Impact of Electronic Commerce on the Iowa Sales Tax Base

Iowa Department of Revenue and Finance

Introduction

President Clinton signed the Internet Tax Freedom Act into law on October 21, 1998. Last fall President Bush signed an extension of the Act for two additional years. This Act imposes a moratorium on the levying of new state and local taxes on "Internet access" services. This law only prevents taxing the fee paid by consumers to access the World Wide Web, e-mail, and other on-line information services. Contrary to common belief, this Act does not directly affect the ability of states and localities to impose sales and use taxes on the purchase of goods sold over the Internet. Individuals and businesses that make purchases from vendors located outside their home state are generally required to pay tax on those purchases, except when either the purchased item or the entity making the purchase have been granted exemptions.

On the other hand, two U.S. Supreme Court decisions, *National Bella Hess vs. Illinois (1967) and Quill Corp. vs. North Dakota (1992)* have severely restricted the ability of state and local governments to collect sales and use taxes due on purchases made from remote sellers. These decisions held that a state may only require a mail-order catalog company to charge sales tax to its customers and remit the tax to the state in which the consumer resides if the company has some kind of physical presence in that state. These rulings did not eliminate the sales tax liability for these purchases; rather they shifted the responsibility for remitting the tax from the retailer to the consumer.

As use of the Internet increases the expectation is that more commercial activity by both individuals and businesses will be transacted electronically. This has raised the concern among state revenue and budget officials that their state sales and use tax bases will be adversely affected. In response to this concern the states, with input from local governments and the private sector, have initiated an effort to simplify and modernize sales and use tax collection and administration. This effort is referred to as the Streamline Sales Tax Project. If this effort succeeds the hope is that remote sellers will begin to voluntarily collect and remit state and local use taxes regardless of whether they have physical presence in a jurisdictions.

This paper addresses how remote sales generally, and electronic commerce in particular, impact Iowa's sales and use tax revenues, and the extent to which these impacts are expected to grow over the next several years. First, the paper briefly summarizes key definitions, issues, and statistics related to the topics of remote sales and electronic commerce. Second, the paper evaluates the validity and consistency of different existing estimates of the impacts remote sales and electronic commerce have on state tax revenues. Third, the paper presents estimates made by the Department of Revenue and Finance of the impacts of remote sales and electronic commerce on Iowa tax revenues. Finally, the paper addresses a special class of electronic commerce (i.e., digitally and electronically transferred merchandise) that presents some unique problems for lawmakers and taxing authorities.

Background

Traditionally, the term "remote sales" was considered synonymous with catalog sales. This type of sales generally involved either selecting an item from a catalog at a local retail outlet and then returning some days or weeks later to retrieve the merchandise, or mailing in an order form and having the merchandise delivered by the U.S. Postal Service. Since the advent of cable television with offerings such as the Home Shopping Network, infomercials on broadcast television stations, telemarketing, and the commercialization of the World Wide Web, the term has been expanded to include telephone sales and Internet based transactions.

Furthermore, with the growth of independent parcel delivery companies and a more competitive U.S. Postal Service, the character of remote sellers has changed. Now although some companies, such as Sears and J.C. Penny, continue to offer traditional catalog sales services, many new remote sellers with no retail outlets have come into existence. These virtual retailers have forced the traditional catalog companies to reorganize by often separating their store based and remote sales operations in order to offer the same "tax free" options to customers.

These changes in the character of remote sales have exacerbated the revenue impacts being experienced by state and local governments. Also, the changes threaten the existence of many traditional small town and independent retailers. However, good estimates as to the extent of the threats to government revenues and to local businesses are not readily available.

Although the loss of tax revenues due to traditional catalog sales has concerned states for many years, as evidenced by the 1967 *Bella Hess* case, the rise of telephone and Internet based remote sales have heightened the concern. These new sales media, with the support afforded by low cost independent parcel delivery services, are expected to increase sales and use tax revenue losses at an increasing rate.

