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## **The Implications of Electronic Commerce for Fiscal Policy (and Vice Versa)**

Austan Goolsbee

**P**artly as the result of historical circumstance, most people in the United States are not paying sales taxes on their purchases over the Internet. As a result, many state and local officials have become quite agitated that the rise of the Internet will severely erode the state and local tax base. Their fear, as spelled out by Newman (1995), is that “state and local government finances are becoming road kill on the information superhighway.” Although sales taxes on physical goods have received most of the attention, other tax issues such as the taxation of Internet access and international taxation of Internet commerce are also important.

In the last two years, a debate over taxes and the Internet has raged at the highest levels. In 1998, Congress passed the somewhat misleadingly titled Internet Tax Freedom Act. Contrary to popular impression, this act did *not* place a moratorium on sales taxes on Internet purchases, only on discriminatory taxes and on Internet access taxes. The act did create a commission to study the sales tax issues, but the commission was unable to reach a consensus (Advisory Commission, 2000). Congress has since proposed extending the Tax Freedom Act temporarily, but the major issues have not been resolved.

In this paper I will consider both sides of the relationship between electronic commerce and fiscal policy. For the impact of electronic commerce on fiscal policy, I will pay particular attention to the potential sales tax revenue losses. The data suggest that the potential losses are actually modest over the next several years. I will also consider the reverse relationship—how fiscal policy affects Internet com-

■ *Austan Goolsbee is Associate Professor of Economics, Graduate School of Business, University of Chicago, Chicago, Illinois; Research Fellow, American Bar Foundation, Chicago, Illinois; and Research Fellow, National Bureau of Economic Research, Cambridge, Massachusetts.*

merce. Here the evidence suggests that taxes have a sizable effect. I point out, though, that this only supports special treatment if there is some positive externality. Without one, the tax system will lead to excessive on-line buying to avoid taxes. I will then deal with the neglected issue of taxes and Internet access, which can create large deadweight costs both because demand may be price-sensitive and because taxes can slow the spread of new technologies. Finally, I offer some discussion of the international context of taxes and the Internet and the international temptations to raise rates on e-commerce.

## Taxes and Internet Commerce

The current rules for taxation of Internet commerce evolved from the rules on out-of-state catalog sellers. Many people mistakenly believe that state sales tax does not apply to out-of-state transactions. In fact, such taxes do apply, but are largely unenforceable except in rather specific circumstances.

The normal burden of collection for sales taxes resides with merchants. When a customer buys something at the bookstore, the merchant collects and pays the sales tax to the state. The Supreme Court has ruled that a state has no jurisdiction to require an out-of-state merchant with no employees or other physical presence in a state—known as “nexus”—to collect the tax.<sup>1</sup> In other words, when Seattle-based Amazon.com sells a book to someone in California, the state of California cannot require the out-of-state retailer to add California sales tax to the purchase. In places where the merchant does have nexus, the state can make such a requirement. Amazon does collect sales tax on sales to state of Washington customers.

The story does not end there, however. Every state with a sales tax also has a “use” tax of the same rate and the use tax applies to exactly those goods bought out of state where sales tax aren’t collected by the merchant. The use tax is levied *on the consumer*. California customers of Amazon are legally supposed to pay California use tax on their purchases. The enforcement costs of pursuing the revenues from these numerous small and undocumented transactions has proved prohibitive in most circumstances and so compliance rates, though unknown, are extremely low except in certain situations. Use tax compliance is very high for goods that must be registered (like automobiles) as well as for taxable business purchases (for example, computers in many states), because larger companies are systematically audited for use tax compliance.

The Internet Tax Freedom Act of 1998 imposed two moratoria: one on new and discriminatory taxes on the Internet and the other on applying sales or other taxes to monthly Internet access fees (grandfathering existing state taxes). But neither of these provisions created a moratorium on sales taxes or use taxes because

<sup>1</sup> The key cases are *National Bellas Hess*, 386 U.S. 753 [1967] and *Quill*, 504 U.S. 298 [1992]. For more detailed discussions of the law, see Hellerstein (1997a), Prem et al. (1999), U.S. GAO (2000).

such taxes are not new nor discriminatory. They have always been on the books and apply equally to all purchases. The issue is that use taxes simply haven't been enforced, making purchases effectively tax-free.

