

Department of Revenue  
Research Report #2004-4  
December 20, 2004

Donald Gutmann  
Operations Research  
Program Manager  
(360) 570-6073  
Julie Williams  
Research Analyst  
(360) 570-6074

## **DEPARTMENT OF REVENUE COMPLIANCE STUDY**

### **Executive Summary**

This study focuses exclusively on taxpayers registered with the Washington State Department of Revenue. Using the results of a stratified random sample of audits completed between 1999 and 2002, this report estimates taxpayer noncompliance for state taxes included on the Department's combined excise tax return. Drawing on multiple years of sample data necessitated annualizing the assessments and statistically projecting the figures to a single mid year to account for inflation factors and to create informative, measurable information. For the 2005 study, we projected the figures to Calendar Year (CY) 2000. All estimates represent the total population of registered taxpayers. Additionally, noncompliance figures discussed in this report equal the net of the estimated debit and credit assessments, unless labeled otherwise. Major findings include the following:

- ◆ For CY 2000, we estimated \$182.6 million in total annual excise tax noncompliance for registered taxpayers. This equals 2.2 percent of the total tax liability.
- ◆ Use tax holds the highest level of noncompliance at 19.5 percent, with nearly \$54 million in unreported tax.
- ◆ The estimated annual noncompliance for sales tax is \$64.1 million. However, this only represents 1.1 percent of the total sales tax liability.
- ◆ Hazardous substance tax possesses the second highest rate of noncompliance at 9.9 percent.
- ◆ For the local share of noncompliance, we estimate \$35.1 million - \$16.4 million of this represents use tax and the remaining \$18.6 million comprises unreported sales tax.

- ◆ The transportation/utility industry holds the largest dollar amount (\$40.7 million) and second highest rate of noncompliance (5.5 percent).
- ◆ The finance/real estate industry possesses the highest rate of noncompliance but only the fifth largest dollar amount. The industry's total estimated unreported tax equals \$21.8 million which equates to 7.7 percent of the industry's total tax liability.
- ◆ Rates of noncompliance increase for firms with less than \$500,000 of gross income and for firms with more than \$10 million of gross income, while noncompliance decreases for firms between \$500,000 and \$10 million of gross business income.
- ◆ Despite higher rates of noncompliance, the actual dollar amount unreported per firm for small taxpayers is much less than for large taxpayers.
- ◆ Newer firms hold a much higher rate of noncompliance than older firms (6.7 percent compared to 1.5 percent, respectively).

**Table 1. 2005 Compliance Study Compared  
to the 2003 Compliance Study  
Noncompliance Estimates by Tax Type**

Type of Tax	2003 Compliance Study		2005 Compliance Study	
	Estimated Noncompliance	Noncompliance as a Percent of Total Tax Liability	Estimated Noncompliance	Noncompliance as a Percent of Total Tax Liability
Sales	\$65,530,997	1.3%	\$64,104,915	1.1%
Use	\$79,066,822	27.9%	\$53,523,828	19.5%
Business & Occupation	\$27,463,349	1.5%	\$54,503,763	2.6%
Public Utility	\$5,040,801	2.4%	\$746,999	0.3%
Hazardous Substance	\$5,990,217	14.0%	\$6,896,733	9.9%
Other	\$497,987	0.4%	(\$157,148)	-0.3%
<b>Total</b>	<b>\$183,590,173</b>	<b>2.5%</b>	<b>\$182,619,090</b>	<b>2.2%</b>

## **INTRODUCTION**

This study presents the results of the 2005 Compliance Study and exclusively focuses on unreported tax by taxpayers registered with the Washington State Department of Revenue. For the purposes of this study, the terms “unreported tax” and “noncompliance” are used interchangeably.

Using the results of a stratified random sample of audits completed between 1999 and 2002, this report estimates taxpayer noncompliance for state taxes included on the Department's combined excise tax return. To statistically represent the universe of registered Washington taxpayers, we stratified the sample data by firm size and industry. Many of the smaller firms randomly selected for audits depict taxpayers normally ignored by standard audit selection procedures. All of the noncompliance figures provided in this report equal the net of the estimated debit and credit assessments, unless labeled otherwise. A debit assessment means the taxpayer underpaid their tax liability and a credit assessment means the taxpayer overpaid their tax liability. Additionally, when referring to total tax liability, we mean the noncompliance amount plus the amount of voluntarily reported tax.