Precise statistics on the rate at which remote sales activity is growing are not readily available. However, some sense of the rate of growth of the electronic commerce component of remote sales can be discerned from statistics on the rate at which Internet access is increasing. According to a new study released in February by the National Telecommunications and Information Administration (NTIA), entitled *A Nation On-Line*, Internet use in the United States is growing at a rate of 2 million new users per month. The report states that from August 2000 through September 2001 the number of Internet users in the nation increased by 26 percent. This increased the share of the nation's population using the Internet to 54 percent.

In addition, the study found that from 2000 to 2001 the share of Americans using the Internet to search for products and services increased from 26 percent to 36 percent. Furthermore, the share of Internet users making on-line purchases equaled 39 percent. The demographics of computer and Internet usage imply electronic commerce will continue to grow at a rapid rate as the current population of school age children becomes adults. Whereas computer usage equals 66 percent for all Americans, 90 percent of children 5 to 17 years of age use computers. In comparison to the 54 percent of all Americans using the Internet, for 14 to 17 year olds the share equals 75 percent.

National Estimates of Remote Sales and Electronic Commerce Impacts

The two most widely cited sources of information on remote sales and electronic commerce are a September 2001 report authored by University of Tennessee professors Donald Bruce and William F. Fox and the quarterly retail electronic commerce sales reports issued by the U.S. Census Bureau.

The Bruce and Fox report, entitled *State and Local Sales Tax Revenue Losses from E-Commerce,* was prepared under contract with the Institute for State Studies. Forrester Research, Inc. collected the data used in preparing the report. The report presents estimates for the amount of state and local sales and use tax revenue losses due to the growth of electronic commerce and other factors for the years 2001, 2006, and 2011. Nationwide the authors estimate these losses at $13.3 billion in 2001, $45.2 billion in 2006, and $54.8 billion in 2011.

The report distinguishes between two major components of revenue losses. The two components are “trend” losses and losses arising from the growth of new electronic commerce activity. Further distinction is made between three sources of trend tax revenue losses. The first source is the shift of consumption expenditures from goods to services. The second source is the erosion of the tax base resulting from the granting of tax exemptions by state legislatures. And the third source is traditional remote sales activity. Tax revenue losses from new electronic commerce activity are defined as those resulting from new sales activity. Business-to-business (B2B) sales dominate the new sales component and are estimated by the authors to account for 92.6 percent of all electronic commerce activity in 2001. The authors expect the business-to-business share of all electronic commerce activity to increase to 95.0 percent by 2011 and to be responsible for three-fourths of new state and local tax revenue losses. The authors’ estimates of state and local tax revenue losses that will result from new electronic commerce activity are $7.0 billion in 2001, $24.2 billion in 2006, and $29.2 billion in 2011.

Thus, estimates of nationwide state and local tax revenue losses resulting from trend erosion of tax bases and from new electronic commerce activity may be summarized as follows:

Table 1: Summary of Components of State and Local Tax Revenue Losses

Component	2001	2006	2011
Total Revenue Losses	$13.3 billion	$45.2 billion	$54.8 billion
Trend Losses	$ 6.3 billion	$21.0 billion	$25.7 billion
Trend Share	47.4%	46.5%	46.9%
New E-Sales Losses	$ 7.0 billion	$24.2 billion	$29.2 billion
New E-Sales Share	52.6%	53.5%	53.1%
New B2B Sales Losses	$ 5.1 billion	$17.9 billion	$21.9 billion
New B2C Sales Losses	$ 1.9 billion	$ 6.3 billion	$ 7.3 billion

The information summarized in Table 1 indicates the authors estimate total state and local tax revenue losses are expected to increase at an average annual rate of 27.7 percent from 2001 to 2006 and by an average annual rate of 3.9 percent from 2006 to 2011. The estimated growth rates for the new electronic sales component of revenue losses equals 28.2 percent from 2001 to 2006 and 3.8 percent from 2006 to 2011. Finally, extrapolating from the reports estimates for growth of new business-to-business sales, estimated average annual growth rates for new business-to-consumer (B2C) sales equal 31.6 percent from 2001 to 2006 and 3.0 percent from 2006 to 2011.

