Who Pays Maine Use Tax?

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Disclaimer: This presentation does not represent the views of Maine Revenue Services or the state of Maine.
Maine use tax background

- 5% rate
- Optional lookup table on income tax return = 0.08% of Maine Adjusted Gross Income for purchases under $1,000; was 0.04% of MAGI before 2008
- Over 85% who paid use tax used the table between 2003-2007, now slightly above 75%
Fraction pay use tax
Resident, Exemption>0, Maine Address, MAGI>0

Use Tax Compliance Program doubles Lookup table doubles

<table>
<thead>
<tr>
<th>Year</th>
<th>Fraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>0.11</td>
</tr>
<tr>
<td>2004</td>
<td>0.11</td>
</tr>
<tr>
<td>2005</td>
<td>0.11</td>
</tr>
<tr>
<td>2006</td>
<td>0.13</td>
</tr>
<tr>
<td>2007</td>
<td>0.13</td>
</tr>
<tr>
<td>2008</td>
<td>0.12</td>
</tr>
<tr>
<td>2009</td>
<td>0.12</td>
</tr>
<tr>
<td>2010</td>
<td>0.10</td>
</tr>
</tbody>
</table>
Fraction who pay use tax by MAGI, 2008

MAGI category ($1,000)  | Fraction
---                    |------
0<12                  | .0634
12<24                 | .0818
24<36                 | .0975
36<48                 | .114
48<60                 | .125
60<80                 | .136
80<100                | .156
100<150               | .192
150<200               | .218
200+                  | .252
Maine use tax background (cont)

- Many taxpayers pay use tax at some point in time
  - Balanced panel 2003-09: 12.3% – 16.3% annual payment rates but 26.3% paid in at least one year
### Use tax payment is persistent

Distribution of number years pay use tax after the first year use tax payment is observed, balanced panel 2003-09

<table>
<thead>
<tr>
<th>Year first observed use tax</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>0.106</td>
<td>0.084</td>
<td>0.072</td>
<td>0.081</td>
<td>0.105</td>
<td>0.148</td>
<td>0.405</td>
</tr>
<tr>
<td>2004</td>
<td>0.276</td>
<td>0.143</td>
<td>0.117</td>
<td>0.121</td>
<td>0.136</td>
<td>0.208</td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>0.320</td>
<td>0.175</td>
<td>0.140</td>
<td>0.128</td>
<td>0.238</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>0.348</td>
<td>0.188</td>
<td>0.155</td>
<td>0.309</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>0.506</td>
<td>0.225</td>
<td>0.270</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>0.598</td>
<td>0.402</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Question

- What are the characteristics of taxpayers who pay use tax and what does that tell us about tax compliance?
Motivation

- Academic Tax Compliance Literature
  - Do intrinsic motives influence tax compliance?
    - Very weak extrinsic compliance motives for use tax compliance
    - Intrinsic motives used by many to explain high level of U.S. tax compliance
    - Existing research primarily uses survey and experimental evidence
    - Disagreement in literature
  - How do tax preparers influence tax compliance?
    - When no ambiguity, evidence suggests that preparers increase compliance
    - What about situation where little ambiguity but near zero chance of evasion detection?
  - Framing Effects: How does income tax balance at filing or filing method (paper vs. electronic) influence taxpayer decisions?
Motivation (cont)

- Tax Administration/Policy
  - If intrinsic motives matter, work to foster these motivations
    - Large psychology literature about extrinsic motives crowding out intrinsic motives; some economists (Feld and Frey) have extended this idea to tax compliance
    - But results too speculative, tax too small to put large weight on the results
  - Evidence that form design matters
  - Evidence on the influence of preparers on use tax payment, but no implications for how to influence preparer behavior
Overview of results

- Large (relative to income) charitable donors who itemize much more likely to pay use tax

- Self-prepared returns much more likely to pay use tax compared to returns with a paid preparer
  - Very unlikely to be a selection effect, e.g. differences in payment rates are not caused by nonrandom assignment of taxpayers to preparers

- Income tax balance at filing negatively associated with probability of paying use tax

- Significant differences in payment probability for self-prepared returns by filing method (paper, I-file, E-file)
Baseline estimates: Linear probability model

Use tax payment (0/1) modeled as linear function of:

- Linear spline in income with 10 notch points and separate intercepts; income groups interacted with dependent exemption dummy variable
- Filing status
- Dependent exemptions (0, 1, more than 1)
- Schedule C return with receipts >$10k (0/1)
- State or local government employee (0/1)
- Head or spouse is 65+
- Zip code fixed effects
- And the characteristics that I am about to discuss
Baseline estimates: Linear probability model (cont)

Estimation using population of Maine resident income tax returns that

- Claim at least one exemption
- Have positive Maine Adjusted Gross Income
- Have a Maine address
## Charitable contribution estimates, 2008

<table>
<thead>
<tr>
<th>Probability pay use tax, relative to itemizer with no charitable contributions</th>
<th>Share of returns</th>
<th>Pay use tax</th>
<th>Unadjusted difference</th>
<th>Regression-adjusted difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do not itemize</td>
<td>64.6%</td>
<td>9.0%</td>
<td>-0.8%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Itemize, no charitable contributions</td>
<td>8.6%</td>
<td>9.9%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Positive contribution/FAGI:

| First quartile | 6.7% | 15.5% | 5.6% | 2.0% |
| Second quartile | 6.7% | 15.4% | 5.6% | 2.4% |
| Third quartile | 6.7% | 16.8% | 6.9% | 3.7% |
| Fourth quartile | 6.7% | 19.5% | 9.6% | 7.4% |
Challenges to interpretation

