REVENUE ESTIMATE
(REV. 4/98)

STATE OF CALIFORNIA
BOARD OF EQUALIZATION

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REVENUE ESTIMATE

ELECTRONIC COMMERCE AND MAIL ORDER SALES

Summary

Updated Estimates. Based on information released by the U.S. Census Bureau and other sources in 2010, we have updated our estimates of remote sales (electronic and traditional mail order sales) revenue losses from out-of-state vendors. We now estimate annual revenue losses of $1.145 billion in calendar year 2010 (to be remitted in fiscal year 2010-11). Of the total, $795 million are owed by consumers and $350 million were unpaid by businesses. These revenues are spread among approximately 13.1 million households and 3.4 million businesses. Unpaid sales and use tax liabilities in 2010-11 average $61 per year for each California household and $102 per year for each California business. Revenue from these out-of-state electronic commerce and mail order purchases are a significant component of the sales and use tax gap. (As defined here, the tax gap is the difference between what taxpayers owe and what they voluntarily pay.) This paper documents our estimates of sales and use tax revenues associated with electronic commerce and mail order sales that are not voluntarily paid from fiscal years 2008-09 through 2011-12.

Comparisons to Previous Estimates. Our previous estimates of remote sales revenue losses were released about a year ago. The estimates presented in this paper reflect the following new developments:

- The U.S. Census Bureau revised historical e-commerce estimates of purchases for both businesses and consumers. Most of the revisions were upward for both consumers and businesses.
- The recession that began in December 2007 ended in June 2009. Available evidence indicates that e-commerce growth rates for consumers and businesses have increased since the recession ended.
- The Board of Equalization implemented the In-state Service Business Component of the Tax Gap program in July 2008. We reviewed our revenue estimates for this program in light of additional information that became available within the past year.
- Legislation was passed and signed into law in 2009 (ABx4 18, Statutes of 2009) that we expect to significantly improve compliance of use tax payments by businesses, starting in fiscal year 2009-10. We reviewed and updated our compliance assumptions and revenue estimates associated with this program in light of additional information that became available within the past year.
- SB 1009 (Statutes of 2003), required a line on the income tax form to encourage consumers to pay their use tax obligations. This legislation and Board of Equalization outreach efforts have contributed to more consumers paying their use tax obligations on their income tax forms in recent years. The SB 1009 provisions were scheduled to sunset on January 1, 2010. However, legislation enacted in October 2010 (SB 858,

Statutes of 2010) extends the requirement to apply to sales made in 2010 and subsequent years.[1]

Background, Methodology, and Assumptions

(1) Background Sources and Data Assumptions

The methodology used to derive these estimates is very similar to that which we used in our previous revenue estimates. There are two major markets for electronic commerce: business-to-consumer (B-to-C) and business-to-business (B-to-B). Each market has its own separate data sources and critical assumptions. We will assume all mail order sales are B-to-C. A more detailed description of our methodology and assumptions is found in our technical documentation.[2]

(2) Business-to-Consumer (B-to-C)

Other than reflecting the developments discussed above, we made no major changes in our methodology used to estimate business-to-consumer (B-to-C) purchases.

(A) Data Sources. We define remote sales as all sales from retail sellers to households that are made electronically or by using traditional mail order sales channels. Our basic data source is the U.S. Census Bureau, as it was in previous estimates. The Census Bureau publishes sales estimates for North American Industrial Classification System (NAICS) Industry 4541 ("Electronic Shopping and Mail Order Houses," or ESMOH) monthly, annually and every five years in various reports.[3] This industry data is our basic data source, and it consists of retailers whose primary business (or a separate subsidiary) is mail order or electronic commerce sales. From another Census Bureau publication we add an estimate of e-commerce sales from companies that make a portion of their sales from websites, but have no separate website subsidiaries.[4]

(B) Taxable Portion of Remote B-to-C Sales. Data from the *2007 Economic Census* for remote sales for NAICS Industry 4541 include detailed product categories and sales volumes of each. Based on this list of products, we estimate that about 30.5 percent of U.S. remote sales were exempt in 2007 under the California sales and use tax law. The vast majority of these exempt sales, 25.8 percent of the 30.5 percent, are prescription drugs. These percentages apply to all remote sales; there are no separate product data for electronic and mail order sales. We will assume that these national product category percentages of remote sales also apply to

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[1] SB 858 (Statutes of 2010) applies to purchases of tangible personal property made on or after January 1, 2010, in taxable years beginning on or after January 1, 2010.

