The state Gross Domestic Product in 2009 was $362 billion.

[21] In a linear model with independent covariates, the coefficients are additive, allowing us to simply sum the effects of the independent variables. This is how the combined estimates described in the text are calculated. We have also, however, explored a simple alternative approach using interaction terms to explore whether joint increases in income tax rates and total revenue have an impact on migration distinct from the independent changes. In effect this adds an additional covariate to the specification, which is the income tax rate multiplied by the total revenue share. Coefficients for the interaction term are positive and significant, suggesting that the joint changes have an impact that is distinct from their individual changes. The inclusion of the joint effect, though, also alters the independent impacts, and the net results do not appreciably alter the overall impacts on out-migration described here and in Tables 2 and 3.

[22] The 28,000 jobs figure assumes $65,000 in total annual costs per-hire and 10 percent administrations costs for the entire $2 billion.

[23] The state's current (March 12, 2011) IUR for continuing claims would fall from 4.14 to 3.67 if the number of continuing claims fell by 13,900 and total covered employment rose by an equivalent amount.

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fall because of a bad economy, for example, the cause of the decline in housing prices will itself undermine any attraction from more affordable housing.

	Change in Independent Variable		Results in Changes in Migration:		
			Based on Net-differences in Independent Variables	Based on Asymmetric Treatment of Independent Variables	
	Rises From:	To:		Origin State	Destination State
Connecticut					
IUR - Continuing Claims	2.7	3.6	121	104	-141
Ave. MTR on Wages*	4.1	6.4	**	-50	-49
OS Revenue as % of GDP	12.9%	14.6%	37	**	-56
Housing Affordability Index	24.0%	29.2%	-54	-64	41
Maine					
IUR - Continuing Claims	2.5	3.5	74	34	-86
Ave. MTR on Wages*	7.6	9.8	**	-16	-30
OS Revenue as % of GDP	12.8%	14.5%	22	**	-34
Housing Affordability Index	31.5%	36.7%	-33	-21	25
Massachusetts					
IUR - Continuing Claims	2.8	3.8	228	165	-264
Ave. MTR on Wages*	5.6	7.8	**	-79	-91
OS Revenue as % of GDP	12.9%	14.6%	69	**	-104
Housing Affordability Index	25.5%	30.7%	-102	-101	77
New Hampshire					
IUR - Continuing Claims	1.3	2.3	186	49	-216
Ave. MTR on Wages*	0.0	2.3	**	-24	-75
OS Revenue as % of GDP	12.9%	14.6%	56	**	-85
Housing Affordability Index	33.5%	38.7%	-83	-30	63
Rhode Island					
IUR - Continuing Claims	3.6	4.5	75	34	-87
Ave. MTR on Wages*	5.8	8.0	**	-16	-30
OS Revenue as % of GDP	12.8%	14.5%	23	**	-35
Housing Affordability Index	27.1%	32.3%	-34	-21	26
Vermont					
IUR - Continuing Claims	2.7	3.6	70	20	-81
Ave. MTR on Wages*	5.9	8.2	**	-10	-28
OS Revenue as % of GDP	12.8%	14.5%	21	**	-32
Housing Affordability Index	35.0%	40.2%	-31	-13	24

Note: regressions use the combined federal and state tax rate to incorporate the cross deductibility of income taxes. Here the tax change is displayed showing only the state tax.

** Based on regression results that are not statistically significant*

flows into the state. This paper does not attempt to control for all of the possible ways states do or can potentially spend or invest their revenue. But, the findings do indicate that the relatively modest reductions in migration flows to states that increase taxes and raise revenues can be more than offset if those funds are used to create jobs, and reduce unemployment and property crime.

V. CONCLUSION

Evidence from surveys of migrating households, the existing economic literature, and the new analysis in this paper all suggest that taxes do not play any notable role in causing people to leave a state. The most important factors in influencing household migration are economic and family-related reasons. If anything, higher state income taxes are shown to decrease the numbers of people leaving a state. Taxes do appear to influence the choice of which state to live in once a person has decided to move, but the impact is modest. If states use the revenues from higher taxes to create jobs, reduce unemployment, and reduce property crime, the small negative impacts from taxes can be easily overcome.