These growth rates seem high for the period from 2001 to 2006. However, given that the commercial use of the Internet is still maturing they are not that extraordinary. Also, these growth rate estimates are close to the rates of growth in Internet access reported in the NTIA *A Nation On-Line* study. That study found that from 1998 to 2000 persons with home Internet access increased from 30.0 percent to 46.7 percent of Americans, or by approximately 24.8 percent per year.

The other major source of information on electronic commerce is the United State Census Bureau. The Census Bureau defines electronic commerce sales as "sales of goods and services where an order is placed by the buyer or price and terms of sale are negotiated over the Internet, an extranet, Electronic Data Interchange (EDI) network, or other online system." The electronic commerce statistics compiled by the Census Bureau cover only retail sales, or business-to-consumer sales. Furthermore, the Census Bureau does not forecast future electronic commerce activity.

Consequently, the definitions of electronic commerce used by Bruce and Fox in the Institute for State Studies report and by the Census Bureau are not exactly comparable. Nevertheless, a comparison of the historical data collected by the Census Bureau does provide a basis for assessing the reasonableness of the Bruce and Fox estimates of state and local revenue losses.

First, the Census Bureau reported in its February 20, 2002 *Retail E-Commerce Sales* press release that electronic commerce sales for all of 2001 totaled $32.9 billion, which was an increase of 19.3 percent from 2000. Although it is likely some state sales and use taxes were paid on these sales, it is safe to assume most purchasers did not pay the required taxes. For the sake of comparison with the Bruce and Fox report, assuming average state and local sales and use tax rates of between 5.0 percent and 6.0 percent, the estimated revenue loss associated with the retail (B2C) electronic commerce sales recorded by the Census Bureau equates to between $1.6 billion and $2.0 billion. This amount is comparable to the new business-to-consumer tax revenue losses ($ 1.9 billion) derived from the Bruce and Fox report for 2001.

Second, extrapolating the 19.3 percent annual rate of growth in retail electronic commerce sales between 2000 and 2001 to 2006, one derives an estimate of $4.8 billion for business-to-consumer sales, which is 73.0 percent of the estimate derived from the Bruce and Fox data. Given the slowdown in the economy during 2001, the difference between these two estimates is not that significant. Therefore, at least in aggregate, the Bruce and Fox estimates of the growth of electronic commerce on state and local tax revenues seem reasonable. However, their overall impact estimates may be as much as 25 percent too high if one assumes the growth rate reflected in the Census Bureau data is a more accurate reflection of what to expect over the next several years.

State Tax Revenue Loss Estimates

The Bruce and Fox report provides estimates of the tax revenue impacts of electronic commerce for each of the 45 states that have sales and use taxes and for the District of Columbia. Impact estimates are provided for the years 2001, 2006, and 2011. For each of the three years, estimates are provided for trend losses, total electronic commerce losses, new electronic commerce losses, and combined losses, which equals the sum of trend and new electronic commerce losses. From these amounts it is possible to also estimate losses from old electronic commerce. The estimates for Iowa are summarized in Table 2 below.

Table 2: Bruce and Fox Estimated Iowa Tax Revenue Losses

Component	2001	2006	2011
Total Trend Losses	$ 59.5 million	$137.0 million	$251.0 million
Total E-Commerce Losses	$111.8 million	$372.3 million	$443.7 million
Old E-Commerce Losses	$ 52.6 million	$173.3 million	$207.8 million
New E-Commerce Losses	$ 59.2 million	$199.0 million	$235.9 million
Combines Losses	$118.8 million	$335.9 million	$486.9 million

These estimates indicate that new electronic commerce related tax revenue losses are expected to increase at an average annual rate of 27.4 percent between 2001 and 2006 and by an average annual rate of 3.5 percent between 2006 and 2011.

In order to determine how realistic the Bruce and Fox tax revenue loss estimates are for Iowa, the Iowa Department of Revenue and Finance (Iowa DRF) made its own estimates of tax revenue losses. The Department's estimates used the overall national electronic commerce estimates made by Forrester Research, Inc. However, assumptions relative to Iowa's shares of national electronic commerce activity, percentages of sales subject to sales and use taxes, and share of taxes owed currently being collected were made independently. In addition, the Department estimated the shares of tax revenue losses experienced by the State and local governments.