## The Implications of Internet Commerce for Tax Collections

Since sales taxes account for about 33 percent of state revenues, it is easy to understand the fear politicians have of e-commerce. Some politicians have tended toward alarmism, arguing that in the near future revenue losses due to Internet commerce may exceed \$20 billion, but most of these claims are not based on actual data (Graham, 1999).

Any legitimate estimate of future revenue losses must begin with a forecast of Internet sales, the most comprehensive of which comes from Forrester Research. Table 1 presents Forrester's estimates of retail commerce in 1999 and their forecast for 2004 by sector (Williams et al., 1999). Forrester foresees consumer spending on-line rising dramatically for the next five years.

One cannot simply multiply total sales by the average sales tax rate to get the amount of revenue loss caused by the Internet. For several of the categories, state sales tax does not apply; for example, leisure travel and event tickets. Moreover, several of the categories such as automobiles, groceries/food, and flowers are likely either to generate nexus or else are exempt from taxation. Sales in these cases do not lose tax revenue. They are listed together as the first group of products in Table 1.

For the second group of products, computers and computer software, the growth of Internet sales has largely cannibalized the mail-order sales of the same merchants—for example, Dell On-line reducing sales of Dell's catalog—rather than the sales of retail computer stores (see the discussion of Goolsbee, 2000a). For purposes of estimating sales tax revenue losses, I make the conservative guess that half of computer hardware and software sales on-line would have been bought from catalogs rather than in stores. In reality, the share is likely to be higher, at least for computer hardware.

The third group of products in Table 1 are those where Internet sales from out-of-state purchasers might plausibly involve the direct loss of tax revenue. Adding the total for these sectors to half of the on-line computer sales, the total tax-losing on-line sales in 1999 were just under \$9.7 billion. With an average sales tax rate across states of 6.33 percent (Goolsbee, 2000b), the implied loss of tax revenue is \$612 million or 0.3 percent of the total sales tax revenue of \$203 billion (U.S. GAO, 2000). Similar calculations are presented in Goolsbee and Zittrain (1999), Cline and Neubig (1999), McQuivey et al. (2000), and U.S. GAO (2000).

Although current tax revenue losses are not large, future losses could be more of a concern. Doing the same calculation for 2004, the total sales base becomes about \$109 billion and the lost revenue rises to about \$6.88 billion. Assuming average growth in off-line sales of 5 percent annually, the possible loss of tax

*Table 1*  
**Current and Projected On-line Commerce**  
*(in millions of dollars)*

<i>Type of Good</i>	<i>1999 Estimate</i>	<i>2004 Forecast</i>
<i>Total Sales</i>	20,252	184,481
<i>Little Revenue Loss</i>	8,965	71,928
Automobiles	—	16,567
Leisure Travel	7,798	32,097
Event Tickets	300	3,929
Food	513	16,863
Flowers	354	2,472
<i>Partial Revenue Loss</i>	3,204	24,211
Computer Hardware	1,964	12,541
Computer Software	1,240	11,670
<i>Full Revenue Loss</i>	8,080	96,624
Books	1,202	3,279
Music	848	4,286
Videos	326	1,743
Apparel	1,620	27,128
Greetings & Special Gifts	301	2,087
Household Goods	250	5,755
Toys & Recreation	595	15,039
Consumer Electronics	1,205	11,670
Housewares	446	5,908
Health and Beauty	509	10,335
Miscellaneous	778	9,394

*Note:* Not all numbers sum because of rounding within groups.

*Source:* Forrester (Williams et al., 1999).

revenue from the Internet amounts to 2.6 percent of projected 2004 sales tax revenue, larger but still modest. If this calculation is projected further into the future, it will likely be more than a decade before the total revenue loss arising from e-commerce reaches, say, 10 percent of sales tax revenues. In the discussion of taxing Internet sales, it's worth remembering that current estimates put the tax revenue loss from out-of-state catalog sales at around \$6 billion, about 10 times larger than the revenue loss calculated above from Internet commerce (U.S. GAO, 2000).