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TECHNICAL APPENDIX

A standard approach to studying migration is to use a logistic model, which assumes households choose to migrate after comparing the attributes of the origin and destination locations.[24] Following Sasser (2009) we estimate the model with Ordinary Least Squares, using the IRS data to form state panels.[25] The IRS data are annual migration flows between states, calculated from federal income tax returns. An individual filing a return in state "o" in year 1, and then filing in state "d" in year 2 is identified as having migrated from state "o" to state "d" between years 1 and 2. The exemptions claimed on the tax return are the measure of the number of people having migrated. These data are an unparalleled source of information for the cross-state flow of people in the United States. The primary weakness of the data is that they do not include any breakdowns by relevant demographic or economic groups to consider differential migration responses across groups.

We follow Sasser (2009) and include state fixed effects to control for unobserved and time-invariant state factors, implicitly examining how changes of different variables within states over time, relative to the state over-time average, impact changes in the migration rate. The analysis also uses one-year lagged values of the independent variables, looking at how a change in economic conditions or conditions in the previous year impacts migration rates in the current year. All independent variables are expressed relative to the national average. These state-level, over-time variables, with summary statistics presented in Appendix Table 1, include both economic as well as fiscal factors.

The economic variables include the Insured Unemployment Rate (initial and continuing claims are included separately), per-capita income, a housing affordability index, the employment growth rate, and the US unemployment rate to reflect shared cyclical effects.[26] Fiscal variables include the average marginal income tax rate on wage earnings, the state sales tax rate, total state and local government "own-source" revenue as a share of Gross Domestic Product, and per-capita spending on K-12 education.[27] Other potentially policy or environment-related factors include crime rates (for both property and violent crimes separately) and public higher education enrollment.[28] Demographic variables include the share of the population that is between 20 and 24 years old, the share between 25 and 34, and the share 65 and above, as well as the portion of the 25 and older population with at least a Bachelor's degree.[29]

Other factors than those listed here, of course, might be thought to influence migration decisions and destinations. No model, however, can include everything that might potentially matter. Weather and climate related factors are shown to influence migration choices in a cross-section, but change little from year to year and have little impact in a panel. The results included in Appendix Tables 2 and 3, however, do include (though not shown for space) an indicator variable to reflect the impacts of Hurricane Katrina on migration out of Louisiana in 2005 and 2006. The impact is significant, but has no appreciable impact on the fiscal factors we are exploring here.

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[24] For additional details on the model, see Sasser (2009).

[25] Using OLS is necessary, at least in part, because the grouped state-level data contains migration flows, not the binary dependent variable "do not migrate = 0, migrate = 1" used in the logistic model.

[26] The housing affordability index is calculated by dividing the median household income by the median home price. State-level average home price data are from the Federal Housing Finance Agency (FHFA) with price levels anchored in 2006 and annual price adjustments from that base year calculated using the FHFA Housing Price Index. Median household income is from the Current Population Survey.

Data sources for the other economic variables: Per-capita personal income (Bureau of Economic Analysis); Insured Unemployment Rate (Department of Labor Employment and Training Administration); United States Unemployment Rate (Bureau of Labor Statistics); and employment growth rate (Bureau of Economic Analysis). Per-capita income, the housing affordability index, and the insured unemployment rates are all calculated for the 12-month period that begins with the second quarter of the calendar year and ends with the completion of the first quarter of the following calendar year. This timing is intended to match as closely as possible IRS migration statistics.

[27] The average marginal tax rate on wage earnings (AVE MTR) is calculated by the NBER using the TAXSIM program. To highlight variation in tax policy, as opposed to demographic or economic conditions, we use the AVE MTR for each state that is based on the national population from 1995. To account for the cross-deductibility of state and federal income taxes, we use the combined AVE MTR for federal and state income taxes, leaving states without income taxes to reflect just the federal tax. State and local "own-source" revenue and K-12 spending are from the Census Bureau's State and Local Government Finance data. Gross domestic product by state is from the Bureau of Economic Analysis.

[28] Crime rates, per 1,000 of population, are from the Federal Bureau of Investigations Uniform Crime Report, and public higher education enrollment figures are from the National Center for Education Statistics.

[29] Each of these demographic variables is calculated using the March Current Population Survey.

The dependent variable is a migration rate which is calculated by dividing the number of migrants leaving one state for another divided by the total number of residents in the origin state in the prior year. The migration rate can be written:

$$\text{Migration}_{o.d.t} = \frac{\text{exemptions leaving state "o" for state "d" between year "t" and year "t+1"}}{\text{total exemptions in state "o" in year "t"}}$$

The number of migrants is calculated using the total number of exemptions claimed on federal income tax returns of migrating and non-migrating households. The regression results are essentially unchanged, however, if we instead use the number of returns to calculate the migration rate instead.