A more detailed description of the methodology used to estimate Iowa electronic commerce tax revenue impacts is presented in an appendix to this report. Following is a summary of the information and assumptions used in making the Iowa estimates.

- Based on statistics from the Census of Government Iowa's share of all state sales and use tax revenues collected nationwide equals 0.997 percent.
- Applying Iowa tax law to national estimates of business-to-consumer remote sales the share of Iowa sales estimated to be subject to sales and use taxes equals 55.7 percent.
- The share of business-to-business remote sales merchandise purchases that are estimated to be subject to Iowa sales and use taxes equals 17.4 percent.
- Based on research done by the Wisconsin Department of Revenue, the share of sales and use taxes due on remote sales that are estimated to already be collected equals 35.0 percent.

Applying the above estimates and assumptions to the Forrester Research remote sales forecasts for 2001, 2006, and 2011, the following estimates of Iowa tax revenue losses attributable to overall remote sales and electronic commerce were derived.

Table 3: Iowa DRF Estimated State Remote Sales and E-Commerce Tax Losses

Component	2001	2006	2011
E-Commerce	$ 26.0 million	$142.7 million	$203.6 million
Non-E-Commerce	$ 23.5 million	$124.6 million	$177.6 million
Total Remote Sales	$ 49.5 million	$267.3 million	$380.2 million

The above estimates pertain only to the State's General Fund. The estimates provided by Bruce and Fox for Iowa include both state and local government revenue impacts. Assuming that regular and school infrastructure local option taxes equal 18.8 percent of combined State sales and use tax revenues, Table 4 presents estimates of local government tax revenue losses.

Table 4: Iowa DRF Estimated Local Remote Sales and E-Commerce Tax Losses

Component	2001	2006	2011
E-Commerce	$ 4.9 million	$ 26.8 million	$ 38.3 million
Non-E-Commerce	$ 4.4 million	$ 23.4 million	$ 33.4 million
Total Remote Sales	$ 9.3 million	$ 50.3 million	$ 71.5 million

Estimates for combined State and local government tax revenue losses are summarized in Table 5.

Table 5: Iowa DRF Estimated Total Remote Sales and E-Commerce Tax Losses

Component	2001	2006	2011
E-Commerce	$ 30.9 million	$169.5 million	$241.9 million
Non-E-Commerce	$ 27.9 million	$148.0 million	$211.0 million
Total Remote Sales	$ 58.8 million	$317.6 million	$451.7 million

It is not possible to make exact comparisons between the overall Bruce and Fox and the Department of Revenue and Finance estimates of tax losses attributable to remote sales. This is because the total revenue loss estimates made by Bruce and Fox include what they refer to as trend losses resulting from changes in consumer behavior regarding the goods versus services mix of purchases and due to anticipated legislative tax base changes. However, a relatively close comparison can be made between the two estimates of tax revenue losses resulting from new electronic commerce activity. The Bruce and Fox estimates of these tax revenue losses that will be experienced by Iowa for 2001, 2006, and 2011 are $59.2 million, $199.0 million, and $235.9 million, respectively. The comparable Department tax revenue loss estimates for both State and local governments for the same years are $30.9 million, $169.5 million, and $241.9 million.

To better understand the differences between the two estimates, Dr. William F. Fox was contacted to obtain clarification regarding the methodology used to derive the estimates presented in the Bruce and Fox paper. First, he indicated the estimates of trend tax revenue losses for each state were derived from regression analyses of sales and use taxes for the years 1979 through 1996. These regressions took into consideration the ongoing shifts in consumer and business purchases from goods to services. In addition, they took into consideration legislative changes resulting in base broadening or contracting. Third, the trend loss estimates include taxes currently being evaded by individuals and businesses arising from traditional remote purchases. The data used to estimate trend losses ended with 1996 due to the authors' belief most new electronic commerce activity post-dates that year, and thus the trend loss estimates for 2001, 2006, and 2011 would not be distorted by any revenue losses attributable to new electronic commerce activity.

