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Estimating Tax Revenue Losses due to Remote Sales

Federation of Tax Administrators
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CALIFORNIA RESEARCH BUREAU

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)

U.S. Shipments, Sales, Revenues and E-Commerce: 2003

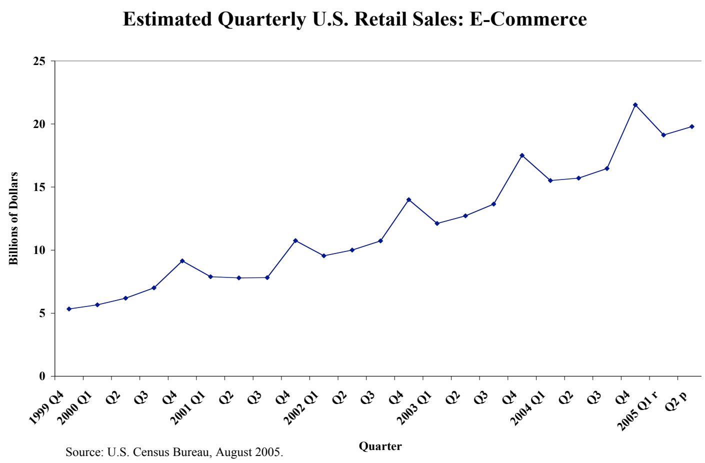
Description	Value of Shipments, Sales or Revenue ($ billions) Total	E-Commerce
Total	16,648	1,679
B-to-B*	8,296	1,573
Manufacturing	3,980	843
Merchant Wholesale	4,316	730
B-to-C*	8,352	106
Retail	3,275	56
Selected Services	5,077	50

Source: U.S. Census Bureau, *E-stats: E-Commerce 2003 Highlights*, May 2005.
*The B-to-B and B-to-C breakdown was estimated by the Census Bureau and was not directly measured.

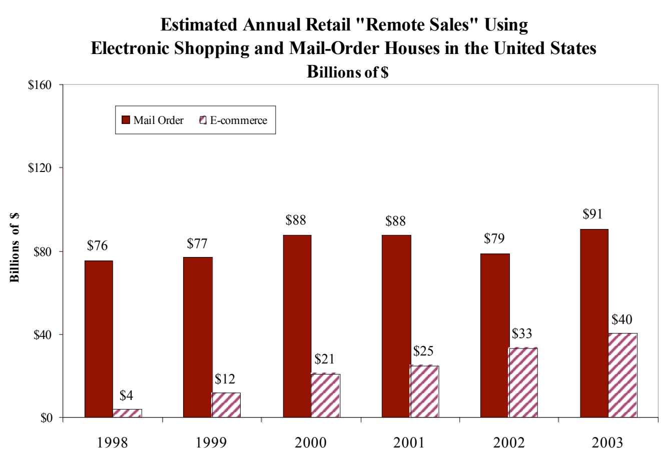
E-Stats Data, 2003

- 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…



…and replacing mail order sales

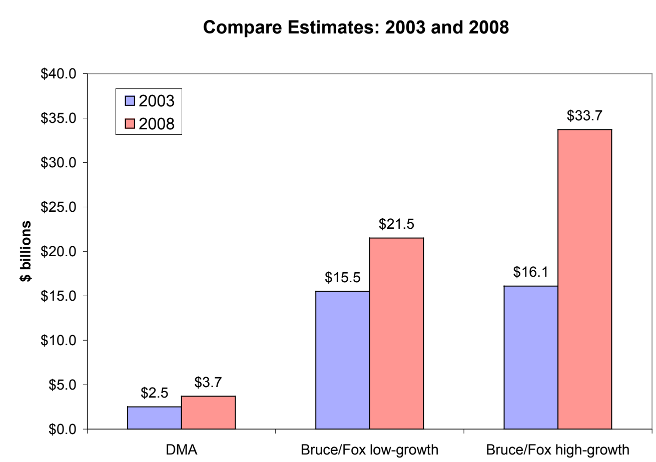


Compare Electronic “Retail Sales” - Shop.org and Census Bureau estimates

Comparison of Estimates for Electronic “Retail Sales” 2003			
	(Online) (E-commerce) Retail Sales ($ Billions)	Annual Growth	Percent of Total Retail Sales
Shop.org, Forrester Research	**$114.1**	**51%**	**5.4%**
Census Bureau E-Commerce	**$55.7**	**25%**	**1.7%**
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