The state taxes discussed in this study include sales, use, business and occupation (B&O), public utility, and hazardous substance tax. Figure 2 provides some limited estimates of noncompliance for local sales and use tax; however, local tax is excluded from all other tables. State taxes not included are property tax, real estate excise tax, timber excise tax, leasehold excise tax, and taxes not administered by the Department of Revenue. Additionally, this report does not attempt to estimate noncompliance for unregistered businesses.

Audits usually cover a number of years, with four years being the most common. Drawing on multiple years of sample data necessitated annualizing the assessments and statistically projecting the figures to a single mid year to account for inflation factors and to create informative, measurable information. For the 2005 study, we projected the figures to CY 2000.

All estimates represent the total population of registered taxpayers. In other words, these figures estimate the total noncompliance the Department of Revenue would discover if the Department performed an audit on each combined excise tax return filed.

## TOTAL NONCOMPLIANCE

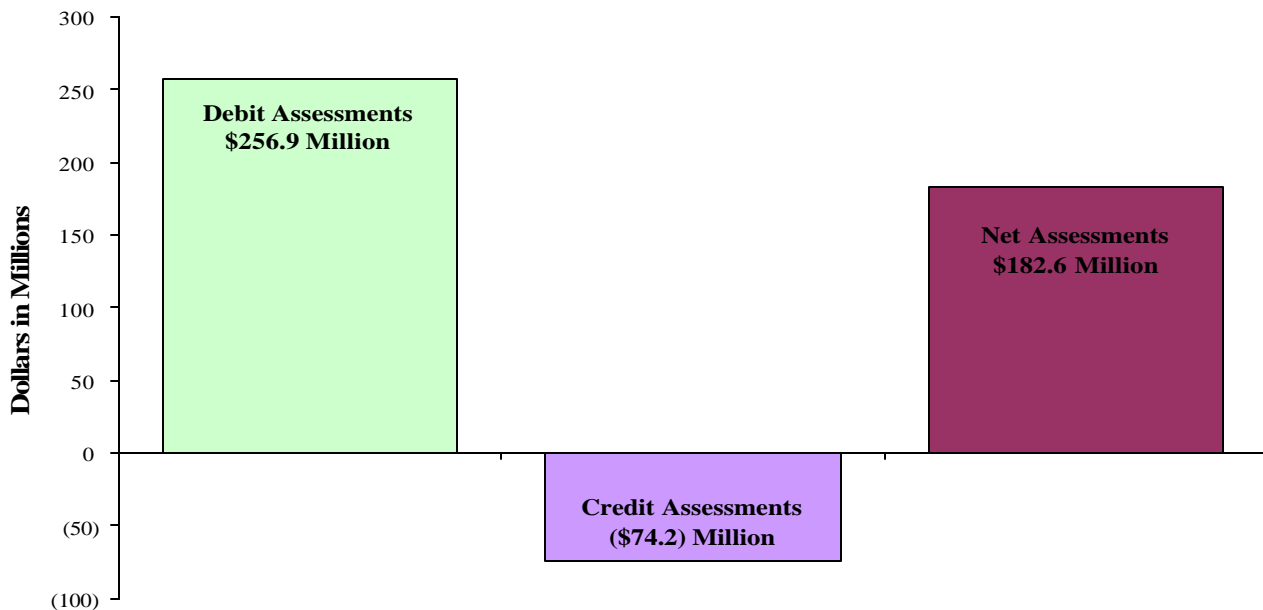
**Table 2. Estimated Excise Tax Noncompliance for Registered Taxpayers**

Type of Tax	Estimated Noncompliance	Voluntarily Reported Tax	Noncompliance as a Percent of Total Tax Liability
Sales	\$64,104,915	\$5,546,950,938	1.1%
Use	\$53,523,828	\$234,007,292	19.5%
Business & Occupation	\$54,503,763	\$2,057,513,361	2.6%
Public Utility	\$746,999	\$249,652,056	0.3%
Hazardous Substance	\$6,896,733	\$62,888,613	9.9%
Other	(\$157,148)	\$59,058,517	-0.3%
<b>Total</b>	<b>\$182,619,090</b>	<b>\$8,210,070,777</b>	<b>2.2%</b>

We estimate \$182.6 million in total annual excise tax noncompliance for registered taxpayers. This equals 2.2 percent of the total tax liability. As shown in Table 2, use tax holds the highest rate of noncompliance at 19.5 percent. Although sales tax noncompliance comprises a larger dollar value of unreported tax with \$65.5 million, compared to only \$53.5 million of use tax, this amount only represents 1.1 percent of the total sales tax liability. The hazardous substance tax holds the second highest rate of noncompliance at 9.9 percent.