He further indicated the projected growth in electronic commerce reflected in the estimates corresponds to the recognition that Internet and other on-line business activity is still maturing with only about half of the nations population currently having Internet access either at home or at work. The authors' expectation and the Forrester Research forecast reflect the growth in electronic commerce will begin to plateau about 2006. Finally, Dr. Fox indicated their estimates for the shares of consumer and business electronic commerce purchases subject to tax were based on national averages. Thus, the fact that the Department's and the Bruce and Fox estimates of state and local government revenue losses differ is most likely due to different assumptions regarding the shares of purchases subject to tax.

Digitally Delivered Merchandise

One category of electronic commerce that has received increasing attention over the past few years is that involving products transferred digitally or in other electronic form. Products are generally classified as either tangible personal property or as services for state and local tax purposes. Iowa, like many other states, generally subjects the sale of tangible personal property to sales and use taxes unless legislation has been enacted granting an exemption from taxation. On the other hand, commercial transactions involving services are exempt from state and local sales and use taxes unless specifically made subject to these taxes by legislative action.

Within the past few years a new class of merchandise, which consists of information products transferred from sellers to buyers digitally over the Internet or by other electronic means, has been introduced. This class of products does not readily fit the definition of either tangible personal property or services. However, products of this type generally are close substitutes for more traditional products that are classified as tangible personal property. Consequently, many states, like Iowa, consider them to be tangible personal property for sales and use tax purposes. At the present time, products of this type are exempt from Iowa State and local sales and use taxes, but this exemption expires December 31, 2002. (Note: S.F. 2321, signed by the Governor May 10, 2002, made this exemption permanent.)

Examples of types of merchandise that is now being transferred digitally over the Internet or by other electronic means include books, recorded music, sheet music, videos, computer software, and statistical data. According to the U.S. Census Bureau's 1997 Economic Census the following value of items most likely to be offered in digital or other electronic form were sold in Iowa.

Table 6: Potential Digital Products Sold in Iowa, 1997 Value

Product Type	1997 Iowa Sales
Books and other publications	$ 95.4 million
Prerecorded tapes and CDs	$ 49.5 million
Published music	$ 2.9 million
Published databases and dictionaries	$149.7 million
Published computer software	$171.2 million
Total Potential Digital Goods	$468.7 million

No single source of information exists on the extent to which information products are being converted to digital or other electronic form. However, different trade groups and consulting firms have developed estimates for the rates of growth and rates of conversion for specific category of products. For example,

- The average annual growth rate of packaged computer software sales from 1997 to 2001 equaled 17.1%. In addition, the share of software delivered over the Internet is expected to increase from 12% as of 2001 to 67% by 2005. (Sources: Business Week , January 8, 2001 and January 14, 2002; Hoover's Online, April 1, 2002)
- Book sales are growing at an average annual rate of only 1.0%, but the growth of the electronic book market is at a much faster rate. By 2005, e-book sales are expected to total $2.3 billion in the United States and account for 10% of consumer book sales. (Source: Associated Press, March 25, 2001; E-Commerce Times, August 1, 2000)
- Online music sales are estimated by Jupiter Media Metrix at $900 million for 2001 and they are expected to increase to $5.5 billion by 2006, accounting for one-third of U.S. music sales by that date. The same source estimates that of the total online music sales forecast for 2006, $1.6 billion, or 29.1%, will be delivered digitally over the Internet. (Source: Weekly Ecommerce Stats, January 2002)
- The market for digital and electronic data services is highly segmented consisting of firms providing information ranging from weather reports to financial information to academic journal articles to training courses. One indication of the rate of growth in demand for these types of services is the growth in the demand by businesses and households for additional telephone lines. For the period from 1992 - 1996 the demand by businesses for additional telephone capacity grew at an average annual rate of 54% and for households it grew by 55%. (Source: Estimates of Telecommunications Services Expenditures Attributable to Online Service Production and Consumption, May 1998). Another study from the early 1990s estimated an average annual growth rate for Internet provided services equal to 15.9% for the period 1987 - 1992. This rate of growth has no doubt increased since that

time. A reasonable estimate for this category of products is an average annual growth rate equal to that for computer software, which is 17.1%.

