Factors Influencing Use Tax Payment in Illinois

Prepared for Presentation at
"Tax Administration at the Centennial: An IRS-TPC Research Conference"
Urban Institute, 2100 M Street, N.W., Washington, DC
June 20, 2013

Preliminary: Please do not quote or cite without authors' permission.

Names and affiliations of all authors: Joanna Koh (joanna.koh@illinois.gov) Economist Research Division, Illinois Department of Revenue, **David Merriman** (dmerrim@uic.edu) (312) 996-1381, Professor University of Illinois Chicago, Hector M. Vielma, (Hector.Vielma@illinois.gov) Economist, Research Division, Illinois Department of Revenue

Outline of Talk

1. Introduction
2. Previous Literature
3. Descriptive statistics about Illinois use tax payments
4. Cross-tabular evidence about tax-filer characteristics that influence the probability of Illinois use tax payment
5. Regression evidence about tax-filer characteristics that influence the probability of Illinois use tax payment
6. Conclusion

Introduction

- **Goal**
  - Understand compliance with a *nearly* voluntary tax
  - Demonstrate the value of collaboration btwn IDOR and academic researchers
- **Illinois Use Tax Facts**
  - Understanding arcane language, sales tax, occupation tax, use tax
  - Use tax is 6.25% on tangible goods purchased out-of-state without paying equivalent sales taxes, 1% on foods, drugs, medical appliances purchased out-of-state, consumed in state
  - File via ST-44 prior to 2010, on IL-1040 since then
  - Delineate purchases or use "lookup table" at 0.06% of FAGI to compute liability
  - Must file sooner if tax is >$600
- **Research strategy**
  - Use data from IL-1040 in 2010 and 2011 to understand factors that influence use tax payment

2. Previous Literature

- **Einav et al. (2012**) study the sensitivity of Internet retail purchasing to sales taxes
- **Alm and Melnik (2012)** find that 94% of eBay purchases are out-of-state buyers; estimate $41 million Illinois use tax liabilities from eBay purchases alone
- **Chupick and Davila (2011)** estimate total Illinois use tax liabilities of $210 million
- **Manzi (updated 2012)**
  - 25 states have use tax line on income tax form
  - non-zero use tax payment varies from 0.3 in California to 9.8 in Maine.
  - non-zero use tax payment is 3.1% on average in states with a lookup table but only 0.6% in states without a lookup table
- **Gunter (2011)** studied Maine's income-tax returns from 2003-09
  - 11 to 13% of returns have non-zero use tax
  - taxpayers who used a paid preparer are roughly 8% less like to pay use tax
  - small business owners are slightly more likely to pay use taxes
  - taxpayers who make a voluntary charitable or political contribution are 23% more likely to pay use taxes
  - the probability of a positive use tax payment increases with the refund due.

3. Descriptive statistics about Illinois use tax payments

- **Table 1**—seems to be little substitutability between ST-44 and IL-1040 use tax payments
- **Figure 1**—Use tax generates much less revenue than would be implied by use tax lookup table
- **Table 2**—use tax payments are persistent

Table 1
Illinois Use Tax Payments Before and After a Use Tax Payment Option Was Added to Personal Income Tax Return Form

CALENDAR YR	Number of ST-44 returns	Total use tax payment on ST44 returns (millions of $s)	Number of IL1040 returns	Number of IL-1040 returns with non-zero use tax payment	Total use tax payment on IL-1040 returns (millions of $s)
2005	1,857	2.58	na	np	np
2006	4,520	4.00	na	np	np
2007	6,366	5.26	na	np	np
2008	9,801	4.86	na	np	np
2009	8,055	5.34	na	np	np
2010	6,415	6.09	4,747,133	242,412	10.22
2011	27,618	8.12	5,124,947	239,900	10.92
2012	4,256	5.94	na	na	na

Notes: na=not available, np=not possible. Analysis of IL-1040 is restricted to 5,124,947 matched returns in 2010 and 2011. Dependents, returns with over $1mm FAGI, returns with zero or negative FAGI and returns of non-residents are dropped from the analysis. Prior to 2010 it was not possible to make a use tax payment on the IL1040 form. The large number of ST-44 returns in 2011 is the result of a use tax amnesty in that year. Details are discussed in http://tax.illinois.gov/Amnesty/Amnesty-FAQs-Use-Tax.htm.