45 states + District of Columbia

Tax Loss Estimates

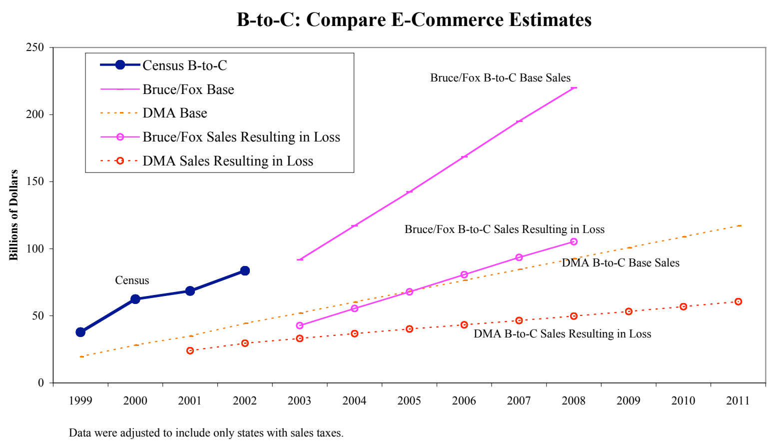
- Calculate base sales
  - E-commerce sales (Internet, EDI, etc.)
- Taxability (exempt sales)
- Compliance
- Calculate sales resulting in loss
- Apply state (+ local) tax rates

