

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

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Partly 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, state and local officials are quite agitated that rise of the Internet will severely erode the state tax base. Their fear, as put by Newman (1995) is that "state and local government finances are becoming road kill on the information superhighway." Although sales taxes on physical goods has 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 extended the Tax Freedom Act temporarily, but the major issues have not been resolved.

In this paper I will consider both sides of the relationship of electronic commerce and fiscal policy. For the impact 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 commerce. 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 online buying to avoid taxes.

I will then deal 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 give 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.¹ In other words, when Seattle based Amazon.com sells a book to someone in California, California cannot require them to add California sales tax to the purchase. In places the merchant does have nexus they can. Amazon collects the tax on sales to 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 this 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. The California customer of Amazon is legally supposed to pay California use tax on their purchase. 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 (e.g., automobiles) as well as for

taxable business purchases (e.g., computers in many states) because large companies are frequently 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 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 in 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 online 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 (Goolsbee and Zittrain, 1999). 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 Online reducing sales of Dell's catalog -- rather than the sales of retail computer stores (Goolsbee, 2000a). For purposes of estimating sales tax revenue losses, I make the conservative guess that half of computer sales online would have been bought from catalogs rather than in stores. In reality, the share is likely to be higher, at least for computers.

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 online computer sales, the total tax-losing online 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).

Current revenue loss may be less the concern than is future revenue loss. 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 offline sales of 5 percent annually, the possible loss of tax 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 catalog 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 divert their purchases back to retail bookstores, the revenue losses here will be overstated. Second, some fraction of online spending even of the third category of goods takes place in the state of the merchant (i.e., nexus applies) and thus typically pays 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 online purchase -- they make up 15 percent of online buyers but only about 9.5 percent of non-buyers -- as well as a major share of internet businesses.

The one wildcard is what fraction of online business-to-business purchases may avoid paying use tax. Online business-to-business sales are almost ten times larger than online retail sales, and many states tax numerous business purchases such as computers. Since the majority of online 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 quite low. However, this view is controversial; for example, Bruce and Fox (2000) estimate tax revenue losses of up to \$11 billion by 2003 because of lost revenue from business-to-business sales.²

Generally, though, economists are skeptical about the wisdom of any sales tax on business purchases. These are intermediate goods. Sales taxes 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. Although it must be balanced against the distortion created by shifting one type of business commerce to another, if businesses could use the internet to avoid paying use taxes, this might be lost tax revenue that makes society better off.

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 simplified or normalized their tax bases and rates. McLure (1999) 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 online retail is sold by 50 firms, the idea of exempting small firms from such a tax would only

reduce tax revenue slightly. (BCG, 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 rather 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 (so the relative price of buying online is lower), individuals are significantly more likely to have bought online (controlling for individual characteristics) and that this effect is unlikely result from a spurious correlation of tax rates and technological sophistication since jurisdictions with higher tax rates since those people are not more likely to use the Internet more frequently, own computers, etc. only to buy online. Further, taxes effects are tied to products where sales tax is relevant, (i.e., books), and not it isn't (i.e., mutual funds and stocks). In these data, enforcing sales/use taxes on out-of-state purchases would reduce the number of online 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. Non-academic survey data has also tended to suggest that taxes matter, though such

studies do not control for other factors.³

Of course, the fact that applying taxes would reduce Internet commerce does not imply that such commerce should not be taxed.⁴ There is clearly an economic distortion created from diverting commerce from retail stores to online 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). On the contrary, there are negatives, too. In Goolsbee (2000c), I find that 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. In other words, they are not the types of issues that are amenable to testing given our data about the Internet so they become simple 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 Forgotten Issue of Taxing Internet Access

A largely neglected issue arising from the Internet Tax Freedom Act was the moratorium on taxes on Internet access charges (forbidding 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 sales tax total revenue loss described above. Imposing such 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 all, work on Internet usage seems to indicate that it is highly price sensitive (Varian, 1999; Goolsbee, 2000d). High elasticities mean large distortions. 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, but may 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 lost 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).⁵

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 an order of magnitude larger than conventional DWL calculations and several hundred percent more than the revenue generated 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 EU, VAT is paid at each stage of production, so it is much less 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 online and downloaded digital goods such as online 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 online 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 an effect. In the United States, buying online save consumers something like 6 percent relative to buying in stores. In Europe, VAT rates are more like 18 percent and there is no savings in buying online. In Europe, even in

countries such as Sweden where online penetration is as high as in the United States, the share of online users that have ever purchased something online 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 online penetration than the U.S.

European officials will face a powerful temptation when it comes to taxing Internet commerce. The majority of online 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 taxes exist. However, the question of future international taxes on e-commerce remains very much up in the air. We have already seen a U.N. 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 how whether other nations find this position persuasive.

Conclusion

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 online 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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1. National Bellas Hess, 386 U.S. 753, 1967; Quill, 504 U.S. 298, 1992. For more detailed discussions of the law see Hellerstein (1997a), Prem et al. (1999), U.S. GAO (2000).

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

3. A survey of 7,000 people conducted by Bizrate.com indicated that nearly half of people claim they would not have made their last online 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 online purchase of less than \$50 if they had to pay sales tax and 41 percent would reject the online purchase if the item cost more than \$100 (Tadeshi, 2000).

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

5. Hausman (1997, 1999) makes similar arguments regarding the deadweight losses of taxes and regulatory delays in telecommunications industries.