Figure1

Use Tax (UT) Table

If you had no major purchases and you do not have receipts to figure your purchases, use this table to estimate your annual Illinois Use Tax liability.

AGI (from IL-1040, Line 1)	**Use Tax**
$0 - $10,000	$3
$10,001 - $20,000	$9
$20,001 - $30,000	$15
$30,001 - $40,000	$21
$40,001 - $50,000	$27
$50,001 - $75,000	$38
$75,001 - $100,000	$52
Above $100,000	Multiply AGI by 0.06% (0.0006)

Table 2. Cross-tabulation of 2010 and 2011 Use Tax Payments by Illinois Tax Filers

	Category	No matching 2010 return	Amount of use tax payment on 2010 income tax return						TOTAL 2010 returns
			No Use Tax Payment	$1 to 50	$51 to $100	$101 to $300	$301 to $600	over $600	
	No matching 2011 return		685,031	13,757	1,355	464	56	14	700,677
Amount of use tax payment on **2011** income tax return	No Use Tax Pmt	657,910	4,896,250	85,483	19,107	5,472	687	151	5,007,150
	$1 to $50	11,559	72,200	82,489	8,525	1,824	152	8	165,198
	$51 to $100	1,014	20,471	10,523	24,753	2,538	164	22	58,471
	$101 to $300	349	6,531	2,114	3,359	8,179	477	28	20,688
	$301 to $600	33	804	161	165	672	725	33	2,560
	over $600	12	219	35	28	76	111	79	548
	TOTAL 2010 returns								5,955,292
	TOTAL 2011 returns	670,877	4,996,475	180,805	55,937	18,761	2,316	321	5,925,492

Notes: Each cell shows the number of Illinois tax returns with characteristics in column and row headings. The greyed cells inside the black box represent returns of taxpayers present in both 2010 and 2011. The first row of numbers and the left-most column of numbers show the number of tax returns that were present in only one of the years. For example there were 685,031 returns with no use tax payment in 2010 and no matching return in 2011. Similarly there were 657,910 tax returns with no use tax payment in 2011 and no matching return in 2010.

Note: For technical reasons, data used in constructing this table does NOT exclude tax filers who are dependents, have FAGI over $1 million, have zero or negative FAGI or are non-residents.

4. Cross-tabular evidence about tax-filer characteristics that influence the probability of Illinois use tax payment

- **Table 3**—60% of use tax payers simply pay exactly the amount implied by the lookup table
- **Table 4**—returns filed by paid preparers are less likely to have an non-zero use tax payment
- **Table 5**—Mixed evidence about whether switching to a paid preparer changes the probability of paying a use tax

Table 3

Actual use tax payment compared to amount suggested by use tax lookup table

Tax Year	Use Tax Taxpayer Total	Paid Same as Lookup Table	Paid More than Lookup	Paid Less than Lookup
2010	242,412	57%	6%	37%
2011	239,900	58%	6%	36%

Note: Dependents, returns with over $1mm FAGI, returns with zero or negative FAGI and returns of non-residents are dropped from the analysis.

Table 4
Paid preparers and use tax payments

	Tax Year 2010			Tax Year 2011	
	All Tax Filers	Use Tax Filers	% that Paid Use Tax	All Tax Filers	Use Tax Filers
Self-prepared	37.7%	45.6%	6.2%	38.2%	5.8%
Paid Preparer	62.3%	54.4%	4.5%	61.8%	3.6%

Note: Dependents, returns with over $1mm FAGI, returns with zero or negative FAGI and returns of non-residents are dropped from the analysis.

Table 5
Use tax payment among those who switched from self prepared to paid preparer returns and vice-versa

2010 use tax payment	Preparation Mode		Share of returns with a use tax payment in 2011
	2010	2011	
No	self	Preparer	2.3%
	Preparer	self	1.7%
Yes	self	Preparer	18.0%
	Preparer	self	25.0%

Note: Data includes all returns matched in 2010 and 2011.