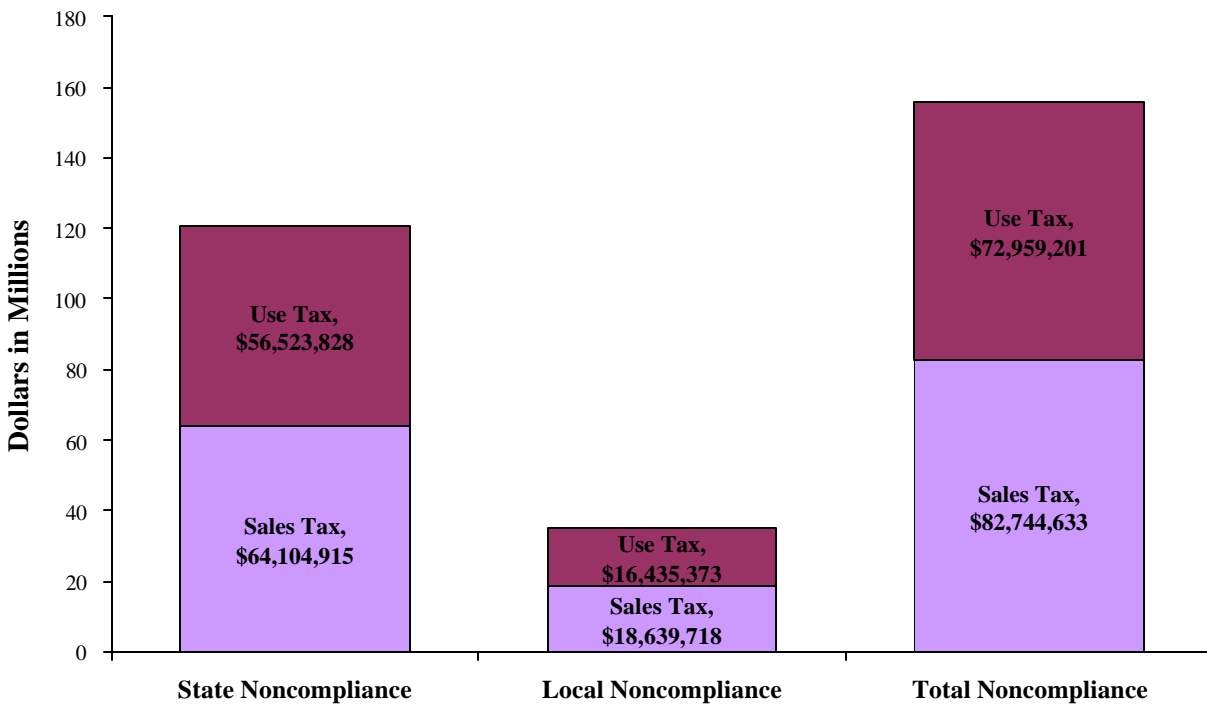
Figure 1 depicts the relative proportions of debit and credit assessments. Projections from the years sampled showed \$256.9 million in annual underreporting of tax and \$74.2 million in overreported tax.

**Figure 1. Estimated Debit and Credit Assessments**



Although this report focuses on state excise taxes, sales and use noncompliance estimates are also subject to local taxation. As seen in Figure 2, we estimate the local share of noncompliance at \$35.1 million per year; \$16.4 million of this represents use tax and the remaining \$18.6 million represents unreported sales tax.

**Figure 2. State and Local Sales and Use Tax Noncompliance**



**NONCOMPLIANCE BY INDUSTRY**

In Table 3 and Figure 3 each industry grouping represents a Standard Industrial Classification (SIC) at the two-digit level. However, we split the service industry into two categories based on SIC range. Service 7000 includes personal, business, computer, hotels/motels, and recreational services. Service 8000 mainly comprises professional services such as health, legal, accounting, engineering, and education. The “other” category includes government services and the agriculture and mining industries.