Based on the above information, the following assumptions were made to estimate the 2003 fiscal impact of permanently exempting digitally or other electronically delivered merchandise from sales and use taxes.

- The annual rates of growth from 1997 to 2003 for the categories of products most likely to be affected are: (1) books and periodicals (1.0%), prerecorded tapes and CDs (14.5%), published music (1.0%), published databases and dictionaries (17.1%), and packaged computer software (17.1%).
- The shares of the different product categories likely to be transmitted digitally over the Internet or by other electronic means by 2003 are: (1) books and periodicals (5.0%), prerecorded tapes and CDs (15.0%), published music (1.0%), published databases and dictionaries (50.0%), and packaged computer software (27.2%).
- The shares of the product categories that would be subject to Iowa sales and use tax if the current temporary exemptions expire are: (1) books and periodicals (90.0%), prerecorded tapes and CDs (90.0%), published music (90.0%), published databases and dictionaries (25.0%), and packaged computer software (50.0%).

Therefore, if digital and other electronically delivered merchandise were permanently exempted from Iowa sales and use taxes, the full year impact for FY 2003 would equal an estimated $6.4 million. In addition, local option tax revenues would be decreased by an estimated $1.2 million.

Summary

The Bruce and Fox paper on the impacts of electronic commerce on state and local tax revenues reflects much higher levels of sales being made over the Internet and by other remote means than the levels of electronic commerce measured by the U.S. Census Bureau. This is because the Census Bureau is only currently tracking retail (business-to-consumer) sales made by electronic means. The Forrester Research estimates used in the Bruce and Fox report include business-to-business sales and other traditional remote sales (i.e., catalog and telephone sales) that are not included in the Census Bureau statistics. Furthermore, the Bruce and Fox report estimates the erosion of state and local sales and use tax bases resulting from a shift of consumer and business purchases from goods to services and due to law changes.

The Bruce and Fox estimates of tax revenue losses reflect significant growth from 2001 to 2006 followed by much slower growth after 2006. This reflects Forrester Research's forecast that assumes a rapid increase in Internet use, particularly by businesses, over the next few years with this growth reaching a plateau about 2006 as the saturation level for this new technology is reached.

The Bruce and Fox report appears to assume that somewhat higher proportions of Iowa business-to-consumer and business-to-business sales are subject to tax than has been assumed by the Department in making its own estimates of the effects of electronic commerce on state tax revenues.

Therefore, using both the Department and the Bruce and Fox estimates, state and local tax revenue losses due to new electronic commerce activity most likely equal somewhere between $30.9 million and $59.2 million in 2001. Furthermore, the impact is likely to increase to between $169.5 million and $199.0 million by 2006. The erosion of Iowa state and local tax bases from traditional remote sales is also likely to continue to increase. The overall losses of tax revenues currently probably total at least $58.8 million per year and these losses may be expected to increase to $317.6 million within another four years.

Finally, the exempting of digitally delivered and other electronically delivered goods from state and local sales and use taxes presents revenue agencies with challenges that transcend the issue of lost tax revenues. These products obscure the distinction between tangible personal property and services generally recognized in state sales and use tax statutes. The direct revenue losses from exempting this class of products from sales and use taxes are estimated to equal $6.4 million in State revenue and $1.2 million in local government revenue for FY 2003. This impact will likely increase by three to five times over the next several years. Indirectly, additional tax impacts may result if this class of property is afforded treatment different from that provided to sellers of comparable products classified as tangible personal property because the loss of sales by these conventional retailers could eventually force them out of business.

Appendix: Iowa Sales and Use Tax Impact Estimation Methodology

The estimation by the Iowa Department of Revenue and Finance (Iowa DRF) of the impact of remote sales and electronic commerce on state sales and use tax revenues consisted of a five step procedure. This procedure was repeated four times to estimate revenue loss impacts for each of the following categories of remote and electronic commerce separately.