Even these estimates of lost sales tax revenues from e-commerce are probably biased upward. First, this calculation assumes there are no behavioral responses to taxation. If raising taxes on Internet commerce leads people to buy fewer books, rather than just to divert their purchases back to retail bookstores, the revenue losses here will be overstated. Second, some fraction of on-line spending even of the third category of goods takes place in the state of the merchant, in which case nexus applies and the retailer can be required to collect the sales tax. In the Forrester

Technographics 1999 data, for example, used in Goolsbee (2000c), about 7 percent of Dell customers were in Texas, where Dell is located. In general, people in California have much higher rates of on-line purchase—they make up 15 percent of on-line buyers but only about 9.5 percent of nonbuyers—as well as a major share of Internet businesses.

The main wild card for estimating revenue loss is what fraction of on-line business-to-business purchases may avoid paying use tax. On-line business-to-business sales are almost ten times larger than on-line retail sales, and many states tax numerous business purchases such as computers. Since the majority of on-line business-to-business sales are carried out by very large firms who are audited for their use tax, my view is that the underpayment is pretty low. However, this view is controversial; for example, Bruce and Fox (2000) estimate tax revenue losses of up to \$11 billion by 2003 with as much as 70 percent coming from lost revenue from business-to-business sales.<sup>2</sup>

Generally, though, economists are skeptical about the wisdom of *any* sales tax on business purchases. These are intermediate goods. Sales taxes on business purchases will have a cascading effect, since the same output (not value-added) gets taxed repeatedly as it moves through the chain of production, and then taxed again when sold to consumers. A number of distortions will arise as a result, such as an incentive to produce products in-house rather than buy from other producers. As Varian (2000) points out in his discussion of Internet taxation, the current system of use taxes enforced on businesses and not on consumers is precisely the opposite of what economic theory suggests. If businesses could use the Internet to avoid paying use taxes, this might be lost tax revenue that makes society better off, although any efficiency gains must be balanced against the distortion created by shifting one type of business commerce to another.

Overall, the revenue loss from the Internet is likely to be small. Even so, governments still might want to collect the tax if the cost of compliance is low. The main costs of compliance seem to be collecting rate information for the several thousand jurisdictions around the country and filling out the paper work. The fact that there are many different jurisdictions with different tax rates may not be too serious a problem in a world of cheap software and databases. The more difficult compliance issues revolve around differences in the sales tax base, with some states exempting various items that other states tax. For example, some states tax clothing; some do not; and some tax clothing with various exceptions, such as only purchases over \$500, or no tax except on fur and formal wear.

It is important to remember that the states could make taxing interstate commerce much easier if they would act to simplify or normalize their tax bases and

<sup>2</sup> The report by U.S. GAO (2000) outlines the importance of the underlying assumptions in this difference of opinion. If use tax noncompliance among businesses is pervasive, the revenue loss from Internet sales could reach 5 percent of sales tax revenue by 2003. If compliance is high, the forecasted revenue loss is lower by a factor of five.

rates. McLure (forthcoming) argues that equalizing the bases and setting one rate per state could serve as the basis for a grand political bargain. Thus far, however, few states have expressed a willingness to give up their discretionary powers, even though it would seem to be leaving money on the table. Estimates of the cost of compliance vary considerably, but one key factor is whether tax will be collected on very small merchants whose compliance cost is high and sales are low. Since about three-quarters of on-line retail is sold by 50 firms, the idea of exempting small firms from such a tax would only reduce tax revenue slightly (Boston Consulting Group, 1998). The most important issue for compliance is likely to be ensuring that businesses can find tax rates and bases in a simple way and that they will not be legally at risk so long as they use the official database.