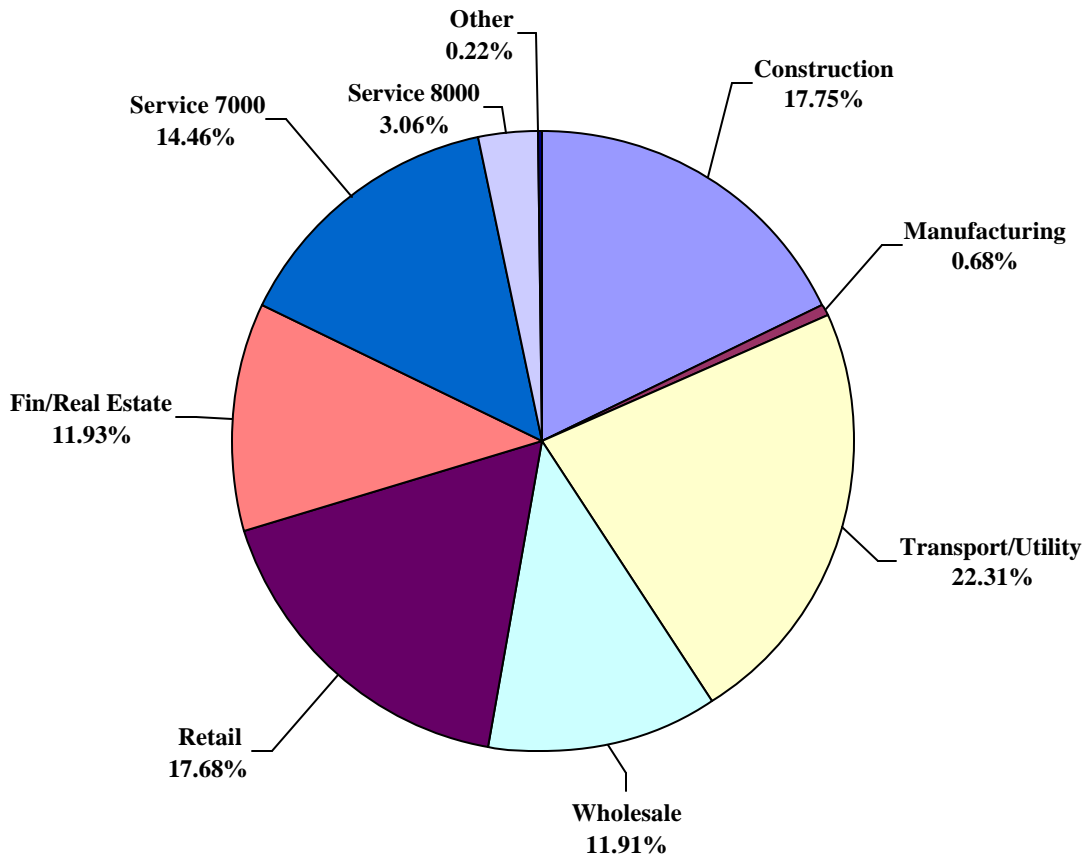
Table 3 details CY 2000's estimated noncompliance by industry and provides each industry's voluntarily reported tax liability. This table also quantifies noncompliance as a percent of the total tax liability. According to the percentages, the finance and real estate industry holds the highest rate of noncompliance with 7.7 percent. However, the transportation and utility industry comprises the largest dollar amount of noncompliance at \$40.7 million. The construction and retailing industries both comprise approximately \$32

million of noncompliance; however, the construction industry's noncompliance represents 3 percent of its total tax liability whereas the retailing industry only represents 1 percent.

**Table 3. Noncompliance by Industry**

<b>Industry</b>	<b>Estimated Noncompliance</b>	<b>Estimated Noncompliance as a Percent of Total Noncompliance</b>	<b>Voluntarily Reported Tax</b>	<b>Noncompliance as a Percent of Total Tax Liability</b>
Construction	\$32,409,022	17.75%	\$1,063,157,050	3.0%
Manufacturing	\$1,247,249	0.68%	\$540,698,589	0.2%
Transport/Utility	\$40,747,491	22.31%	\$701,698,998	5.5%
Wholesale	\$21,749,841	11.91%	\$1,042,222,040	2.0%
Retail	\$32,283,875	17.68%	\$3,205,723,820	1.0%
Fin/Real Estate	\$21,788,889	11.93%	\$261,448,265	7.7%
Service 7000	\$26,403,446	14.46%	\$884,426,834	2.9%
Service 8000	\$5,588,556	3.06%	\$416,690,315	1.3%
Other	\$395,722	0.22%	\$94,004,866	0.4%
<b>Total</b>	<b>\$182,619,091</b>	<b>100%</b>	<b>\$8,210,070,777</b>	<b>2.2%</b>