- Iowa Business-to-Consumer Electronic Commerce
- Iowa Business-to-Business Electronic Commerce
- Iowa Business-to-Consumer Non-Electronic Commerce Remote Sales
- Iowa Business-to-Business Non-Electronic Commerce Remote Sales

The first step involved determining Iowa's share of national electronic and remote sales as forecast by Forrester Research. Although sales and use tax rates are not the same in every state with such taxes, an estimate of Iowa's share of the national totals was derived by computing Iowa's share of sales and use tax collections. This was accomplished by using general sales tax collection data for the 45 states with sales and use taxes compiled by the U.S. Census Bureau, Government Census Division. Iowa's share of the total for the 45 states for the years 1997 through 2000 ranged from 0.980 percent to 1.020 percent. Iowa's average share over the four years equaled 0.997 percent. Applying this percentage to the national remote and electronic commerce forecasts for 2001, 2006, and 2006 yielded Iowa estimated sales for these years.

Second, the values of Iowa's total business-to-consumer remote sales or total business-to-business remote sales subject to sales and use taxes were determined. For business-to-consumer remote sales, this involved computing an average taxable percentage for those categories of products identified by Forrester Research as most commonly involved in remote sales transactions. This average taxable percentage was computed by applying Iowa specific sales and use tax percentages to this list of products and weighting the tax rate for each type of product by its estimated national sales amount from 2003. This resulted in an average taxable percentage equal to 55.7 percent for Iowa business-to-consumer remote sales. Finally, this taxable percentage was applied to the results of the first step to yield taxable base values for each of the three years. A similar procedure was followed for business-to-business remote sales. For these sales the average Iowa taxable percentage was determined to equal 17.4 percent.

Third, allowance was made for the fact that sales and use taxes were already being collected on a portion of remote sales transactions. Based on information obtained from the Wisconsin Department of Revenue a rate of 35.0 percent was assumed for the share of owed taxes already being collected. Therefore, multiplying the values for taxable sales for both business-to-consumer and business-to-business transactions derived in the second step by 0.65 yielded estimates of uncollected taxes due on remote sales.

Fourth, values for the amounts of electronic commerce and non-electronic commerce remote sales were determined.

Finally, estimates for State sales and use tax losses for each of the four categories of remote sales transactions were derived by multiplying the results from step four by the State's 5.0 percent sales and use tax rate.

The tax loss estimates for the business-to-consumer and the business-to-business electronic commerce shares of Iowa remote sales are shown in Table A1. The tax loss estimates for the business-to-consumer and the business-to-business non-electronic shares of Iowa remote sales are shown in Table A2.

The estimates for local government remote sales related tax losses were derived by multiplying the State estimates by 18.8 percent. These estimated tax losses are presented in Table 4 of the report.

Table A1: Estimated Iowa Electronic Commerce Remote Sales Tax Losses

Iowa Business-to-Consumer E-Commerce Tax Loss

Part 1A: U.S. and Iowa Remote Sales ($ million)

Year	National Base	Iowa Share	Iowa Base
2001	55,800.0	0.00997	556.3
2006	257,500.0	0.00997	2,567.3
2011	303,700.0	0.00997	3,027.9

Part 2A: Iowa Taxable Remote Sales ($ million)

Year	Iowa Base	Taxable Share	Taxable Base
2001	556.3	0.557	309.9
2006	2,567.3	0.557	1,430.0
2011	3,027.9	0.557	1,686.5

Part 3A: Uncollected Taxes on Remote Sales ($ million)

Year	Taxable Base	Uncollected Share	Uncollected Base
2001	309.9	0.650	201.4
2006	1,430.0	0.650	929.5
2011	1,686.5	0.650	1,096.2

Part 4A: E-Commerce Share of Remote Sales ($ million)

Year	Taxable Base	E-Comm Share	E-Comm Base
2001	201.4	0.526	105.9
2006	929.5	0.534	496.3
2011	1,096.2	0.534	585.4

Part 5A: State Tax Loss from E-Commerce ($ million)

Year	E-Comm Base	State Tax Rate	Tax Loss
2001	105.9	0.050	5.3
2006	496.3	0.050	24.8
2011	585.4	0.050	29.3

Iowa Business-to-Business E-Commerce Tax Loss

Part 1B: U.S. and Iowa Remote Sales ($ million)

