Stanford University • January 2013

SIEPR
CELEBRATING 30 YEARS OF EXCELLENCE
policy brief

Stanford Institute for Economic Policy Research

on the web: http://siepr.stanford.edu

Leveling the Playing Field? Tax Collection and Online Purchases

By Liran Einav, Dan Knoepfle, and Jonathan Levin

The tax treatment of online purchases has become a frequent topic in public policy debates. The current legal environment effectively makes a large fraction of online retail tax-free, at a time when there is significant pressure on state and local governments to generate tax revenues. In this short essay we explain the current situation and summarize various proposals that are being discussed and their possible economic impact.

I. The current tax regime

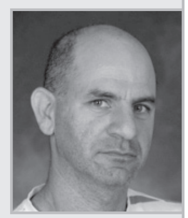
In conventional retail sales, sellers must collect the applicable state and local sales tax. When a buyer purchases from an out-of-state seller, however, the buyer's home state cannot compel the seller to collect sales tax. Instead, states require buyers to self-report and pay an equivalent "use tax." While this conceivably might amount to the same thing, use tax compliance is extremely limited and is estimated to be only in the single digits.

This somewhat odd regime dates to two Supreme Court decisions related to mail-order sales [National Bellas Hess, 386 U.S. 753, 1967; Quill, 504 U.S. 298, 1992]. In these decisions, the Court noted that there are more than 8,000 different entities that impose sales taxes. Each of these entities may differ in tax rates, bases, and administrative rules—including filing, registration, exemptions, sourcing sales, and audits. Asking firms to keep track of all these different tax rates, rules, and regulations would be so difficult and costly for them that it would amount to an unconstitutional restraint of interstate commerce.

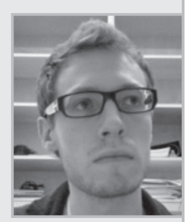
Merchants are classified for tax purchases according to whether they have a physical presence (known as "nexus") in a given state. The 1998 Internet Tax Nondiscrimination Act made it explicit that Web presence alone does not constitute nexus, placing online commerce in an analogous situation to mail-order sales. As a result, "brick and click" retailers, such as Wal-Mart, Best Buy, or Barnes and Noble, that have stores in essentially every state must collect sales tax on their online sales. However,

continued on inside...

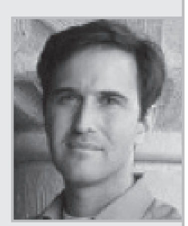
About The Authors



Liran Einav is a professor of economics at Stanford University, a research associate of the NBER, a fellow of the Econometric Society, and a SIEPR Senior Fellow. Einav's areas of specialization are industrial organization and applied microeconomics, with particular focus on insurance markets. Einav is co-editor of the American Economic Journal: Applied Economics and serves on the editorial board of several other journals. He received his undergraduate degree in computer science and economics from Tel Aviv University (Israel) in 1997 and his PhD in economics from Harvard University in 2002.



Dan Knoepfle is a PhD student in the economics department at Stanford University. His research focuses on online markets and on experimental studies of strategic behavior. He received his undergraduate degree in economics from Caltech in 2007.



Jonathan Levin is the Holbrook Working Professor of Price Theory and Chair of the Department of Economics at Stanford University. His research is in the field of industrial organization, particularly the economics of contracting, organizations, and market design. He is a fellow of the Econometric Society and a SIEPR Senior Fellow. In 2011, he received the John Bates Clark Medal. He received his PhD in economics from M.I.T., an MPhil in economics from Oxford University, and BA and BS degrees from Stanford.

Disclosure: Some of the findings discussed in this brief come from a collaboration between the authors and researchers at eBay. Any opinions expressed here are solely those of the authors.

smaller online retailers, such as sellers on eBay or other e-commerce platforms, and large Internet-only retailers, such as Amazon or Newegg, must collect tax on relatively few of their online sales.

When the Internet was new, some argued that a favorable tax treatment would facilitate the growth of online commerce. Indeed, online retail has grown very rapidly over the last 15 years (Figure 1). From the perspective of states with stressed budgets, this translates into forgone tax revenue. Sales and use taxes on retail purchases are substantial in many states (Figure 2) and make up the largest single component of overall state tax revenue, more than 30 percent. Estimates suggest that the "missing" taxes on Internet sales could amount to $10 billion a year (Bruce et al., 2009; Eisenach and Litan, 2010; Maguire, 2011). Figure 3 illustrates how the amount of uncollected sales tax on online transactions varies across states, as compared with overall state budgets.