[2] "2010 Electronic Commerce and Mail Order Sales Revenue Estimates – Technical Documentation," December 6, 2010.

[3] Every five years the U.S. Census Bureau takes a census of businesses. The most recent census year was 2007.

[4] *2008 E-Commerce Multi-sector Report,* U.S. Census Bureau, May 27, 2010, web site: http://www.census.gov/eos/www/ebusiness614.htm.

California. This premise implies that 69.5 percent of remote sales are taxable to California purchasers.

(C) Compliance and Nexus Percentage Assumptions. For revenue estimation purposes, we assume that all retailers registered with the Board of Equalization (firms with California nexus) are remitting the sales and use taxes they owe. We further assume that all use tax payments made by households were remitted on their income tax forms.

Based on research done in 2004 and updated with more recent information from the *2007 Economic Census of Retail Trade,* we estimate that about 63 percent of remote sales to California households were made from retailers that have nexus in California. This estimate is based on company reports and employment and sales by employment size category.[5] We also confirmed this estimate with data from the *Internet Retailer Top 500 Guide*. This percentage implies that 37 percent of revenues related to sales made by remote sellers to California households are not paid except for the amounts paid on income tax forms.

(D) Estimate and Forecast Assumptions. The most detailed data available are for 2008, and some data are available for 2009. An estimate of remote sales to consumers (ESMOH, as discussed earlier) for 2010 was made based on data available for the first nine months of the year. ESMOH sales from January through September 2010 increased 15.6 percent compared to the same period of 2009. Forecasts for 2011 and 2012 growth were made assuming the growth rate of ESMOH for the three years preceding the recession (2005, 2006, and 2007). This average growth rate is 13.3 percent per year.

Table 1 shows how these assumptions and data were combined to result in revenue estimates for each year. The data in the table are documented with line number references. We assume that all calendar year liabilities are all paid in the fiscal year ending July 1 of the following year. We first estimate what we call baseline revenues and then adjust them by subtracting use tax liabilities, most of which are paid by consumers on their income tax forms.[6] These use tax payments on income tax forms increased about 14 percent in 2009. We assumed that this growth rate would continue through 2011.

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[5] Memo from Joe Fitz, Chief Economist, to Board Member Leonard, "Electronic Commerce," August 30, 2005.

[6] Line 14 of Table 1 includes some unknown amounts of use taxes paid by sole proprietors on their income tax forms.

Table 1
Business to Consumer (B-to-C) Sales and Revenues
(Millions of Dollars Unless Otherwise Noted)

		Calendar Years				
		Actual	**Estimated**	**Estimated**	**Forecast**	**Forecast**
Line No.		**2008**	**2009**	**2010**	**2011**	**2012**
1	U.S. Sales Made by Electronic Shopping and Mail-Order Houses (ESMOH, NAICS 4541)	227,084	n.a.	n.a.	n.a.	n.a.
2	Other U.S. Retail E-commerce Sales (Excluding Cars) [1/]	9,357	n.a.	n.a.	n.a.	n.a.
3	Total Remote Sales (Line 1 + Line 2)	238,449	246,943	285,397	323,217	366,049
4	Growth Rate	2.1%	3.6%	15.6%	13.3%	13.3%
5	Taxable Percentage in 2007	69.5%	69.5%	69.5%	69.5%	69.5%
6	Estimated Taxable U.S. Remote Sales (Line 3 x Line 5)	165,722	171,625	198,351	224,636	254,404
7	California Share of U.S.	12%	12%	12%	12%	12%
8	California-Taxable U.S. Remote Sales (Line 6 x Line 7)	19,887	20,595	23,802	26,956	30,528
9	Noncompliance Rate	37%	37%	37%	37%	37%
10	Revenue Loss Tax Base (Line 8 x Line 9)	7,404	7,668	8,862	10,036	11,366
11	Tax Rate (Average Annual Rate for Calendar Year)	8.00%	8.83%	9.10%	8.61%	8.11%
12	Estimated Baseline Revenues (Line 10 x Line 11)	$592	$677	$806	$864	$922
		Fiscal Years				
		2008-09	**2009-10**	**2010-11**	**2011-12**	**2012-13**
13	Estimated Baseline Revenues	$592	$677	$806	$864	$922
14	Estimated Use Taxes Paid	$9	$10	$11	$13	$15
15	***Estimated Revenues Losses (Line 13 - Line 14)***	***$583***	***$667***	***$795***	***$851***	***$907***