- Projections: e-commerce growth assumption

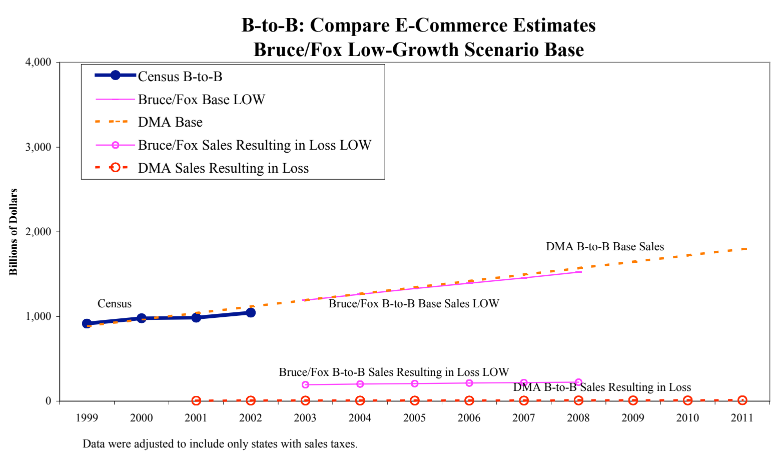
Taxability and compliance

- 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

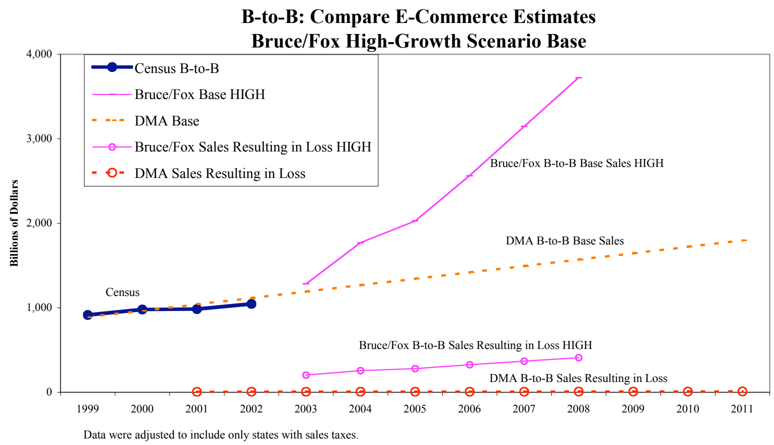
B-to-C E-Commerce



B-to-B E-Commerce, low



B-to-B E-Commerce, high



Differences in Estimates: DMA - Bruce/Fox

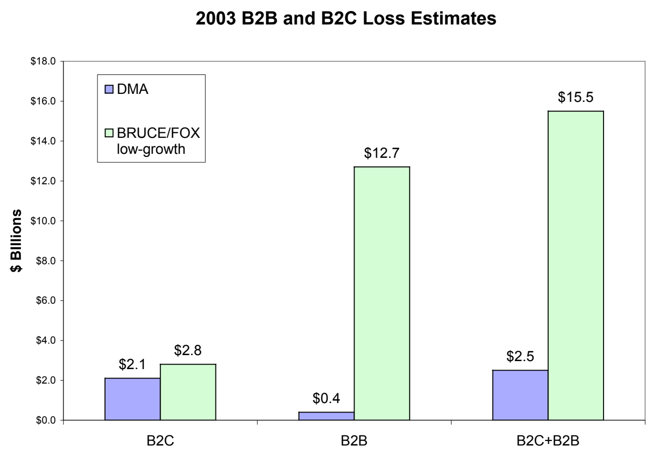
Taxability and Compliance Assumptions

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



Note: DMA estimates as published; Bruce/Fox breakdown as calculated by author.

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

Independent State Estimates: E-commerce and Remote Sales

B2C	B2B	B2C+B2B	Mail Order	Remote Sales
CA (03)	CA (03)	CA (03)	CA (03)	CA (03)
MN (00)	MN (00)	MN (00)	MN (00)	MN (00)
		MN (03)		
IL (02)			IL (02)	IL (02)
PA (98)			PA (98)	PA (98)
PA (03)				
MI (03)			MI (03)	MI (03)
WI (03)			WI (03)	WI (03)
				WA (02)*
				ME (03)
				WV (02)
		VT (03)		
AL (03)				
TX (03)			TX (03)	TX (03)
		SC (05)	SC (05)	SC (05)

Except for Illinois and Alabama, these are official state estimates.

(State only) *vs* (State + Local)

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

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
- California – B2C + B2B – research on the B2B estimates
- 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)

2003 loss estimates	E-commerce
Bruce/Fox	$331 m - $345 m
Minnesota	$133.9 m*
DMA	$50.9

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

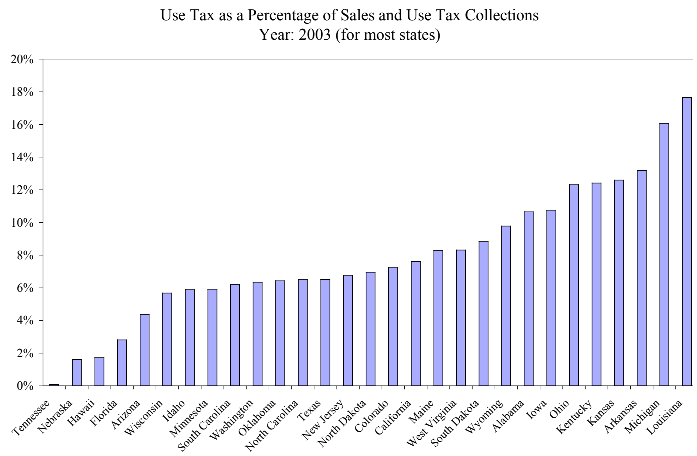
- Loss estimates
- Actual use tax revenue
- Estimated use tax revenue