Year	National Base	Iowa Share	Iowa Base
2001	698,800.0	0.00997	6,967.0
2006	3,916,200.0	0.00997	39,044.5
2011	5,790,500.0	0.00997	57,731.3

Part 2B: Iowa Taxable Remote Sales ($ million)

Year	Iowa Base	Taxable Share	Taxable Base
2001	6,967.0	0.174	1,212.3
2006	39,044.5	0.174	6,793.7
2011	57,731.3	0.174	10,045.2

Part 3B: Uncollected Taxes on Remote Sales ($ million)

Year	Taxable Base	Uncollected Share	Uncollected Base
2001	1,212.3	0.650	788.0
2006	6,793.7	0.650	4,415.9
2011	10,045.2	0.650	6,529.4

Part 4B: E-Commerce Share of Remote Sales ($ million)

Year	Taxable Base	E-Comm Share	E-Comm Base
2001	788.0	0.526	414.5
2006	4,415.9	0.534	2,358.1
2011	6,529.4	0.534	3,486.7

Part 5B: State Tax Loss from E-Commerce ($ million)

Year	E-Comm Base	State Tax Rate	Tax Loss
2001	414.5	0.050	20.7
2006	2,358.1	0.050	117.9
2011	3,486.7	0.050	174.3

Table A2: Estimated Iowa Non-Electronic Commerce Remote Sales Tax Losses

Iowa Business-to-Consumer Non-E-Commerce Tax Loss

Part 1A: U.S. and Iowa Remote Sales ($ million)

Year	National Base	Iowa Share	Iowa Base
2001	55,800.0	0.00997	556.3
2006	257,500.0	0.00997	2,567.3
2011	303,700.0	0.00997	3,027.9

Part 2A: Iowa Taxable Remote Sales ($ million)

Year	Iowa Base	Taxable Share	Taxable Base
2001	556.3	0.557	309.9
2006	2,567.3	0.557	1,430.0
2011	3,027.9	0.557	1,686.5

Part 3A: Uncollected Taxes on Remote Sales ($ million)

Year	Taxable Base	Uncollected Share	Uncollected Base
2001	309.9	0.650	201.4
2006	1,430.0	0.650	929.5
2011	1,686.5	0.650	1,096.2

Part 4A: Other Remote Sales Share($ million)

Year	Taxable Base	Non-E-Comm Share	Non-E-Comm Base
2001	201.4	0.474	95.5
2006	929.5	0.466	433.1
2011	1,096.2	0.466	510.9

Part 5A: Other Remote Sales State Tax Loss ($ million)

Year	Non-E-Comm Base	State Tax Rate	Tax Loss
2001	95.5	0.050	4.8
2006	433.1	0.050	21.7
2011	510.9	0.050	25.5

Iowa Business-to-Business Non-E-Commerce Tax Loss

Part 1B: U.S. and Iowa Remote Sales ($ million)

Year	National Base	Iowa Share	Iowa Base
2001	698,800.0	0.00997	6,967.0
2006	3,916,200.0	0.00997	39,044.5
2011	5,790,500.0	0.00997	57,731.3

Part 2B: Iowa Taxable Remote Sales ($ million)

Year	Iowa Base	Taxable Share	Taxable Base
2001	6,967.0	0.174	1,212.3
2006	39,044.5	0.174	6,793.7
2011	57,731.3	0.174	10,045.2

Part 3B: Uncollected Taxes on Remote Sales ($ million)

Year	Taxable Base	Uncollected Share	Uncollected Base
2001	1,212.3	0.650	788.0
2006	6,793.7	0.650	4,415.9
2011	10,045.2	0.650	6,529.4

Part 4B: Other Remote Sales Share($ million)

Year	Taxable Base	Non-E-Comm Share	Non-E-Comm Base
2001	788.0	0.474	373.5
2006	4,415.9	0.466	2,057.8
2011	6,529.4	0.466	3,042.7

Part 5B: Other Remote Sales State Tax Loss ($ million)

Year	Non-E-Comm Base	State Tax Rate	Tax Loss
2001	373.5	0.050	18.7
2006	2,057.8	0.050	102.9
2011	3,042.7	0.050	152.1