Notes:

1/ Line 2 adjusts online sales to include sales from companies without website subsidiaries. These are generally relatively small sellers.

(2) Business-to-Business (B-to-B)

(A) Data Sources and Definitions
For a variety of reasons the data available for estimating B-to-B revenues are less certain than that for B-to-C revenues.[7] We based our B-to-B revenue estimate on data from the Merchant Wholesale Trade Sales Survey published by the U.S. Census Bureau.[8] Unlike the B-to-C data, we are not aware of any Census Bureau estimates that include traditional mail order sales to businesses. We assume that B-to-B electronic commerce sales include traditional mail order sales from one business to another business.

(B) California Adjustments
Vehicle Sales Adjustments and Industry Exemptions. We excluded transportation equipment purchases from our estimates because most vehicles are registered with the Department of Motor Vehicles and sales and use tax compliance is generally very high as a result. Some industries have exemptions or partial exemptions that reduce their use tax liabilities. The industries with exemptions for which we made adjustments are insurance (which is exempt from the use tax) and agriculture, which is exempt from the state portion of sales and use taxes for equipment purchases.

We adjusted for vehicle sales and these specific industry exemptions because we found data sources that in our judgment could reasonably estimate the exemptions. No data exists, to our knowledge, for online purchases for these adjustments. Therefore, we assumed that the overall purchase data relationships matched the online data relationships. Sources of data for these adjustments are the U.S. Census Bureau and the U.S. Bureau of Economic Analysis (BEA).[9]

California Share of U.S. Sales. Unlike B-to-C sales, we excluded the California portion of sales explicitly. (In B-to-C sales, the California portion is subsumed in the portion of all U.S. retail companies selling online that are registered with the Board. For B-to-B sales we are unable to determine the percentage of all companies that are registered with the Board.) Instead, we assume an estimate of the California share of all U.S. companies are registered with the Board. We use an estimate of 13 percent for the California share of U.S. B-to-B sales, which is slightly higher than our population share of the nation (12 percent) to reflect the share of California to U.S. gross domestic product.

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[7] U.S. Census Bureau e-commerce data are collected in several separate surveys. These surveys use different measures of economic activity (shipments, sales and revenues). The Census Bureau notes that these measures "should be interpreted with caution." There is potential for double counting of sales if the data are interpreted incorrectly. Furthermore, from a taxation perspective we do not know with certainty how much of the total B-to-B sales and use tax obligation has already been paid by businesses. For a more detailed discussion of these issues, see the Technical Documentation. The B-to-B estimates are subject to change to the extent that additional research may result in more accurate information.

[8] *2008 E-Commerce Multi-sector Report,* U.S. Census Bureau, May 27, 2010, web site: http://www.census.gov/eos/www/ebusiness614.htm.

[9] Sources: *2010 Capital Spending Report: U.S. Capital Spending Patterns, 1999-2008,* U.S. Census Bureau; Table 5.5.5 and "Industry Tables," U.S. Bureau of Economic Analysis.

(C) Exempt Sales. Sales data tabulated by the Census Bureau include all sales, both final sales and sales of intermediate goods used as inputs in the production process. We assume that 60 percent of sales are exempt, either because the exemption is related to the kinds of final goods sold or because the sales are not of final goods, but are instead sales for resale or intermediate goods used in production. If 60 percent of sales are exempt, this implies that the remaining 40 percent of sales are taxable under California law.