In some specifications Sasser (2009) explores how net differences in economic factors between states impact migration rates, but she also includes specifications which are "asymmetric" in that they allow conditions in the origin state to have different impacts on migration than in the destination state. Also following Sasser (2009), migration flows to and from Alaska and Hawaii are excluded.

The asymmetric specification can be written:

$$\text{Migration}_{o.d.t} = \alpha + \beta X_{o,t-1} + \gamma X_{d,t-1} + \theta Z_t + \rho D_{o,d} + \delta_o + \delta_d + \delta_t + \varepsilon_{o,d,t}$$

In this equation, β is the coefficient on lagged economic and fiscal variables in the origin state ($X_{o,t-1}$), γ is the coefficient on lagged conditions in the destination state ($X_{d,t-1}$), and δ_o, δ_d and δ_t are fixed effects for the origin state, destination state, and year, respectively. Also included are the national unemployment rate, which only varies over time (Z_t) and a measure for the distance between the largest cities in each state, which varies across each origin-destination pair ($D_{o,d}$). Following Sasser (2009), we use the natural log of the dependent variable as well as the variables for real per-capita personal income and the housing affordability. The net-difference specification is only different in how the independent variables are expressed:

$$\text{Migration}_{o.d.t} = \alpha + \beta DIFFX_{o,d,t-1} + \theta Z_t + \rho D_{o,d} + \delta_o + \delta_d + \delta_t + \varepsilon_{o,d,t}$$

In this specification, each of the relative economic and fiscal variables ($DIFFX_{o,d,t-1}$) is expressed as the difference between the conditions in the origin state and the destination state (origin less destination).

We use White-type robust standard errors clustered at the state level to control for unknown forms of heteroskedasticity. Following Conway and Rork (2006), we also weight the regressions by the total state population to adjust for the fact the smaller states have greater variability in their migration rates.

	# of observations	Mean	Std. Dev.	Min	Max
# migrating exemptions (by state-to-state pair)	44687	2,317	4,688	0	94,564
Total exemptions	44688	4,340,416	4,566,422	374,497	27,300,000
Per-capita Income	44688	25,408	7,326	11,566	60,080
Housing Affordability Index	44688	0.28	0.06	0.09	0.45
Insured Unemployment Rate - Initial Claims	44688	0.29	0.12	0.06	0.74
Insured Unemployment Rate - Continuing Claims	44688	2.14	0.82	0.53	5.33
Employment Growth	44688	0.02	0.02	-0.05	0.10
Violent Crime Rate	44688	5.1	3.3	0.6	29.3
Property Crime Rate	44688	40.7	11.9	16.1	95.6
Average Marginal Income Tax Rate on Wages (State and Federal Combined)	44688	27.3	2.2	22.3	32.6
Average Marginal Income Tax Rate on Wages (State Only)	44688	4.5	2.4	0.0	9.2
Sales Tax Rate	44688	4.7	1.8	0.0	8.0
Total State and Local Government "Own-Source" Revenue as Share of GDP	44688	0.13	0.02	0.06	0.18
K-12 per-capita spending	44688	1,498	295	845	2,825
Public Higher Education Enrollment	42336	308,300	353,514	29,002	2,474,024
Share 20 to 24	44688	0.07	0.01	0.05	0.11
Share 25 to 34	44688	0.15	0.02	0.11	0.21
Share 65 and older	44688	0.13	0.02	0.08	0.19
Share of 25 and older with a BA	44688	0.22	0.08	0.05	0.50