**Figure 3. Noncompliance by Industry as a Percent of Total Noncompliance for All Industries**



Noncompliance not only means firms who purposefully avoid paying their full tax liability, but also firms who may underpay or overpay their tax liability for a variety of reasons including ignorance, accounting errors, difference of opinion, and/or negligence/fraud. Underreporting figures tend to be of the most interest. Therefore, Tables 4 and 5 provide estimates of noncompliance by tax type and industry based on debit assessments only.

**Table 4. Industry Noncompliance by Tax Type  
Total Industry Noncompliance  
Debit Assessments Only**

<b>Industry</b>	<b>Sales</b>	<b>Use</b>	<b>B&amp;O</b>	<b>Public Utility</b>	<b>Hazardous Substance</b>	<b>Other</b>	<b>Total Non- compliance</b>
Construction	\$26,765,434	\$4,833,173	\$3,855,843	\$14,468	\$0	\$0	\$35,468,918
Manufacturing	\$4,500,735	\$7,429,841	\$2,387,408	\$43,731	\$31,083	\$0	\$14,392,798
Transport/Utility	\$6,695,855	\$13,936,903	\$19,312,135	\$5,651,287	\$2,015,659	\$22,618	\$47,634,457
Wholesale	\$7,512,942	\$4,641,956	\$15,994,508	\$2,344	\$6,325,524	\$20,733	\$34,498,007
Retail	\$17,593,312	\$8,342,461	\$10,706,891	\$567	\$17,379	\$0	\$36,660,610
Fin/Real Estate	\$5,630,017	\$4,210,119	\$21,740,101	\$0	\$0	\$0	\$31,580,237
Service 7000	\$10,605,887	\$14,352,009	\$9,333,682	\$0	\$0	\$7,602	\$34,299,179
Service 8000	\$4,531,891	\$6,734,189	\$9,963,271	\$0	\$398,008	\$0	\$21,627,358
Other	\$65,611	\$408,443	\$217,864	\$9,166	\$0	\$0	\$701,084
<b>All Industries</b>	<b>\$83,901,685</b>	<b>\$64,889,095</b>	<b>\$93,511,702</b>	<b>\$5,721,563</b>	<b>\$8,787,653</b>	<b>\$50,953</b>	<b>\$256,862,649</b>

**Table 5. Industry Noncompliance by Tax Type  
as a Percent of Total Industry Noncompliance  
Debit Assessments Only**

<b>Industry</b>	<b>Sales</b>	<b>Use</b>	<b>B&amp;O</b>	<b>Public Utility</b>	<b>Hazardous Substance</b>	<b>Other</b>	<b>Total Non- compliance</b>
Construction	75.5%	13.6%	10.9%	0.0%	0.0%	0.0%	100%
Manufacturing	31.3%	51.6%	16.6%	0.3%	0.2%	0.0%	100%
Transport/Utility	14.1%	29.3%	40.5%	11.9%	4.2%	0.0%	100%
Wholesale	21.8%	13.5%	46.4%	0.0%	18.3%	0.1%	100%
Retail	48.0%	22.8%	29.2%	0.0%	0.0%	0.0%	100%
Fin/Real Estate	17.8%	13.3%	68.8%	0.0%	0.0%	0.0%	100%
Service 7000	30.9%	41.8%	27.2%	0.0%	0.0%	0.0%	100%
Service 8000	21.0%	31.1%	46.1%	0.0%	1.8%	0.0%	100%
Other	9.4%	58.3%	31.1%	1.3%	0.0%	0.0%	100%
<b>All Industries</b>	<b>32.7%</b>	<b>25.3%</b>	<b>36.4%</b>	<b>2.2%</b>	<b>3.4%</b>	<b>0.0%</b>	<b>100%</b>

Sales tax noncompliance occurs most frequently for construction at 75.5 percent (\$26.8 million) and retailing at 48 percent (\$17.6 million). Use tax constitutes the majority of tax not reported for manufacturing and other firms. The finance and real estate industry comprises the largest percent of B&O tax noncompliance.