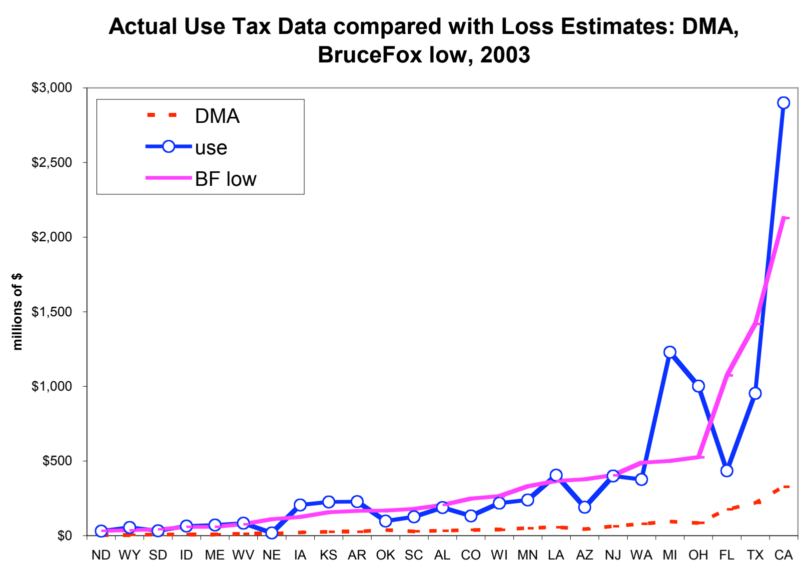
Data Collection: 45 states with sales tax

	yes	no	in progress
Use tax	29	6	10
Loss estimate	14*	20	11

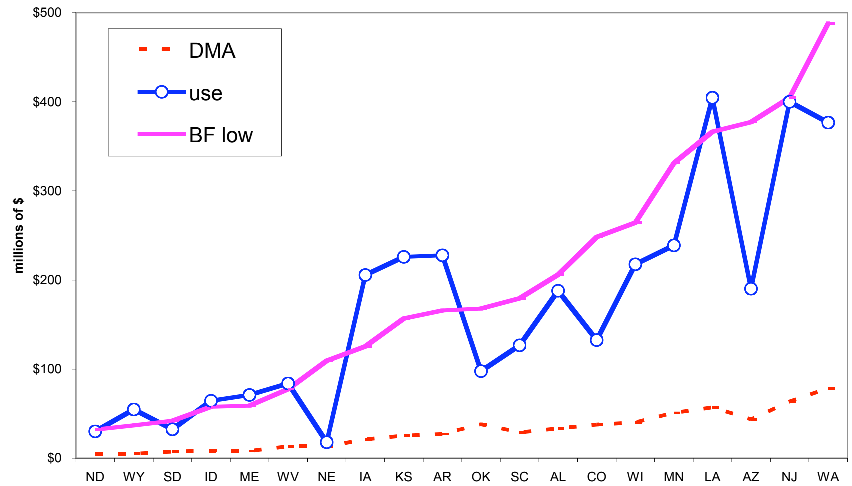
2 loss estimates (IL, AL) are not from official state sources.

Use tax definitions and data collection vary across states





Actual Use Tax Data compared with Loss Estimates: DMA, BruceFox low-growth, 2003



Adjusted state sales tax data to estimate use tax data across states

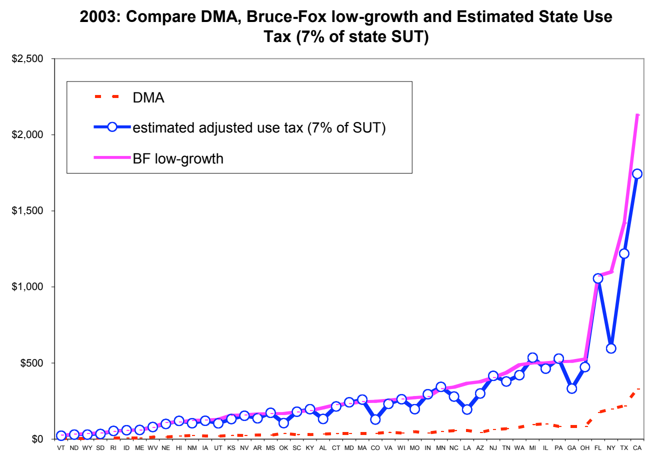
2003 Adjusted General State Sales & Gross Receipts Tax Collections ($ Millions)

1 ALABAMA*	AL	1,894	23 MISSOURI	MO	2,819
2 ARIZONA*	AZ	4,287	24 NEBRASKA*	NE	1,420
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	15,078	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	766
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	1,487
18 MARYLAND*	MD	3,4605	40 VERMONT*	VT	316
19 MASSACHUSETTS	MA	3,708	41 VIRGINIA*	VA	3,305
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	3,741
			45 WYOMING	WY	425

Source: John L. Mikesell, *State Tax Notes*, July 2004.