	All States			New England		
	(1)	(2)	(3)	(4)	(5)	(6)
IUR Initial Claims	0.19913***	0.04488*	0.02823	0.21930***	0.03099	0.02352
	(0.01374)	(0.02449)	(0.02457)	(0.01402)	(0.02708)	(0.02721)
Per-Capita Income	-0.34697***	-0.07467	-0.33849***	-0.57450***	-0.14286	-0.27466**
	(0.07971)	(0.09139)	(0.09671)	(0.10128)	(0.11746)	(0.11966)
Housing Affordability Index	-0.06171***	-0.17833***	-0.15080***	-0.11947***	-0.25403***	-0.18392***
	(0.02039)	(0.02293)	(0.02424)	(0.02400)	(0.02741)	(0.02964)
Additional Economic Variables:						
Employment Growth		-0.00147**	-0.00157**		-0.00089	-0.00060
		(0.00062)	(0.00062)		(0.00066)	(0.00066)
IUR Continuing Claims		0.20810***	0.19793***		0.24838***	0.21345***
		(0.02634)	(0.02634)		(0.02694)	(0.02699)
Tax Variables:						
Income Tax (Average MTR on Wages)		0.00581	0.03846		-0.01920	0.06880
		(0.17788)	(0.17909)		(0.14843)	(0.14775)
Sales Tax Rate		0.01044	0.00306		0.02833	-0.02243
		(0.03243)	(0.03246)		(0.03361)	(0.03430)
S&L Govt. Total Revenue (Share of GDP)		0.12988***	0.12078**		0.17218***	0.17269***
		(0.04995)	(0.05100)		(0.05645)	(0.05869)
Public Service & Demographic Variables:						
K-12 Per-pupil Spending		-0.01703	0.05080		-0.09027**	-0.00872
		(0.03323)	(0.03537)		(0.04083)	(0.04380)
Higher Education Enrollment		-0.28143***	-0.36540***		-0.22852***	-0.35529***
		(0.03351)	(0.03624)		(0.03920)	(0.04774)
Violent Crime Rate		-0.02701	-0.00328		-0.07498**	-0.00263
		(0.02207)	(0.02278)		(0.02937)	(0.03044)
Property Crime Rate		0.22832***	0.18501***		0.33245***	0.18844***
		(0.02812)	(0.02894)		(0.03385)	(0.03668)
Demographic Variables:						
20 to 24 Share			0.36936***			0.52524***
			(0.04236)			(0.04741)
25 to 34 Share			0.11869**			0.03043
			(0.05917)			(0.05881)

Notes: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

	All States			New England		
65 and older Share			-0.11722			-0.09913
			(0.09459)			(0.08765)
25 and older with BA			0.12372			0.36250***
			(0.11059)			(0.11738)
Distance between largest cities	-0.00114***	-0.00114***	-0.00114***	-0.00206***	-0.00210***	-0.00210***
	(0.00001)	(0.00001)	(0.00001)	(0.00008)	(0.00008)	(0.00008)
US Unemployment Rate	0.07160**	0.07303**	0.07261**	0.03664	0.02263	0.02045
	(0.02932)	(0.03036)	(0.03033)	(0.03334)	(0.03357)	(0.03332)
Constant	-8.04044***	-8.21839***	-8.21627***	-8.38785***	-8.47178***	-8.44665***
	(0.16403)	(0.22899)	(0.22875)	(0.24416)	(0.29959)	(0.29729)
Observations	44659	42214	42214	10347	9778	9778
R-squared	0.836	0.837	0.838	0.949	0.952	0.952

Notes: Standard errors in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$

	All States						New England			
	(1)		(2)		(3)		(4)		(5)	
	origin	destination	origin	destination	origin	destination	origin	destination	origin	destination
Per-Capita Income	-0.11517	0.50868***	-0.03088	0.09823	-0.11874	0.54459***	0.07595	0.46602*	-0.06697	0.82838***
	(0.28582)	(0.08615)	(0.17787)	(0.09096)	(0.19104)	(0.06951)	(0.24940)	(0.25751)	(0.22268)	(0.22663)
IUR Initial Claims	0.23303***	-0.17763***	0.09913**	0.01342	0.07638**	0.02129*	0.08904	0.04314	0.07071	0.05595*
	(0.03837)	(0.00950)	(0.03929)	(0.01071)	(0.03760)	(0.01112)	(0.05545)	(0.02967)	(0.05666)	(0.02801)
Housing Affordability Index	-0.16740**	-0.02405	-0.26374***	0.11088***	-0.23115***	0.07353***	-0.25651***	0.23932***	-0.21596***	0.13936***
	(0.06398)	(0.02011)	(0.04770)	(0.02424)	(0.03790)	(0.02027)	(0.06850)	(0.02854)	(0.05804)	(0.02794)
Additional Economic Variables:										
Employment Growth			-0.00099*	0.00192***	-0.00101*	0.00209***	-0.00020	0.00191***	0.00005	0.00111*
			(0.00056)	(0.00022)	(0.00051)	(0.00024)	(0.00108)	(0.00051)	(0.00107)	(0.00060)
IUR Continuing Claims			0.16641***	-0.26449***	0.16073***	-0.23780***	0.22717***	-0.28536***	0.18332***	-0.24714***
			(0.04175)	(0.01285)	(0.03983)	(0.01320)	(0.07946)	(0.02684)	(0.06684)	(0.02481)
Tax Variables:										
Income Tax (Average MTR on Wages)			-0.59117	-0.43990***	-0.59517*	-0.54660***	-0.68351*	-0.57962***	-0.42686	-0.41320**
			(0.39760)	(0.07942)	(0.34910)	(0.08131)	(0.39528)	(0.15023)	(0.31142)	(0.16410)
Sales Tax Rate			0.00068	-0.02237	0.02994	0.00478	0.05863	-0.04238	0.06560	0.11421***
			(0.06940)	(0.01699)	(0.05764)	(0.01902)	(0.10255)	(0.02670)	(0.09273)	(0.03879)
S&L Govt. Total Revenue (Share of GDP)			-0.06718	-0.29169***	-0.00382	-0.21108***	-0.07413	-0.39011***	-0.02683	-0.26293***
			(0.10402)	(0.03172)	(0.08568)	(0.02642)	(0.14353)	(0.06981)	(0.11471)	(0.06484)

