The Iowa Sales and Use Tax Incidence Model

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Outline

• Definition of sales tax incidence
• Features of the sales tax in Iowa
• US Census Consumer Expenditure Survey (CEX)
• Correcting misreporting in CEX
• Application of Iowa sales tax to CEX
• Assumptions made for model
• Model results
• Implications
• Limitations and next steps
Sales Tax Incidence Defined

- Tax incidence is who pays the tax
  - Buyers/Sellers
  - Employees/Employers
  - *Across income spectrum*
- Third incidence can be described as share of income paid in tax compared to other taxpayers
  - Progressive = average < marginal rate – e.g. income
  - Regressive = average > marginal rate – e.g. sales, excise
  - Some taxes are unclear – e.g. property
Sales Tax Considered Regressive

- Sales taxes generally considered regressive (Fullerton, Metcalf 2002)
- Rate is same regardless of income
- Cause is principally negative relationship between marginal income and marginal propensity to consume
- Some exemptions in place on necessities to reduce regressivity
  - Groceries
  - Clothing
Iowa Sales and Use Tax

- Rate is 6% plus local option tax of up to 1%
- Goods are taxable unless specified as exempt
- Services are exempt unless specified as taxable
- Extensive list of taxable services (88) including:
  - Appliance repair
  - Dance lessons
  - Electrical work
  - Plumbing
  - Telecommunications
  - Vehicle repair
Consumer Expenditure Survey (CEX)

- Rolling survey of expenditures, income, and demographics conducted by the US Census
- Published in two public-use microdata (PUMD) files
  - Interview – covering four quarters
  - Diary – covering two weeks
- Interview survey used in this analysis
- All entries assigned a six-digit code
  - Rent = 210110, Groceries = 790240, Gas (Renter) = 260211
- Business expenditures excluded
- Demographic, educational, income data available
CEX Underreporting

- Well-known that consumers do not report all expenditures on the CEX (Garner, McClelland, Passero, 2009)
- CEX and the BEA’s Personal Consumption Expenditure (PCE) estimates do not align
- Under-sampling of high-income individuals
- Varies by salience of item reported
  - Utilities (frequently paid) underreported by 2%
  - Televisions (infrequently purchased) underreported by 82%
- Varies by nature of item
  - Gasoline (frequently paid and neutral) underreported by 6%
  - Gambling (perceived vice) underreported by 95%
- Underreporting corrected using CE to PCE ratio in model
Applying Iowa Tax Law to CEX

- All CEX expenditures assigned to 68 categories
- Each of 68 coded as taxable or exempt
- Some problems
  - Newspapers exempt, magazines not – reported together
  - Remodeling exempt, repair not – reported together
  - Digital books exempt, physical not – reported together
Assumptions of the Model

- Used all national entries, not just Iowa or Midwest
- Expenditures aggregated for each individual
- “Iowa adjusted gross income (AGI)” calculated for each
- Results stratified based on AGI
- Excluded all entries under $3,000 AGI
- Created separate analysis for elderly, parents, couples, and homeowners
- Prices and income adjusted for inflation, but brackets are not
## Model Results

<table>
<thead>
<tr>
<th>Household &quot;Iowa AGI&quot;</th>
<th>Est. SUT Incidence</th>
<th>Groceries</th>
<th>Utilities</th>
<th>Gasoline</th>
<th>Legal Fees</th>
<th>Remodeling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $10,000</td>
<td>10.48%</td>
<td>8.08%</td>
<td>1.33%</td>
<td>1.41%</td>
<td>0.11%</td>
<td>0.37%</td>
</tr>
<tr>
<td>$10,000 to 20,000</td>
<td>4.32%</td>
<td>3.60%</td>
<td>0.58%</td>
<td>0.68%</td>
<td>0.08%</td>
<td>0.15%</td>
</tr>
<tr>
<td>$20,001 to 30,000</td>
<td>2.80%</td>
<td>2.34%</td>
<td>0.36%</td>
<td>0.47%</td>
<td>0.05%</td>
<td>0.09%</td>
</tr>
<tr>
<td>$50,001 to 60,000</td>
<td>1.82%</td>
<td>1.23%</td>
<td>0.20%</td>
<td>0.29%</td>
<td>0.03%</td>
<td>0.06%</td>
</tr>
<tr>
<td>$70,001 to 80,000</td>
<td>1.59%</td>
<td>0.99%</td>
<td>0.16%</td>
<td>0.24%</td>
<td>0.02%</td>
<td>0.07%</td>
</tr>
<tr>
<td>$100,001 to 125,000</td>
<td>1.44%</td>
<td>0.77%</td>
<td>0.12%</td>
<td>0.19%</td>
<td>0.02%</td>
<td>0.07%</td>
</tr>
<tr>
<td>$150,001 to 175,000</td>
<td>1.28%</td>
<td>0.60%</td>
<td>0.09%</td>
<td>0.14%</td>
<td>0.02%</td>
<td>0.09%</td>
</tr>
<tr>
<td>$250,001 to 500,000</td>
<td>1.13%</td>
<td>0.37%</td>
<td>0.06%</td>
<td>0.07%</td>
<td>0.01%</td>
<td>0.16%</td>
</tr>
<tr>
<td>$500,001 or more</td>
<td>0.96%</td>
<td>0.24%</td>
<td>0.04%</td>
<td>0.04%</td>
<td>0.02%</td>
<td>0.12%</td>
</tr>
</tbody>
</table>
Implications

- The sales tax is regressive
- In fact, the sales tax on almost everything is regressive
- Adding comparatively less regressive items can reduce average regressivity
Limitations and Next Steps

- Not yet applied to Iowa population
  - Need to match each CEX entry to Iowa income taxpayers
  - Need to correct for non-filers (elderly, students, undocumented immigrants, tourists)
- Cannot use for fiscal estimates (yet)
- Atemporal results are difficult to explain
- Granularity of diary results not yet incorporated
Questions? Suggestions?
References