(D) Compliance by Businesses. These estimates reflect all taxable purchases made by businesses without addressing the issue of whether sales or use taxes have been paid. There are several channels through which sales and use taxes on purchases could be paid by businesses. Purchases are often made from companies that are registered with the state, and sales taxes would be paid at the time of purchase. Alternatively, use taxes could be paid by the purchasing firm or on income tax returns of individual proprietors. Overall compliance rates by businesses using any of these channels are unknown.

Through one means or another we believe that sales and use taxes are paid on 90 percent of the California taxable B-to-B electronic commerce sales. Board data on tax returns processed under AB 4x 18 indicate a similar percentage. The Illinois Department of Revenue estimates that businesses pay 90 percent of their sales and use tax liabilities.[10] This compliance percentage also falls within a range reported by the U.S. General Accountability Office (GAO), which assumed a range of 50 to 95 percent compliance rates for taxable B-to-B purchases excluding cars.[11] We believe that California is likely to have far better compliance than most states because of both our size (which implies a greater percentage of business purchases from firms with nexus) and our long tradition of relatively strong tax administration. Ninety percent compliance implies that the remaining 10 percent of taxes due are not paid.

(E) Estimate and Forecast Assumptions. The most recent B-to-B e-commerce data are available for 2008. Census Bureau and BEA data indicate that the vast majority of business spending for final consumption are for capital equipment items. We estimated B-to-B e-commerce for 2009 using the growth rates in capital equipment spending from the BEA. For the 2010 through 2012 period we used forecasts of capital equipment spending from the UCLA Anderson Forecast.[12]

Table 2 shows how these assumptions and data were combined to result in revenue estimates for each year. The data in the table are documented with line number references. We assume that all calendar year liabilities are all paid in the fiscal year ending July 1 of the following year. We first estimate what we call baseline revenues and then adjust them by subtracting estimates of use tax liabilities to be paid by businesses because of both the BOE Tax Gap program efforts and AB x4 18. Revenues from BOE Tax Gap Program efforts are estimated to be $70 million per year. The revenue estimates for AB x4 18 range from $59 million in fiscal year 2010-11 to

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[10] "A New Method for Estimating Illinois's E-Commerce Losses," Andy Chupick and Natalie Davila, *Tax Analysts Special Report,* February 16, 2009.

[11] *Sales Taxes: Electronic Commerce Growth Presents Challenges; Revenue Losses Are Uncertain*, U.S. General Accounting Office, June, 2000. Car sales are often excluded in such analyses because with vehicle registration requirements, tax compliance rates for car purchases are assumed to be close to 100 percent.

[12] *UCLA Anderson Forecast,* September 2010 forecast.

$116 million in fiscal year 2012-13. These estimates have the effect of subtracting over one-third of baseline revenues from the estimates in fiscal year 2012-13.

Table 2
Business to Business (B-to-B) Sales and Revenues
(Millions of Dollars Unless Otherwise Noted)

		Calendar Years				
		Actual	**Estimated**	**Estimated**	**Forecast**	
Line No.		**2008**	**2009**	**2010**	**2011**	**2012**
1	Merchant Wholesale Trade Sales (MWTS) E-commerce	1,262,370	1,064,079	1,188,463	1,305,152	1,431,051
2	Percent Change	0.9%	-15.7%	11.7%	9.8%	9.6%
	California Adjustments:					
3	Transportation equipment	30,323	15,738	17,578	19,304	21,166
4	Partial exemption for agricultural equipment	5,644	5,047	5,637	6,190	6,788
5	Insurance equipment	2,515	2,120	2,368	2,600	2,851
6	U.S. E-commerce Adjusted for Industry Exemptions (Line 1 - Line 3 - Line 4 - Line 5)	1,223,888	1,041,174	1,162,880	1,277,058	1,400,247
7	California share of U.S. Gross Domestic Product	13%	13%	13%	13%	13%
8	Exclude Estimated Sales Made by CA Businesses (Line 6 x Line 7)	159,105	135,353	151,174	166,018	182,032
9	California-Adjusted U.S. Remote Sales (Line 6 - Line 8)	1,064,782	905,821	1,011,706	1,111,040	1,218,215
10	Estimated Share of Taxable Sales	40%	40%	40%	40%	40%
11	California-Taxable U.S. Remote Sales (Line 7 x Line 9 x Line 10)	55,369	47,103	52,609	57,774	63,347
12	Baseline Noncompliance Rate	10%	10%	10%	10%	10%
13	Revenue Loss Tax Base (Line 11 x Line 12)	5,537	4,710	5,261	5,777	6,335
14	Tax Rate (Average Annual Rate for Calendar Year)	8.00%	8.83%	9.10%	8.61%	8.11%
		Fiscal Years				
		2008-09	**2009-10**	**2010-11**	**2011-12**	**2012-13**
15	Estimated CA-adjusted baseline revenues (Line 13 x Line 14)	$443	$416	$479	$497	$514
16	Revenue Adjustments:					
17	BOE Tax Gap Program		70	70	70	70
18	Assembly Bill x4 18		29	59	81	86
19	***Estimated Revenues Losses (Line 15 - Line 17 - Line 18)***	***$443***	***$317***	***$350***	***$346***	***$358***