## NONCOMPLIANCE BY SIZE OF FIRM

**Table 6. Noncompliance by Size of Firm**

Annual Gross Business Income (\$ in Thousands)	Estimated Noncompliance	Estimated Noncompliance as a Percent of Total	Voluntarily Reported Tax	Noncompliance as a Percent of Total Tax Liability	Average Noncompliance Per Firm
<\$100	\$4,877,482	2.7%	\$154,129,241	3.1%	\$154
\$100-500	\$55,129,205	30.2%	\$554,266,656	9.1%	\$708
\$500-1,000	\$3,652,878	2.0%	\$450,559,791	0.8%	\$373
\$1,000-5,000	\$5,547,232	3.0%	\$1,297,708,198	0.4%	\$608
\$5,000-10,000	\$2,467,076	1.4%	\$641,831,942	0.4%	\$4,354
\$10,000-50,000	\$25,466,974	13.9%	\$1,785,040,020	1.4%	\$13,494
>\$50,000	\$85,478,243	46.8%	\$3,326,534,929	2.5%	\$69,469
<b>Total</b>	<b>\$182,619,091</b>	<b>100%</b>	<b>\$8,210,070,777</b>	<b>2.2%</b>	<b>\$1,382</b>

Table 6 and Figure 4 show noncompliance by size of firm. Table 6 includes estimated noncompliance, voluntarily reported tax liability, and the average noncompliance amount per firm by category. Figure 4 depicts noncompliance estimates based on size of firm as a percent of the total noncompliance for all firms. Size is measured by annual gross business income (GBI). Although firms with over \$50 million constitute the largest percent of total noncompliance (46.8 percent), the noncompliance estimate for these firms represents only 2.5 percent of the total tax liability. While smaller firms in the \$100,000 to \$500,000 gross business income range comprise nearly 30.2 percent of the total noncompliance, their noncompliance estimate represents 9.1 percent of the total tax liability. Firms with \$500,000 to \$10 million in gross business income hold much lower rates of noncompliance than the smallest and largest firms. However, when comparing the average noncompliance per firm, the dollar amount generally increases as the firm size increases.

**Figure 4. Noncompliance by Size of Firm as a Percent of Total Noncompliance for All Firms Size Based on Annual Gross Business Income**

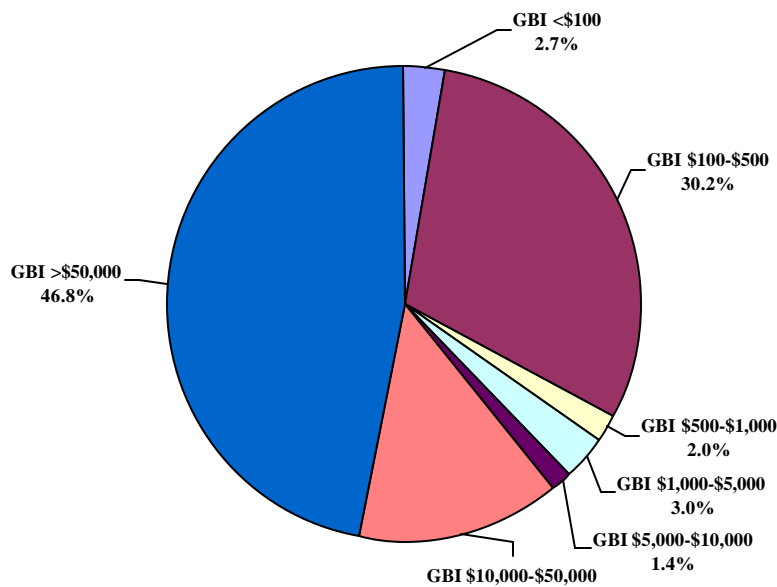




Table 7 shows noncompliance by size and tax type and Table 8 shows noncompliance by size and tax type as a percent of the total tax type noncompliance. Firms with over \$50 million in gross income comprise the largest amount of noncompliance in each tax category except for sales tax. Those with a gross income between \$100,000 and \$500,000 hold the largest portion of sales tax noncompliance (52.3 percent of the total). The public utility tax possesses the largest overpayment, with \$3.5 million overpaid by firms with a gross income between \$500,000 and \$1 million. The “other” tax is the only tax to receive a net overpayment. The most underreporting occurred in B&O tax for firms earning over \$50 million in gross income; they underreported \$33.8 million.