Figure 1. **The Growth of E-Commerce**

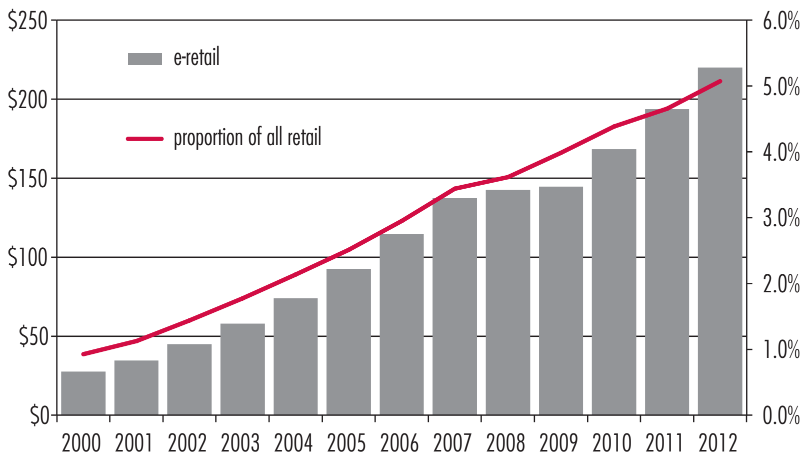
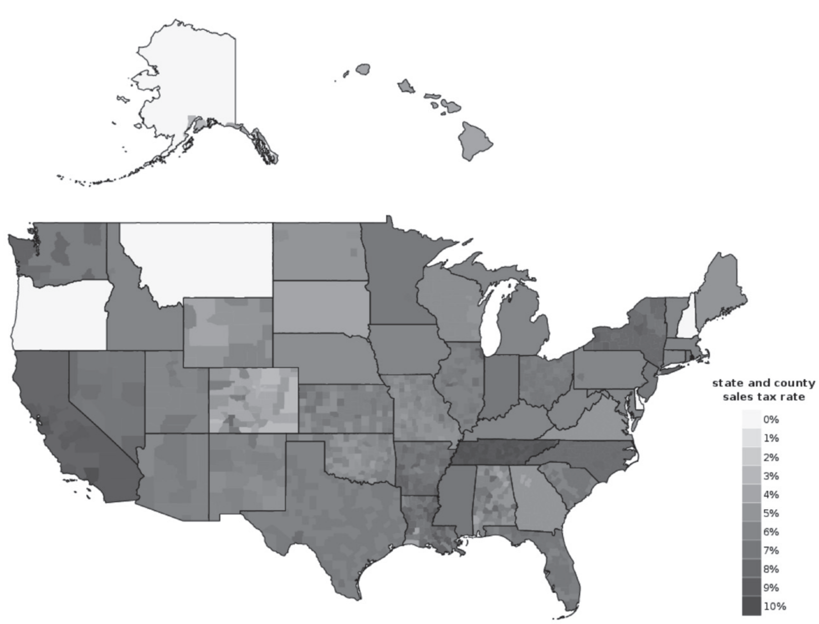


Figure 2. **Sales Tax Rates in the United States**
(as of January 1, 2010)



II. What is being proposed/ discussed

Current policy debates about online taxes are taking place at both the federal and state levels. Discussions at the federal level revolve around harmonizing the varied system of state and local taxes, with the goal of lowering the transaction costs of collecting taxes on interstate sales. Debates at the state level have tended to involve challenges to the legal definition of nexus, as states attempt to classify more retailers, and especially Amazon, as having nexus and hence being responsible for sales tax collection.

A. Federal initiatives

The Supreme Court's logic in exempting cross-state transactions from sales tax collection was partly that the complexity of collecting state and local taxes would create barriers to interstate commerce. At least in principle, technology could reduce these transaction costs. The use of credit cards allows for easily traceable electronic transactions, and vendors already offer software to calculate sales tax liabilities.

