Estimating Tax Revenue Losses due to Remote Sales

Federation of Tax Administrators
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Outline

• Trends in e-commerce (E-stats)
• Bruce/Fox and DMA sales and use tax losses from e-commerce
• Estimates by states of their own losses
• Compare e-commerce loss estimates to use tax collections
  – Actual use tax data
  – Estimated use tax data
Use tax

- States with a sales tax have a compensating use tax.
- Use tax definitions vary across states.
- Who collects use tax?  *Quill, 1992*

Census E-Stats Data Coverage

- 1999 - present
- E-Stats data are national.
- E-Stats do not cover the entire U.S. economy.
- E-commerce measures Internet, EDI (Electronic data interchange), etc.
E-stats are based on data collected in 5 surveys (not additive)

<table>
<thead>
<tr>
<th>Description</th>
<th>Value of Shipments, Sales or Revenue ($ billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>16,648</td>
</tr>
<tr>
<td>B-to-B*</td>
<td>8,296</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>3,980</td>
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<tr>
<td>Merchant Wholesale</td>
<td>4,316</td>
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<tr>
<td>B-to-C*</td>
<td>8,352</td>
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<tr>
<td>Retail</td>
<td>3,275</td>
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<tr>
<td>Selected Services</td>
<td>5,077</td>
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</table>

*The B-to-B and B-to-C breakdown was estimated by the Census Bureau and was not directly measured.

E-Stats Data, 2003

- 94% of e-commerce sales were B-to-B
- Only 1.7% of retail sales were e-commerce
- EDI (Electronic data interchange) is important for businesses
  - 86% of merchant wholesale e-commerce sales were EDI
Retail E-Commerce is growing…

Estimated Quarterly U.S. Retail Sales: E-Commerce

...and replacing mail order sales

Estimated Annual Retail "Remote Sales" Using Electronic Shopping and Mail-Order Houses in the United States

Source: U.S. Census Bureau.
Compare Electronic “Retail Sales” - Shop.org and Census Bureau estimates

<table>
<thead>
<tr>
<th>Comparison of Estimates for Electronic “Retail Sales” 2003</th>
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<tbody>
<tr>
<td>(Online) (E-commerce) Retail Sales ($ Billions)</td>
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<tr>
<td>Shop.org, Forrester Research Census Bureau E-Commerce</td>
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<tr>
<td>Census Bureau E-Commerce</td>
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</tbody>
</table>

Source: Shop.org data - Sacramento Bee, June 8, 2004 Section D. U.S. Census Bureau, E-Commerce Multi-Sector Historical Data Tables, 2003 Annual Retail Trade Survey.

Recent tax loss estimates
45 states plus the District of Columbia

<table>
<thead>
<tr>
<th>Compare Estimates: 2003 and 2008</th>
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$ billions

DMA Bruce/Fox low-growth Bruce/Fox high-growth

45 states + District of Columbia
Tax Loss Estimates

- Calculate base sales
  - E-commerce sales (Internet, EDI, etc.)
- Taxability (exempt sales)
- Compliance
- Calculate sales resulting in loss
- Apply state (+ local) tax rates
- Projections: e-commerce growth assumption

Taxability and compliance

- Consumer use tax compliance, very low
- Most business transactions are not subject to sales or use tax
  - Inputs to production processes
  - Purchases for resale
- AUDIT => (large) businesses…higher use tax compliance than small businesses or households
B-to-C E-Commerce

B-to-C: Compare E-Commerce Estimates

Data were adjusted to include only states with sales taxes.

B-to-B E-Commerce, low

B-to-B: Compare E-Commerce Estimates

Bruce/Fox Low-Growth Scenario Base

Data were adjusted to include only states with sales taxes.
B-to-B: Compare E-Commerce Estimates

Bruce/Fox High-Growth Scenario Base

Differences in Estimates:
DMA - Bruce/Fox

Taxability and Compliance Assumptions

B-to-C: Services
B-to-B: Adjustments to E-Commerce Data for EDI, Interplant Sales and Services

Projected growth in E-commerce
Differences in estimates

States use different methods to estimate losses

- Use tax non-compliance (audit businesses)
- E-commerce
  - B2C
  - B2B
    - B2B (Internet): DMA, E-stats data
    - B2B (E-commerce): Bruce/Fox, Forrester data
  - State taxable retail sales; apply % of retail sales that are e-commerce
- Remote Sales (E-commerce + Mail Order)
  - B2C + Mail Order
  - B2C + B2B + Mail Order
- Sales and use tax losses
  - (losses from retail e-commerce + Mail Order)
  - + Other losses...use tax non-compliance rate for business

Note: DMA estimates as published; Bruce/Fox breakdown as calculated by author.
### Independent State Estimates:
#### E-commerce and Remote Sales

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*The Washington (02) remote sales estimate is for consumers only.*

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**How do 2003 state estimates compare with Bruce/Fox and DMA?**

- Hard to compare…
- Most states only estimate B2C and/or mail order…
- Alabama estimate is higher than Bruce/Fox
Examples of state methods

• Minnesota Tax Gap Study – American Economics Group - databases of transaction and audit data…input-output approach

• Alabama – survey of middle-income consumers


• Several States - Retail e-commerce as a % of taxable retail sales.