*Asterisk denotes tax receipts were adjusted for comparability across states.

Compare estimated use tax to e-commerce losses, 2003



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

- American Economics Group, Inc., *Minnesota Sales and Use Tax Gap Project: Final Report,* November 19, 2002. http://www.taxes.state.mn.us/legal_policy/research_reports/content/tax_gap_study.shtml.
- Bruce, Donald and William F. Fox. *State and Local Sales Tax Revenue Losses From E-Commerce: Estimates as of July 2004*. Knoxville, Tennessee: Center for Business and Economic Research, July 2004. http://www.nga.org/cda/files/0407ECOMMERCE.pdf http://cbaweb2a.bus.utk.edu/cber/ecomm/Ecom0704.pdf. Also published in *State Tax Notes*, August 16, 2004.
- California State Board of Equalization, Research and Statistics Section. *Revenue Estimate: Electronic Commerce and Mail Order Sales*, Draft to be Released.
- Civic Federation (The). *The Potential Impact of the Streamlined Sales and Use Tax Agreement on Illinois*. Chicago, Illinois: the Federation, October 18, 2004. http://www.civicfed.org/articles/civicfed_157.pdf.
- Haas, Mark P. and Andrew Lockwood, *Tax Revenue Loss Estimates for Consumer Remote Sales*, Michigan Department of Treasury, April 2001.
- Johnson, Peter A. *A Current Calculation of Uncollected Sales Tax Arising From Internet Growth*. New York: Direct Marketing Association, March 11, 2003. http://www.thedma.org/taxation/CurrentCalculationofUncollectedSalesTax.pdf.
- Jones, Martha. The Streamlined Sales and Use Tax Agreement: A California Perspective, California Research Bureau, February 2005. http://www.library.ca.gov/crb/05/01/05-001.pdf http://www.library.ca.gov/html/statseg2a.cfm
- Michigan Department of Treasury, Bureau of Tax and Economic Policy, Tax Analysis Division. Michigan's Sales and Use Taxes 2004, June 2005, Pages 8, 25-34. http://www.michigan.gov/documents/SUWReport_June2005_129823_7.pdf
- Mikesell, John L. "State Retail Sales Tax Burdens, Reliance, and Breadth in Fiscal 2003." *State Tax Notes,* July 12, 2004.
- Pennsylvania Department of Revenue. "The Impact of Electronic Commerce on Pennsylvania Sales and Use Tax: February 2000 Update." Harrisburg, PA: The Department, February 2000. http://www.revenue.state.pa.us/revenue/lib/revenue/ecommerceimpact.pdf.
- Singleton, Tommie W., Brett A King, and Aaron J. Singleton. "Internet Sales Tax: A Survey of Revenues Lost to Alabama," *State Tax Notes*, January 10, 2005. http://www.business.uab.edu/FACULTY/TSingleton/Research/State%20Tax%20Notes/State.Tax.Notes-Internet.Sales.Tax.pdf
- United States General Accounting Office. *Sales Taxes: Electronic Commerce Growth Presents Challenges; Revenue Losses are Uncertain*, June 30, 2000. GAO/GGD/OCE-00-165.
- United States General Accounting Office. *Update on State and Local Revenue Loss From Internet Sales*, November 6, 2001. GAO-02-83R.
- Washington State Department of Revenue. *Department of Revenue Compliance Study*, Olympia, Washington: The Department, January 17, 2003. http://dor.wa.gov/Docs/Reports/Compliance_Study/compliance_study_2003.pdf, http://dor.wa.gov/docs/pubs/news/2003/nr_03_01_%20usetxnoncompliance.pdf
- Wisconsin Department of Revenue, Division of Research and Policy. *Estimated Fiscal Effect of E-Commerce and Other Remote Sales*, July 3, 2003.

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