### **The Impact of Tax Policy on Electronic Commerce**

Although electronic commerce appears to have had little impact on fiscal policy, the same cannot be said for the role of fiscal policy on e-commerce. The evidence suggests that people are sensitive to local tax rates when deciding whether to buy over the Internet. In Goolsbee (2000b), I show that in places where sales taxes are higher (that is, the relative price of buying on-line is lower), individuals are significantly more likely to have bought on-line (controlling for individual characteristics). Moreover, this effect is unlikely to result from a spurious correlation of tax rates and technological sophistication, since those people in jurisdictions with higher tax rates do not appear more likely to use the Internet more frequently, nor to own computers, nor to differ systematically on other measures of technological sophistication. They are only more likely to buy things on-line. Further, the tax effects are found with products where sales tax is relevant, like books, and not found in products where taxes aren't relevant, like mutual funds and stocks. Based on these data, enforcing sales/use taxes on out-of-state purchases would reduce the number of on-line buyers by as much as 24 percent.

This sensitivity of purchases to taxation has since been corroborated in other studies. In Goolsbee (2000c) I use updated data from 1999 and find a smaller but still sizable elasticity of e-commerce. Brynjolfsson and Smith (2000) use data from individuals' behavior at comparison shopping sites and find that individuals strongly favor book sellers outside their own state where they do not have to pay taxes. Nonacademic survey data has also tended to suggest that taxes matter, though such studies do not control for other factors.<sup>3</sup>

<sup>3</sup> A survey of 7000 people conducted by Bizrate.com indicated that nearly half of people claim they would not have made their last on-line purchase if they had been required to pay sales tax on it (Pastore, 1999). A survey by Jupiter communications of 1,600 people indicated that 29 percent of people would consider rejecting an on-line purchase of less than \$50 if they had to pay sales tax and 41 percent would reject the on-line purchase if the item cost more than \$100 (Tadeschi, 2000).

Of course, the fact that applying taxes would reduce Internet commerce does not imply that such commerce should not be taxed.<sup>4</sup> There is clearly an economic distortion created from diverting commerce from retail stores to on-line venues simply for the purpose of avoiding taxes. To justify lower tax rates for e-commerce requires some positive externality or some especially high cost of compliance.

Plenty of candidates for such externalities have been nominated. There may be a network externality argument against penalizing Internet commerce at an early stage of development, because current growth exerts a positive impact on future growth (Goolsbee and Zittrain, 1999; Goolsbee and Klenow, 1999; Zodrow, 2000). Some make arguments that forbidding Internet taxation could reduce the market power of local retailers or limit the overall spending and size of state government (Trandel, 1992; Becker, 2000). But there are some counterbalancing reasons that weigh against lower e-commerce tax rates, too. In Goolsbee (2000c), I find that recent adopters are much less sensitive to taxation than the early adopters were, but that as shoppers gain experience, their tax sensitivity rises dramatically as they learn how to game the system. Others argue that imposing taxes before an industry is established is the only politically feasible way to get such taxes passed.

My view is that most arguments regarding externalities are based on politics, not economics. They are not the types of issues that are amenable to testing given the available data about the Internet, so they become matters of opinion. Moreover, even if the size (or direction) of the perceived externalities was known, the policy prescription would be unclear. Would a positive externality justify a complete sales tax exemption as opposed to some lower (but positive) sales tax rate or would it warrant some altogether different policy intervention? The strictly empirical questions are both easier to answer and more convincing than these questions.

## **The Forgotten Issue of Taxing Internet Access**

A largely neglected issue arising from the Internet Tax Freedom Act was the moratorium that forbade states from applying sales taxes to monthly Internet fees. I believe that this issue is extremely important and will move to the front burner as high-priced broadband connections become more prevalent.

For perspective, total spending on Internet access was almost \$10 billion in 1999 (Kasrel et al., 1999). If all states applied sales taxes to these charges and there were no behavioral responses, the \$630 million of tax revenue collected would exceed the revenue loss from lost sales tax on-line. Imposing such access taxes is likely to be a tempting target once the moratorium expires, especially since the average annual income of Internet users exceeds \$60,000.