For more than a decade, a number of states also have been engaged in a Streamlined Sales Tax Project (SSTP). This is an attempt to establish a harmonized sales tax system, under which states can specify which products are tax exempt and what the tax rate is, as well as uniform definitions across states. Forty-four states and the District of Columbia have participated, and currently 24 states are in compliance with SSTP proposed rules.

A more streamlined system potentially could open the way for congressional legislation that would permit the taxation of Internet and mail-order commerce. The National Governors Association (NGA) has called for this step, arguing that the current regime limits states' ability to increase revenues by increasing their sales tax rates, because consumers will respond to any tax increase by purchasing goods and services online. Offline retailers also have favored this type of legislation, which they believe will "level the playing field" as they attempt to compete with online sellers.

At least three recent congressional bills would initiate Internet sales tax collection: the Marketplace Equity Act of 2011 (HR 3179), the Main Street Fairness Act (S 1452/ HR 2701), and the Marketplace Fairness Act (S 1832). These bills assume or require varying degrees of tax harmonization across states and also propose that small sellers, who might face a disproportionate burden in setting up a system to collect taxes, be exempted from tax collection on cross-state sales.

Figure 3. Uncollected Sales Tax as a Share of State and Local Government Revenues

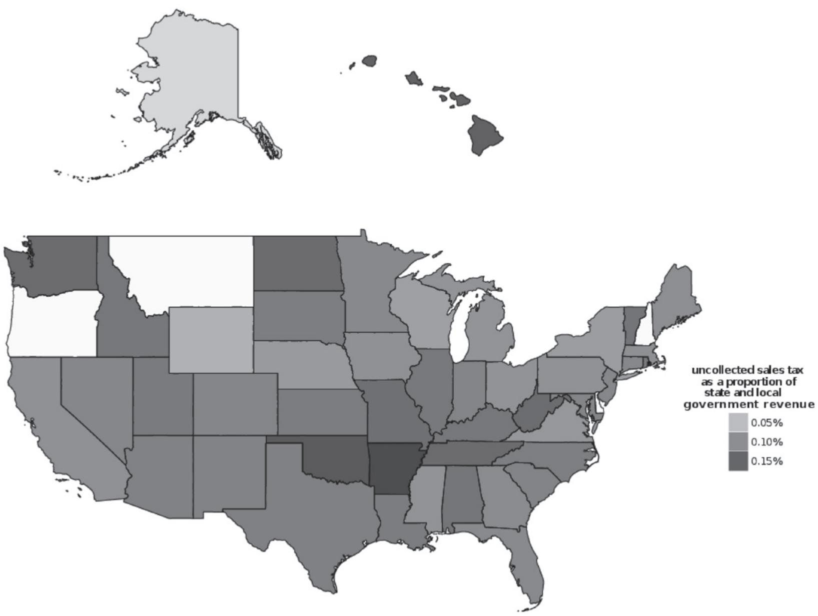


Table 1. Top 10 E-Retailers in 2008

Firm	2008 Online Sales ($B)	Number of States where Taxes are Collected
Amazon	10.23	5
Staples	7.70	44
Dell	4.83	47
Office Depot	4.80	47
Apple	3.64	47
OfficeMax	3.08	47
Sears Holdings	2.69	47
CDW	2.60	47
Newegg	2.10	3
Best Buy	2.02	47

(source: Eisenach and Litan (2010), Table 2)

B. State-level initiatives

States also have become increasingly aggressive in arguing that Internet retailers have nexus in their states, with Amazon—the largest, by far, online-only retailer (Table 1)— being the primary target. For example, 2008 legislation in New York attempted to broaden nexus to include the presence, in New York, of firms that earn referral fees for sending customers to Amazon. Other states including Arizona, California, Colorado, Connecticut, and Illinois also have tried to establish nexus based on the use of affiliate programs inside their states. Both Amazon and Overstock responded to some of these challenges by ending their affiliate programs in the relevant states.

A second area of contention is the use of so-called "entity isolation" in which firms conduct business in a state through the use of separately controlled subsidiaries. For example, when Amazon opened its Irving, Texas, distribution center in 2006, it did not have to start collecting taxes on Texas sales, because the center was owned by a subsidiary. After a prolonged debate, however, Amazon began collecting Texas taxes in July 2012.