- Do estimates reflect variation in compliance motivation by charitable giving?
  - Charitable donors overcome free rider incentives in charitable donation context and tax compliance
  - Charitable donors have civic/social values that positively influence compliance

- Or are there other reasons that charitable donors, conditional on observables, are more likely to pay use tax?
  - Awareness of the law
  - Use tax liability
  - Perceptions of the enforcement regime
### Paid preparer estimates, 2008

<table>
<thead>
<tr>
<th></th>
<th>Share of returns</th>
<th>Pay use tax</th>
<th>Unadjusted difference</th>
<th>Regression-adjusted difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-prepared return</td>
<td>45.5%</td>
<td>15.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use paid preparer</td>
<td>54.5%</td>
<td>8.0%</td>
<td>-7.0%</td>
<td>-8.4%</td>
</tr>
</tbody>
</table>

Probability pay use tax, relative to self-prepared return
Challenge to interpretation

- Selection effect: taxpayers who hire preparers prioritize minimizing tax liability

- Investigate two ways:
  - Examine effect of switching between preparer and self-prepared
  - Examine the distribution of the fraction of preparer’s clients who pay use tax
Switching between preparer and self-prepared

- Analysis based on taxpayers who filed with positive AGI in every year 2003-2009.

- Assumption: Switching to or from a preparer is unrelated to a change in the taxpayer’s predisposition to paying use tax

- Baseline Group: Taxpayer who did not hire a preparer in 2008 or 2009
  - If paid use tax in 2008, 78.8% probability paid use tax in 2009
  - If did not pay use tax in 2008, 4.4% probability paid use tax in 2009
## Switching between preparer and self-prepared (cont)

Probability of paying use tax in 2009 relative to baseline group

<table>
<thead>
<tr>
<th>Hired a paid preparer in:</th>
<th>Paid use tax in 2008?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>2003-07</td>
<td></td>
</tr>
<tr>
<td>Any year</td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>No</td>
</tr>
<tr>
<td>2009</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>-0.446</td>
</tr>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>-0.281</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>-0.214</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>-0.027</td>
</tr>
</tbody>
</table>
Use tax payment rates by preparer

- Examine the distribution of the fraction of returns with use tax payment by preparer
  - What does this distribution like if
    - Preparers do not influence use tax payment
    - Conditional on observables and hiring a preparer, taxpayers are randomly assigned to preparers with respect to their predisposition to pay use tax
  - What does this distribution actually look like?
Use tax payment rates by preparer (cont)

- Limit sample to preparers with 15-50 resident returns
- Estimate probability of each return paying use tax
- Create 450 replicate samples where each taxpayer pays use tax with this estimated probability; calculate fraction of each preparer’s clients who pay use tax
- Actual distribution:
  - Almost half of preparers do not have a single client who pays use tax, many other have just a few clients that pay
  - For 5.6% of preparers, the fraction of clients who pay use tax is 60 percentage points higher than predicted
- Simulated distribution: Does not have these tails!
Distribution of predicted and actual use tax payment rates by preparer

Actual

Simulated

Actual, positive only

Simulated, positive only
## Framing effects: Income tax balance

### Use Tax Payment Rate by Income Tax Balance

Estimates are relative to taxpayer with refund of less than $100

<table>
<thead>
<tr>
<th>Amount owe/refund</th>
<th>Refund due</th>
<th>Owe income tax</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1-$100</td>
<td>0.007</td>
<td>0.007</td>
</tr>
<tr>
<td>$101-$500</td>
<td>0.007</td>
<td>-0.003</td>
</tr>
<tr>
<td>$501-$1,000</td>
<td>0.013</td>
<td>-0.007</td>
</tr>
<tr>
<td>Greater than $1,000</td>
<td>0.030</td>
<td>-0.026</td>
</tr>
</tbody>
</table>
Framing effects: Filing Method

- Look at self-prepared returns only
- I-File= File on Maine Revenue Services web page
Use tax payment rate on income tax return
(Full-year Residents, Self-prepared, Positive MAGI, Claim an Exemption)
Probability of paying use tax On I-File return relative to paper filers
(Full-year Residents, Self-prepared, Positive MAGI, Claim an Exemption)

Unadjusted
Reg adj
Probability of paying use tax on E-File returns relative to paper filers

(Full-year Residents, Self-prepared, Positive MAGI, Claim an Exemption)
Switching filing method

- Balanced panel 2003-09, self-prepared each year
  - If the taxpayer paid use tax in the previous year, then:
    - Maintaining the same filing method maximizes the probability of use payment
    - Switching from paper to E-file associated with 16 percentage point drop in use tax payment probability (77% pay overall)
Switching filing method (cont)

- If the taxpayer did not pay use tax in the previous year, then:
  - Always at least one alternative filing method that increases the probability of paying use tax
    - For example, if I-file in the previous year and did not pay, then E-file and/or paper would increase probability of paying use tax
- Bottom line: Changing filing method increases your probability of changing whether or not you pay use tax
  - Suggests form design matters
Conclusion

- Generalizability?
  - Average positive use tax is about $50, 90th percentile is $95

- Form design matters is probably most generalizable result

- Would be nice if I had measures of true use tax liability or awareness of use tax obligations along several of the taxpayer attributes examined, such as charitable contributions