**Table 7. Noncompliance by Tax Type and Size of Firm**

<b>Annual Gross Business Income (\$ in Thousands)</b>	<b>Sales</b>	<b>Use</b>	<b>B&amp;O</b>	<b>Public Utility</b>	<b>Hazardous Substance</b>	<b>Other</b>	<b>Total Non-compliance</b>
<\$100	\$3,204,847	\$850,396	\$712,035	\$110,204	\$0	\$0	\$4,877,482
\$100-500	\$33,540,501	\$8,081,598	\$11,148,327	\$344,249	\$2,014,530	\$0	\$55,129,205
\$500-1,000	\$4,116,185	\$1,654,090	\$1,385,123	(\$3,502,519)	\$0	\$0	\$3,652,878
\$1,000-5,000	\$2,263,771	\$2,766,635	\$860,979	(\$415,440)	\$70,680	\$608	\$5,547,232
\$5,000-10,000	\$401,462	\$1,217,118	\$848,057	(\$20,937)	\$0	\$21,376	\$2,467,076
\$10,000-50,000	\$10,111,163	\$9,613,123	\$5,794,824	(\$302,975)	\$283,574	(\$32,736)	\$25,466,974
>\$50,000	\$10,466,986	\$32,340,868	\$33,754,419	\$4,534,417	\$4,527,950	(\$146,396)	\$85,478,243
<b>Total</b>	<b>\$64,104,915</b>	<b>\$56,523,828</b>	<b>\$54,503,763</b>	<b>\$746,999</b>	<b>\$6,896,733</b>	<b>(\$157,148)</b>	<b>\$182,619,091</b>

**Table 8. Noncompliance by Tax Type and Size as a Percent of the Total Tax Type Noncompliance**

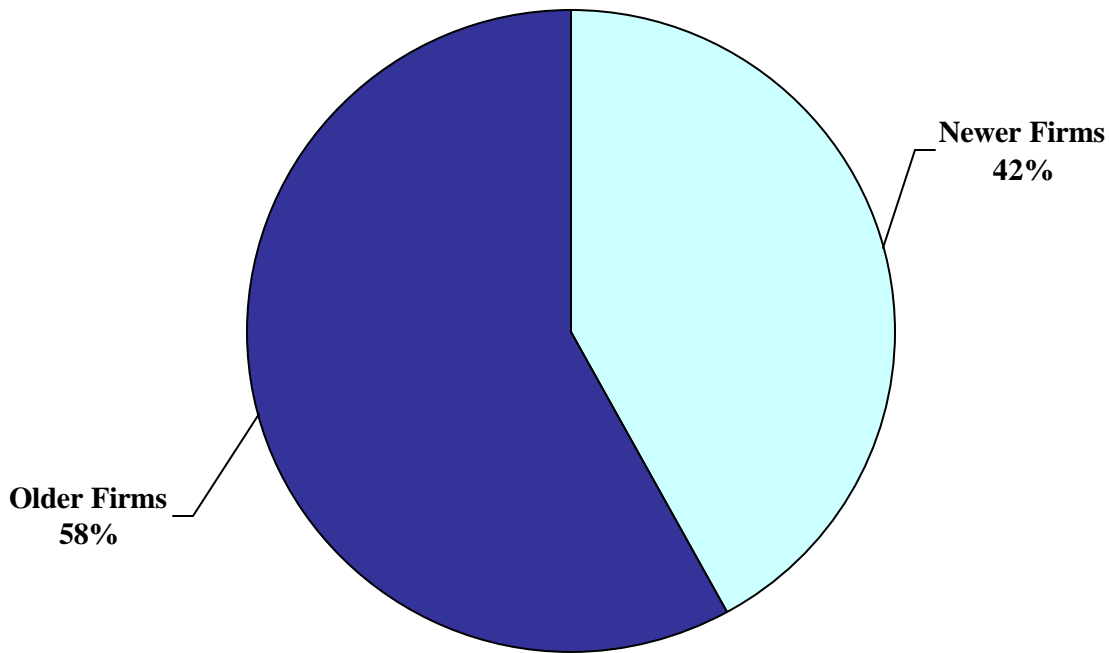
<b>Annual Gross Business Income (\$ in Thousands)</b>	<b>Sales</b>	<b>Use</b>	<b>B&amp;O</b>	<b>Public Utility</b>	<b>Hazardous Substance</b>	<b>Other</b>
<\$100	5.0%	1.5%	1.3%	14.8%	0.0%	0.0%
\$100-500	52.3%	14.3%	20.5%	46.1%	29.2%	0.0%
\$500-1,000	6.4%	2.9%	2.5%	(468.9%)	0.0%	0.0%
\$1,000-5,000	3.5%	4.9%	1.6%	(55.6%)	1.0%	0.4%
\$5,000-10,000	0.6%	2.2%	1.6%	(2.8%)	0.0%	13.6%
\$10,000-50,000	15.8%	17.0%	10.6%	(40.6%)	4.1%	(20.8%)
>\$50,000	16.3%	57.2%	61.9%	607.0%	65.7%	(93.2%)
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