Entity isolation appears also to have played a role in Amazon's recent struggle with California over sales tax collection. Amazon operates its A9 subsidiary in Palo Alto and Lab126, which designed the Kindle, in Cupertino. Bills in the California Legislature would have expanded the definition of nexus to include these operations. The upshot of the California debate was that Amazon began collecting California sales taxes in September 2012.

Some states also have attempted to step up their use tax collection, for instance by sending out notices reminding state residents of their potential liability. The Colorado Legislature took perhaps the most aggressive step along these lines in 2010, passing a bill that required online retailers to notify Colorado consumers who had purchased more than $500 worth of goods of their use tax liability and also to notify the state's tax agency. So far, legal challenges have prevented the bill from being enforced.

III. What will be affected and by how much

An unanswered question in the policy debate is how much sales taxes actually matter in determining where and how consumers shop. Although some have argued that favorable sales tax treatment has helped spur the growth of online commerce, others point out that sales taxes may not be very salient to consumers and that factors such as convenience and variety could be much more important in driving retail purchasing decisions.

A. Substitution between online and offline purchasing

In our own recent research (Einav, Knoepfle, Levin, and Sundaresan, 2012), we teamed up with a computer scientist, Neel Sundaresan, to use the data from eBay's massive online marketplace to estimate the importance of sales taxes. As one part of our study, we looked at tax changes that have occurred over time at the state and local level, and we looked to see whether (untaxed) online purchasing by state residents increases when their applicable offline tax rate rises. We found that for every 1 percentage point increase in state sales tax, online purchasing increases by 1 to 2 percent. For example, if a state raised its sales tax rate from 8 to 9 percent, our estimates suggest that this would lead to an increase of 1 to 2 percent of online spending by state residents and a likely corresponding decline in offline sales. So while, all else equal, raising the tax rate will likely increase the state's tax revenues, some of these will be lost, as residents would switch to buying online. This partial offset would be particularly important in high tax states such as California or New York.[1]

As another part of our study, we also investigated the question of exactly how much consumers actually pay attention to sales taxes. Offline studies, including a well-known study by Chetty et al. (2009), have found that consumers tend to treat sales taxes as a "hidden" price and respond less to taxes than to regular retail prices. In our study, we used browsing data from eBay to find hundreds of thousands of "micro-experiments" in which individuals clicked on an item only to find that there was a sales tax collected (if they lived in the same state as the seller) or no tax (if they lived in a different state). We compared these instances to see if the tax would deter some purchases. We do indeed find a non-trivial decline in purchases when tax is applied, but the effect is perhaps only a third or even less than what we might have expected from an equivalent increase in the retail price.

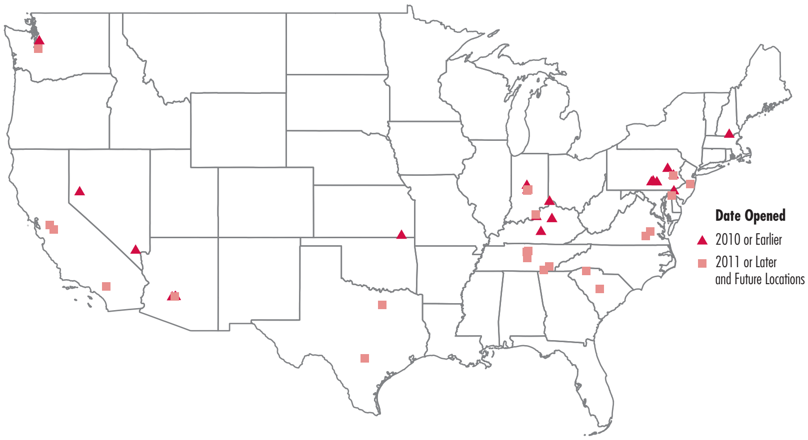
B. The geography of e-commerce

The uneven application of sales taxes also has a second potential consequence. It may help to determine the geography of online commerce, by

continued on flap...

1 Our results are only about half as large as perhaps the best-known prior estimates, from a study by Goolsbee (2000). The studies are hard to compare exactly, however, because Goolsbee's study was done at a time when only a very small fraction of U.S. consumers shopped online. Other studies of tax purchasing elasticities include Alm and Melnik (2005) and Ellison and Ellison (2009).