• Wisconsin, Michigan – Combine retail e-commerce/mail order loss estimates with (business) use tax non-compliance rates

Step 1: Estimate sales and use tax losses on retail e-commerce and mail order sales (consumers and business final purchases) …national Census data
  – State share of national retail e-commerce and mail order sales
  – Assumption about % with tax collected

Step 2: Estimate other losses (business)
Step 2: other losses (business)

- Adjust collected use tax to exclude tax on retail sales and on occasional sales of motor vehicles
- Calculate uncollected use tax using use tax compliance rate

Example:

- Collected use tax (adjusted) = $100m
- Use tax compliance = 72%
- Total use tax = $100m/0.72 = $139m
- Uncollected use tax = $39m

For Minnesota, compare collected use tax vs. uncollected loss ($ million)

<table>
<thead>
<tr>
<th>2003 loss estimates</th>
<th>E-commerce</th>
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<tbody>
<tr>
<td>Bruce/Fox</td>
<td>$331 m - $345 m</td>
</tr>
<tr>
<td>Minnesota</td>
<td>$133.9 m*</td>
</tr>
<tr>
<td>DMA</td>
<td>$50.9</td>
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</tbody>
</table>

MN use tax revenue (2003) = $238.9 million

*Note: In 2000, 81% of the e-commerce gap was use tax; 19% sales tax. E-commerce gap was all non-filers (not underreporting).
Compare collected vs. uncollected tax across states

- Loss estimates
- Actual use tax revenue
- Estimated use tax revenue

Data Collection: 45 states with sales tax

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<thead>
<tr>
<th></th>
<th>yes</th>
<th>no</th>
<th>in progress</th>
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<tbody>
<tr>
<td>Use tax</td>
<td>29</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Loss estimate</td>
<td>14*</td>
<td>20</td>
<td>11</td>
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</table>

2 loss estimates (IL, AL) are not from official state sources.
Use tax definitions and data collection vary across states

Use Tax as a Percentage of Sales and Use Tax Collections
Year: 2003 (for most states)

Actual Use Tax Data compared with Loss Estimates: DMA, BruceFox low, 2003
Adjusted state sales tax data to estimate use tax data across states

2003 Adjusted General State Sales & Gross Receipts Tax Collections ($ Millions)

1. ALABAMA* AL 1,994 23 MISSOURI MO 2,317
2. ARIZONA* AZ 4,287 24 NEBRASKA* NE 1,426
3. ARKANSAS AR 1,951 25 NEVADA NV 2,192
4. CALIFORNIA CA 24,899 26 NEW JERSEY NJ 5,936
5. COLORADO CO 1,833 27 NEW MEXICO* NM 1,491
6. CONNECTICUT CT 3,065 28 NEW YORK* NY 8,507
7. FLORIDA* FL 13,078 29 NORTH CAROLINA* NC 3,992
8. GEORGIA* GA 4,738 30 NORTH DAKOTA* ND 429
9. HAWAII HI 1,707 31 OHIO OH 6,761
10. IDAHO ID 842 32 OKLAHOMA OK 1,503
11. ILLINOIS IL 6,613 33 PENNSYLVANIA PA 7,561
12. INDIANA IN 4,210 34 RHODE ISLAND* RI 796
13. IOWA IA 1,726 35 SOUTH CAROLINA* SC 2,576
14. KANSAS KS 1,888 36 SOUTH DAKOTA* SD 483
15. KENTUCKY* KY 2,820 37 TENNESSEE* TN 5,414
16. LOUISIANA* LA 2,776 38 TEXAS* TX 17,409
17. MAINE ME 857 39 UTAH UT 1,485
18. MARYLAND* MD 3,406 40 VERMONT* VT 316
19. MASSACHUSETTS MA 3,708 41 VIRGINIA* VA 3,301
20. MICHIGAN* MI 7,652 42 WASHINGTON* WA 6,006
21. MINNESOTA* MN 4,904 43 WEST VIRGINIA* WV 1,139
22. MISSISSIPPI* MS 2,464 44 WISCONSIN* WI 3,743
23. MISSOURI MO 2,317 45 WYOMING WY 423

Source: Tax Facts: Sales Tax Data: States, July 2004

*Adjusted state sales tax figures were adjusted for comparability across states.
Compare estimated use tax to e-commerce losses, 2003

2003: Compare DMA, Bruce-Fox low-growth and Estimated State Use Tax (7% of state SUT)

Implications of states’ inability to collect all use taxes due

- Loss of state and local government revenue. Losses are projected to increase due to growth in e-commerce.
- Firms have an incentive to locate production and sales activity to avoid tax collection responsibility => efficiency losses
- Entity isolation
- Equity: Sales tax becomes more regressive as online sales grow if everyone doesn’t have equal online access.
- Level playing field: Bricks vs Clicks
Bibliography

- California State Board of Equalization, Research and Statistics Section. Revenue Estimate: Electronic Commerce and Mail Order Sales. Draft to be Released.

Contact information

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