## NONCOMPLIANCE BY AGE OF FIRM

We determined a correlation between a firm's age and its size. We found that new firms tend to be small; and while older firms may also be small, large firms have usually been established for a number of years. For the purposes of this study, we defined “newer firms” as firms who opened less than two years before the

beginning of the sample audit period. Although newer firms accounted for 42 percent of total noncompliance among registered taxpayers (Figure 5), the ratio of credit assessments to debit assessments for older firms is much higher than for newer firms. As a result, the net of the credit and debit assessments make older firms appear to account for less noncompliance than they actually do. When comparing only debit assessments, older firms account for 64 percent of the total debit assessments while newer firms only account for 36 percent.

**Figure 5. Net Noncompliance by Age of Firm**



In CY 2000, newer firms underreported \$76.7 million, which equates to 6.7 percent of their total tax liability. Although older firms underreported a larger dollar quantity (\$106 million), this amounted to only 1.5 percent of their total tax liability.

**Table 9. Noncompliance by Age of Firm**

	<b>Estimated Noncompliance</b>	<b>Voluntarily Reported Tax</b>	<b>Noncompliance as a Percent of Total Tax Liability</b>
Newer Firms	\$76,661,815	\$1,066,225,796	6.7%
Older Firms	\$105,957,276	\$7,143,844,981	1.5%
<b>All Firms</b>	<b>\$182,619,091</b>	<b>\$8,210,070,777</b>	<b>2.2%</b>

## CONCLUSIONS

For this study we estimated \$182.6 million in total annual excise tax noncompliance for registered taxpayers, which equates to 2.2 percent of the total tax liability. In the 2003 compliance study we estimated 2.5 percent noncompliance. This suggests that the overall noncompliance has slightly declined.

In the previous study, use tax held the highest rate of noncompliance (27.9 percent) and the largest dollar amount of noncompliance (\$79.1 million), with sales tax noncompliance closely following at \$65.5 million. However, in the 2005 compliance study, sales tax became the largest dollar amount of noncompliance (\$64.1 million), while use tax remained the leader in the rate of noncompliance (19.5 percent, compared to the sales tax rate of 1.1 percent).

Both the debit and credit assessments decreased in the 2005 compliance study. In the 2003 study, debit assessments totaled \$263.9 million and credit assessments totaled \$80.3 million, whereas in the 2005 study, debit assessments equaled \$256.9 million and credit assessments equaled \$74.2 million. The overall decrease in both credit and debit assessments may be linked to the increased taxpayer education efforts put forth by the Department of Revenue's Taxpayer Services Division and the increased use of the Department's E-file system. Both activities help to decrease reporting errors.

Between the 2003 and 2005 studies, the transportation and utility industry continued to have the largest dollar noncompliance. However, the transportation and utility industry no longer holds the highest rate of noncompliance. The highest rate of noncompliance now belongs to the finance and real estate industry whose overall noncompliance is 7.7 percent (an increase of total noncompliance from \$5.8 million to \$21.8 million).

As in the 2003 study, the 2005 study shows that firms with a gross income greater than \$50 million constitute the largest portion of total noncompliance for all firms. Similarly, firms with a gross income between \$100,000 and \$500,000 hold the highest rate of noncompliance (7.8 percent in the 2003 study compared to 9.1 percent in the 2005 study). Also like the 2003 study, the average noncompliance per firm increases as the firm size increases.

Like the previous study, the newer firms in the 2005 study hold a higher rate of underreporting than the older firms. Newer firms have a noncompliance rate of 6.7 percent whereas older firms underreport 1.5 percent.