Base Mobility and State Personal Income Taxes

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Federation of Tax Administrators
Revenue Estimation & Tax Research Conference
September 2010

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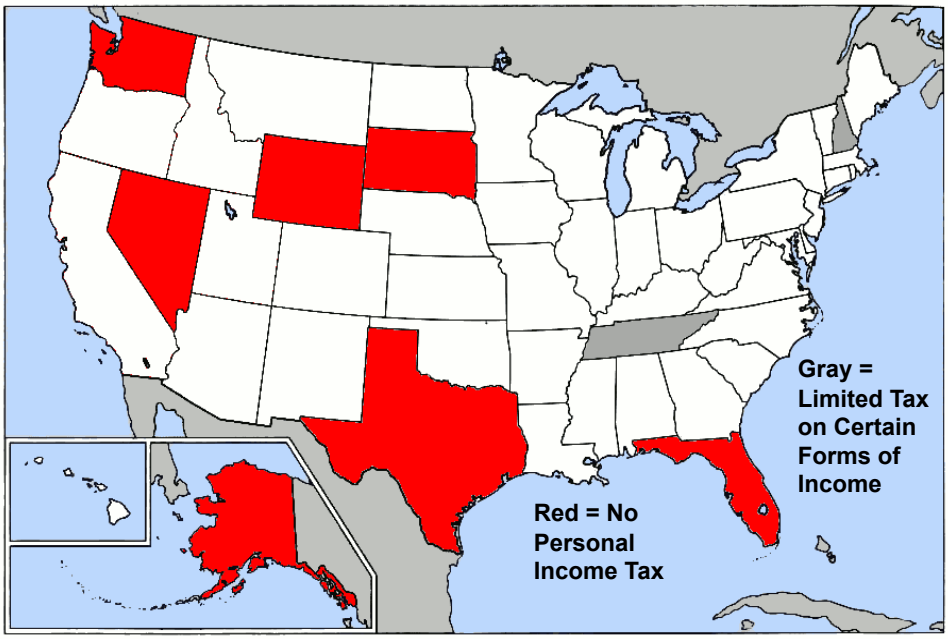
Motivation

- The empirical literature has shifted toward a focus on the elasticity of taxable income (ETI)
  - Focus on federal taxes; individual data
- Personal income tax (PIT) is the most important state tax
- Policy decisions often made without good behavioral response elasticities



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State Personal Income Taxes

- 41 states
  - TN and NH tax only certain forms of income
- Largest state tax (35.7% in 2008)
  - 5 states get more than 50% from PIT
  - Importance has increased over time
- 34 states use progressive rate structures
  - Top rates range from 3% in IL to 9.5% in VT
  - Minimum income for top bracket varies
  - Lots of rate changes over time

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Other Areas of Variation

- Starting point
  - Federal AGI: 27 states
  - Federal Taxable Income: 9 states
  - Federal Tax Liability: 1 state
- Deductions
- Taxation of pension income
- Taxation of non-residents or part-year residents
  - Reciprocity agreements

Avenues for Base Mobility


Welcome to
IDAHO
ENTERING
PACIFIC STANDARD
TIME ZONE


WELCOME TO
Washington
THE EVERGREEN STATE


WYOMING
WELCOMES YOU


WELCOME
TO
NEVADA


Taxes Made Easy.
Taxes Done Right.
Intuit
#1 Rated,
Best Selling
TurboTax
Federal + State
Deluxe
Deduction
Maximizer
Mortgage Interest, Donations
Educational & Medical Expenses
Step-by-step Guidance
For Windows and Mac
TurboTax
Deluxe
Intuit

Mobility Issues

- Degree of mobility depends on level and types of income
  - High-income filers more mobile?
  - Capital income more mobile?
  - Retirees more mobile?
- Micro-data research suggests a small elasticity of (federal) taxable income
  - Elasticities vary within the cross-section and over time; no "structural parameter"

Mobility and State PITs

- Might state tax base elasticities exceed federal estimates due to state variability?
  - Long (1999): slightly higher elasticities
    - 1991 cross section
- State taxes and migration
  - Fox, Herzog, and Schlottman (1989): higher state/local taxes reduce migration into MSAs
  - Knapp, White, and Clark (2001): higher state PIT burdens encourage people to stay
- Level *and location* effects at state level (mainly level effects at federal level)

Estimation Strategy

$$TB_{it} = a_i + b_t + cT_{it} + dX_{it} + e_{it}$$

TB_{it}	= Tax Base in state *i* for year *t*
a_i	= State fixed effects
b_t	= Year fixed effects
T_{it}	= Vector of tax rates
X_{it}	= Other control variables
e_{it}	= disturbance
c, d	= estimated coefficients