5. Regression Evidence

- **Table 7 regression results**
  - Probability of paying use tax in 2011 is
    - 2% conditional on not paying use tax in 2010 ,
    - 58% conditional on paying use tax in 2010
    - This hardly changes when we add more control variables
  - Probability of paying use tax increases slowly with income but rises rapidly at high incomes
  - Filing a self-prepared return has a relatively large impact on payment probability
  - The select group (0.5%) that make voluntary donations also are much more likely to pay use tax
  - Filing type is associated with use tax payment in intuitive ways, for example single parents less likely to pay use tax
  - Living in a border county matters little
  - Little evidence that having a refund due matters as we might expect if "loss aversion" was important

Table 6
Descriptive Statistics of Key Variables Used in the Analysis

	Minimum	Maximum	Mean	Std. Deviation	Notes
Dependent Variable					
UT_11	0	1	0.047	0.211	1=paid use tax in 2011, 0=not paid
Independent Variables					
UT_10	0	1	0.051	0.220	1=paid use tax in 2010, 0=not paid
agi_2011	1	999,823	62,574	76,695	Federal adjusted gross income
TAXPREP2011	0	1	0.62	0.49	1=used paid tax preparer; 0=self prepared
FINAL_REFUND_2011	-173,372	621,421	67	1,384	positive=refund due; negative=tax pmt due to the state
COUNTY2011	0	1	0.66	0.47	1=border county, 0=non border county
DONATION_DUM_2011	0	1	0.004	0.067	1=paid check-off donation, 0=not paid

(Based on 5,124,947 IL1040 matched returns in 2010 and 2011 dependents, returns with over $1mm AGI, returns with zero or negative AGI and returns of non-residents are dropped from the analysis.)

Table 6 continued
Descriptive Statistics About Filing Status

		Frequency	Percent
Valid	JOINT	2,103,322	41.0
	DEATH	16,104	0.3
	MARRIED FILING SEPARTELY	63,263	1.2
	SINGLE	2,932,581	57.2
	WIDOW	9,677	0.2
Total		**5,124,947**	**100.0**

Table 7
Illinois Use Tax Regression Results

Dependent Variable	2011 Use Tax Dummy:							
Data:	2010, and 2011 Illinois individual income tax returns; no dependent, none with over $1mm AGI, none with zero or negative AGI							
	excluding non-resident, those with zero or negative AGI or AGI > $1mm, dependents							
Number of Records	5,124,947							
		MODEL						
VARIABLE	VARIABLE	**I**	**II**	**III**	**IV**	**V**	**VI**	**VII**
	Intercept	0.021	-0.088	-0.081	-0.081	-0.064	-0.0635	-0.063
2010 USE TAX PMT	2010 use tax dummy 0=no; 1=use tax paid	0.556	0.550	0.549	0.549	0.548	0.548	0.548
	Federal AGI							
2011 ASYM_LOGAGI	LOG_AGI		0.010	0.010	0.010	0.009	0.009	0.009
	ASYM_LOG =0 if FAGI<$250,000 ln(FAGI) if FAGI>$250,000		0.001	0.001	0.001	0.001	0.001	0.001
2011 Tax Preparer	Paid preparer dummy 0=no, 1=paid preparer			-0.011	-0.010	-0.010	-0.010	-0.010
2011 DONATION - CHECK-OFF	Donation dummy 0=no, 1=yes				0.037	0.037	0.037	0.037
	Filing Status							
2011 FILING TYPE	Single					omitted	omitted	omitted
	Head of household					-0.010	-0.010	-0.010
	Joint filing					0.004	0.004	0.004
	Separate filing					-0.002	-0.002	-0.002
	Widow					0.007	0.007	0.007
	Deceased					-0.005	-0.005	-0.005
Border County	Border county dummy 0=no; 1=yes						-0.001	-0.001
	Refund							
FINAL_REFUND_2011	REFUND_DUE positive=refund, neg=tax pmt							-0.00000035
PMT_ASYM_2011	REFUND_DUE * PMT_ASYM_DUM 1=Refund_DUE>0, 0=REFUND_DUE<0							0.00000123

*T statistics for all coefficients are greater than three except for separate which has a T statistic of 2.6 in columns V and VI and 2.8 in column VII. R-squareds are about .57 for all regressions.

6. Conclusion

- We cannot make definitive causal statements because most of our independent variables are not plausibly exogenous
- Our descriptive analysis concludes that
  - A small fraction of filers pay the use tax—use tax payments are probably much less than use tax liabilities
  - Our results are generally consistent with Gunter's (2011) findings using data from Maine
  - By far the most important variable determining payment is persistence—those who paid in 2010 are much more likely to pay in 2011
  - The amount suggested by the lookup table is the exact amount paid by about 60% of those who pay the use tax