However, taxing Internet access may create considerable deadweight loss. First of

<sup>4</sup> There are excellent discussions of e-commerce tax plans in Hellerstein (1997a, b, c, 1999), McLure (1997a, b, 1999a, b), Fox and Murray (1997), Eads et al. (1997), Prem et al. (1999), and Varian (2000).

all, work on Internet usage seems to indicate that it is highly price sensitive (Varian, 1999; Goolsbee, 2000d). High elasticities typically mean large distortions. But since almost all Internet service providers charge flat monthly fees, rather than per-hour charges, applying taxes to access fees is not likely to have much impact on the hours of use. They may still influence the decision of whether to get access at all.

The impact of taxes on the decision to adopt new technology can make these deadweight losses even larger. If there are fixed costs associated with expanding broadband service to a city, anything that reduces profitability runs the risk of delaying or even preventing diffusion. In this case, as discussed in Romer (1994), the deadweight loss of the policy will be the entire consumer and producer surplus that would have existed if the tax had not existed and the technology had spread (minus the fixed cost that need not be incurred, of course).<sup>5</sup>

Goolsbee (2000d) finds that allowing states to apply sales taxes to Internet access fees could significantly delay the spread of broadband in a number of smaller-sized markets, leading to dynamic losses more than twice as large as in conventional deadweight loss calculations and losses that would be a multiple of the revenue generated by the tax. However, this evidence is based on reported willingness-to-pay data and it would be useful to find whether similar results hold with better information. The impact of taxation on innovation is a fruitful topic for further research.

## **International Implications**

The taxation of Internet commerce has received considerable attention internationally, especially in Europe. However, Europe does not have anything like the revenue loss issues faced in the United States. European countries typically apply a value-added tax (VAT) to purchases coming from other countries through customs. Further, for goods originating within the European Union, VAT is paid at each stage of production, so it is much less of an issue revenue-wise, even if the final sale were to avoid paying tax (Nordhaus, 2000). Europe has recently expanded efforts to tax e-commerce, including an attempt to tax services bought on-line and downloaded digital goods such as on-line music. This type of tax provision is likely to be extraordinarily difficult to enforce and of extremely little revenue consequence in the medium run even if enforcement were possible. Digital goods are a tiny fraction of on-line purchases and will continue to be small for many years.

Although there is no academic evidence examining how much taxes contribute to the widely varying levels of e-commerce internationally, the anecdotal evidence is consistent with at least some effect. In the United States, buying on-line saves consumers something like 6 percent relative to buying in stores. In Europe,

<sup>5</sup> Hausman (1997, 1998) makes similar arguments regarding the deadweight losses of taxes and regulatory delays in telecommunications industries.

VAT rates are more like 18 percent and there is no savings in buying on-line. In Europe, even in countries such as Sweden where on-line penetration is as high as in the United States, the share of on-line users that have ever purchased something on-line is less than half the U.S. level and total European e-commerce is less than one-seventh of the U.S. level (Nordan et al., 2000). Also, most countries in Europe have high charges and taxes on Internet access and simultaneously much lower on-line penetration than the United States.

European officials will face a powerful temptation when it comes to taxing Internet commerce. The majority of on-line merchants are located in the United States. There will be increasing pressure to put special taxes on e-commerce that will disproportionately affect U.S. merchants competing with domestic retailers. Thus far, no special e-commerce taxes exist. However, the question of future international taxes on e-commerce remains very much up in the air. We have already seen a United Nations proposal to tax e-mail in developed countries to pay for computer access in developing nations. The U.S. agenda in this area at the World Trade Organization is to argue for an agenda of no special taxes on Internet commerce. It will be interesting to see whether other nations find this position persuasive.

## Conclusion

As a final thought regarding the domestic taxation of the Internet, the losses of tax revenue due to e-commerce are likely to be small in the short run and rise over time. Conversely, any positive externalities for the economy as a whole arising from electronic commerce and the spread of Internet access are likely to be largest in the short run and diminish as the Internet becomes an established retail channel (Goolsbee and Zittrain, 1999). In such circumstances, choosing not to enforce on-line sales taxes aggressively for a few years, followed by equal treatment once the Internet is established, may be a desirable outcome as well as being a plausible political compromise.

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