Measuring State PIT Bases

- Micro-data not available
  - Not able to harness individual variation
  - Not directly parallel to ETI literature
- Three aggregate options:
  1. **State AGI**: actual total state AGI, gathered directly on a state-by-state basis
  2. **Calculated Base**: collections divided by the top rate (a measure of taxable income)
  3. **Federal AGI**: total AGI on all returns filed from each state

1. State AGI

- Best of the three
  - Actual base in the eyes of state revenue authorities
- Incomplete data collection
  - 23 states provided some data – THANKS!
    - Varying number of years
    - Varying treatment of non-resident income
  - We focus on 14 states with better data:
    CT, HI, IA, KS, NE, NJ, NY, ND, OH, OR, UT, VT, VA, WI
- Not clear whether this state-year subset is a random subset (more later)

2. Calculated Base

- Collections / Maximum PIT rate
  - Available for all PIT states and years
    - Must fill in data for non-PIT states
      - we use federal taxable income
- Better proxy for actual tax base than most other widely-available measures
  - State personal income
- Possibly subject to error given progressive rate structures
  - Many states have essentially flat-rate PITs

3. Federal AGI

- Available for all states and years
- Presumes that people work and receive all income within a single state
  - Masks substantial cross-state income-earning and tax-filing
    - Actual state base data: residents contribute 67-95% of state tax bases (mean=77.2%)
    - State AGI exceeds federal AGI by 16%
- Provides upper-bound estimates of changes in level of economic activity

Tax Variables

- Average marginal tax rates on wage, capital, and pension income (NBER)
  - Representative 1995 sample
    - Removes effects of income/deductions changes
    - Allows for comparison of law changes
  - Top marginal rate used in separate models
- Capital income as a % of total income
    - Index: relative to national average

More Tax Variables

- Indicator for change in starting point (federal AGI or taxable income)
- Top corporate tax rate
- Reciprocity index
- Average wage tax rate in neighbor states
- Personal exemption for married/joint
- Share of revenue from PIT and CIT (measure of progressivity)

Other Variables

- Population
- Unemployment Rate
- Per-pupil Education Spending
- Public Health Care Spending
- Non-PIT revenue share
- Local PIT collections as a percentage of state PIT collections
- Majority political party of state House and Senate

Results – Combined Elasticities

Elasticity with respect to:	State AGI	Calculated Base	Federal AGI
Tax rate on wage income (interacted w/ reciprocity)		-0.232	-0.046
Tax rate on capital income (interacted w/ K income index)		-0.072	-0.043
Tax rate on pension income			
Capital income index (interacted w/ K tax rate)		-0.030	0.028
Reciprocity (interacted w/ wage tax rate)			-0.003

Note: Entries are mean elasticities, calculated using the mean values of interacted variables.

Wage Tax Rate Results

- No significant impact on state AGI
  - Small sample issue?
- Negative effect on the calculated base
  - no interaction effect with reciprocity
- Increasingly negative effect on federal AGI as reciprocity index grows
  - Reciprocity makes workers more responsive to tax differences

Capital Tax Rate Results

- Direct effect is positive on calculated base and federal AGI
  - No effect on state AGI
- Becomes less positive (more negative) as capital share of income rises relative to the national average
  - Combined effect is negative on average
  - Larger for calculated base than federal AGI

Other Results

- Tax rate on pension income:
  - No effect on any base measure!
- Top CIT rate
  - Small negative effect on calculated base
- Reciprocity index
  - Small negative effect (on average) on federal AGI
- Education and health expenditures
  - Positive effect on all PIT base measures
- Average wage tax rate in neighboring states
  - Negative effect on calculated base
- Non-PIT revenue shares
  - Negative effect on calculated base and federal AGI

Sensitivity Analysis

- Are differences across models driven by sample sizes or tax base definitions?
  - Run calculated base and federal AGI models on same sample of states
    - Samples and definitions *both* matter
- Are tax rates collinear or inappropriate?
  - Replace separate rates with top marginal rate
    - Results broadly similar to baseline
    - Effects similar to capital income tax rate results
- Are tax rates endogenous?
  - Experiment with first and second lags
    - Second lags never important
    - First lag results unchanged

Evidence of Tax Planning?

- Combined elasticities are higher for the calculated base measure than for the federal AGI measure
  - Tax rate increase causes a larger change in the calculated base than in federal AGI
- Taxpayers might be responding by moving mobile income sources across state lines but continuing to file their federal tax return from the same state
  - More of a location effect than a level effect?