Revenue Summary

California electronic commerce and mail order sales and use tax revenue estimates for fiscal years 2008-09 through 2011-12 are summarized in Table 3 below.

Table 3
Estimated Revenue Losses From Total Remote Sales (B-to-B and B-to-C)
(Millions of Dollars)

	Fiscal Years			
	2009-10	**2010-11**	**2011-12**	**2012-13**
Total Estimated State and Local Revenue Losses[1/]	***$983***	***$1,145***	***$1,197***	***$1,265***
State General Fund	$641	$755	$765	$780
State Fiscal Recovery Fund	$28	$31	$35	$39
Local Funds	$315	$359	$397	$446

1/ Total estimated state and local revenue losses are the sum of figures from Table 1, Line 15 and Table 2, Line 19.

Qualifying Remarks

These revenue estimates are based on overall projections of taxable sales without knowing whether or not sales or use taxes have already been paid. We then make assumptions about compliance to determine the revenue estimates. It is extremely difficult, if not impossible, to accurately determine the extent to which taxpayers are complying.

We also note that the most cost efficient method of collecting sales and use tax is to have the seller collect the tax and remit it to the Board. The state's sales and use tax law is designed to collect the revenue in this manner. The electronic commerce transactions that these estimates address are from out-of-state sellers who are not registered with the Board because they are not "engaged in business" in California. Federal law precludes states from requiring businesses not engaged in business in their states to collect the use tax from the purchaser. Without the ability to require the seller to collect the use tax and remit it to the Board, collecting these use tax liabilities from the purchaser can become very difficult and expensive.

In these electronic commerce transactions, since the seller is not registered with the Board, the purchaser has a use tax liability. Our estimates identify electronic commerce transactions as either business-to-business or business-to-consumer. For the most part neither the purchasing business nor the consumer may be aware of their use tax liability.

According to the *Economic Census* there were 3,426,952 businesses in California in 2007. The total unpaid use tax from electronic commerce sales made to these businesses is estimated to be $350 million in fiscal year 2010-11. (This is 10 percent of total taxable B-to-B spending on which taxes are not being paid referenced on Line 13 in Table 2, adjusted for Board of Equalization Tax Gap programs and AB 4x 18.) That means that the average use tax liability is about $102 per year. While some taxpayers may owe large amounts, others will have paid their liability in full or may not have use tax liabilities from remote purchases. Without the expensive process of auditing a large number of these taxpayers, it would be difficult to know how much of this revenue we can expect to receive.

For business-to-consumer electronic commerce sales, it would be even less cost effective to pursue individual purchasers. There are about 13.1 million households in California. The average liability for electronic commerce sales would be about $61 per household per year. (This is 37 percent of total taxable B-to-C spending on which taxes are not being paid referenced on Line 15 in Table 1.)

Preparation

This revenue estimate was prepared by Joe Fitz, Research and Statistics Section. For additional information, please contact Mr. Fitz at (916) 323-3802.

Current as of December 6, 2010.

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