Figure 4. Amazon Distribution Center Locations



encouraging online shoppers to purchase from sellers that are located in different states and by encouraging sellers to make their location decisions to obtain favorable tax status.

In our research referenced above, we have tried to estimate the extent to which Internet consumers shop "out of state" to avoid sales tax and how this might affect the flow of goods in online commerce. A somewhat surprising finding from our research, however, is that contrary to the popular idea of "frictionless" Internet commerce, online shoppers seem to exhibit fairly strong preferences for buying from nearby sellers and in particular for buying from sellers within their home state. The effect is sufficiently strong that, according to our estimates, a California seller who moved across the state border into Oregon to reduce her tax liability on California sales might lose enough of her California sales to nearly offset the tax benefit![2]

This calculation suggests that online retailers face a trade-off between locating near their customers and locating far enough away from their customers to limit their taxes. Amazon, whose distribution center locations are shown in Figure 4, famously resolved this in favor of limiting taxes. Two of Amazon's distribution centers are located just on the Nevada side of the California/Nevada border. None are located in California or in New York for that matter. Of course, the company's recent agreement with California to collect taxes has changed the calculus, and it now plans to open new centers in California (in Patterson City, Tracy, and San Bernardino). If the state and local initiatives to apply sales tax across the Internet succeed, effects on retail location decisions could prove to be transitory.

References

Alm, James, and Mikhail Melnik (2005). "Sales Taxes and the Decision to Purchase Online," *Public Finance Review* 33: 184–212.

Bruce, Donald, William F. Fox, and LeAnn Luna (2009). "State and Local Government Sales Tax Revenue Losses from Electronic Commerce," *State Tax Notes* 52(7): 537-558.

Chetty, Raj, Adam Looney, and Kory Kroft (2009). "Salience and Taxation: Theory and Evidence," *American Economic Review* 99(4): 1145-1177.

Einav, Liran, Dan Knoepfle, Jonathan Levin, and Neel Sundaresan (2012). "Sales Tax and Internet Commerce," NBER Working Paper No. 18018.

Eisenach, Jeffrey A., and Robert E. Litan (2010). "Uncollected sales taxes on electronic commerce: a reality check," *Netchoice,* available at *http://heartland.org/policy-documents/uncollected-sales-taxes-electronic-commerce-reality-check.*

Ellison, Glenn, and Sara Ellison (2009). "Tax Sensitivity and Home State Preferences in Internet Purchasing," *American Economic Journal: Economic Policy* 1(2): 53-71.

Goolsbee, Austan (2000). "In a World without Borders: the Impact of Taxes on Internet Commerce," *Quarterly Journal of Economics* 115(2): 561-576.

Hortacsu, Ali, F. Asis Martinez-Jerez, and Jason Douglas (2009). "The Geography of Trade in Online Transactions: Evidence from eBay and MercadoLibre," *American Economic Journal: Microeconomics* 1(1): 53-74.

Maguire, Steven (2011). "State Taxation of Internet Transactions," Congressional Research Service Report R41853, available at *http://www.fas.org/sgp/crs/misc/ R41853.pdf.*

2 Our findings on the importance of distance echo earlier work by Hortacsu et al. (2009), who argued that consumer preference for nearby sellers could be driven by some combination of wanting items to arrive faster and greater trust in nearby sellers.

SIEPR *policy brief*

Stanford University
366 Galvez Street
Stanford, CA 94305
MC 6015

A publication of the
Stanford Institute for
Economic Policy Research

Non-Profit Org.
U.S. Postage
PAID
Palo Alto, CA
Permit No. 28

SIEPR

About SIEPR

The Stanford Institute for Economic Policy Research (SIEPR) conducts research on important economic policy issues facing the United States and other countries. SIEPR's goal is to inform policymakers and to influence their decisions with long-term policy solutions.

Policy Briefs

SIEPR policy briefs are meant to inform and summarize important research by SIEPR faculty. Selecting a different economic topic each month, SIEPR will bring you up-to-date information and analysis on the issues involved.

SIEPR policy briefs reflect the views of the author. SIEPR is a non-partisan institute and does not take a stand on any issue.

For Additional Copies

Please see SIEPR website at *http://SIEPR.stanford.edu*.