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Note: All specifications also include measures for the distance between the largest city in each state, the national unemployment rate, and an indicator for the impacts of Hurricane Katrina.

APPENDIX TABLE 3. IMPACT OF ECONOMIC AND FISCAL VARIABLES ON OUT-MIGRATION, ASYMETRIC IMPACTS, CONTINUED

		All States						New England		
		(1)		(2)		(3)		(4)		(5)	
	origin	destination	origin	destination	origin	destination	origin	destination	origin	destination
Public Service & Demographic Variables:										
K-12 Per-pupil Spending			-0.03763	0.00217	-0.03716	-0.13255***	-0.13903	-0.05643	-0.09506	-0.25298***
			(0.05930)	(0.02859)	(0.06623)	(0.02394)	(0.12760)	(0.05266)	(0.09944)	(0.06150)
Higher Education Enrollment			-0.26800***	0.27796***	-0.34054***	0.37762***	-0.11670	0.36076***	-0.25824**	0.56624***
			(0.07534)	(0.03634)	(0.08414)	(0.03992)	(0.11238)	(0.05017)	(0.11563)	(0.03534)
Violent Crime Rate			-0.05164	-0.01182	-0.03625	-0.00997	-0.15548**	-0.03016	-0.07356	-0.06973**
			(0.06743)	(0.01012)	(0.06655)	(0.01018)	(0.07537)	(0.03027)	(0.06859)	(0.02655)
Property Crime Rate			0.29446***	-0.14772***	0.29514***	-0.10164***	0.42411***	-0.22976***	0.33148***	-0.01417
			(0.07498)	(0.01973)	(0.06665)	(0.01803)	(0.06812)	(0.04710)	(0.05422)	(0.04698)
Demographic Variables:										
20 to 24 Share					0.08530	-0.53977***			0.32940***	-0.81747***
					(0.09976)	(0.05423)			(0.12184)	(0.05113)
25 to 34 Share					0.00826	-0.14700***			0.07737	-0.12538
					(0.15143)	(0.03695)			(0.15909)	(0.11216)
65 and older Share					-0.81629***	-0.30591***			-0.71731**	-0.40263***
					(0.27958)	(0.07723)			(0.31713)	(0.13068)
25 and older with BA					0.33119**	0.02129			0.45591**	-0.23134**
					(0.13486)	(0.04679)			(0.22209)	(0.10291)
Observations	44659		42213		42213		9781		9781	
R-squared	0.836		0.837		0.838		0.952		0.953	

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Note: All specifications also include measures for the distance between the largest city in each state, the national unemployment rate, and an indicator for the impacts of Hurricane Katrina.

About the author

Jeffrey Thompson is Assistant Research Professor at the Political Economy Research Institute, where he focuses primarily on domestic economic policy, with particular emphasis on the New England region and public finance at the state and local government levels. He completed his Ph.D. in economics at Syracuse University, and his research has been published in the *National Tax Journal, Research in Labor Economics,* and the *Industrial and Labor Relations Review.* Dr. Thompson and his co-author were the recipients of the *National Tax Journal's* prestigious Musgrave Prize for the best paper published in that journal in 2010, for "The Interaction of Metropolitan Cost-of-living and the Federal Earned Income Tax Credit: One Size Fits All?" His other recent publications include "Combining Minimum Wage and Earned Income Tax Credit Policies to Guarantee a Decent Living Standard to All U.S. Workers" (with Jeannette Wicks-Lim, 2010), "The Wage Penalty for State and Local Government Employees in New England" (with John Schmitt, 2010), "Prioritizing Approaches to Economic Development in New England: Skills, Infrastructure, and Tax Incentives" (2010), and "Generating Jobs through State Employer Tax Credits: Is there a Better Way?" (with Heidi Garrett-Peltier, 2010).

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