

# **UNREGISTERED BUSINESS STUDY**

**Joint Report of the  
Washington State Department of Revenue  
Washington State Department of Labor and Industries  
and the  
Washington State Employment Security Department**

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# Unregistered Business Study

## **Abstract**

In 2004 there was an estimated \$274 million in Washington State taxes owed by businesses that registered with the Internal Revenue Service (IRS) but did not register with the Washington State Departments of Revenue (DOR), Labor and Industries (L&I), and Employment Security (ESD). This represents 99,000 unregistered accounts and represents 2.1 percent of taxes collected from registered taxpayers.

Preliminary estimates show an additional \$183 million in 2001 owed by Washington businesses that did not file with either the Washington State DOR, L&I, and ESD or the IRS. This represents an additional 65,000 unregistered accounts and represents 1.4 percent of taxes collected from registered taxpayers.

Estimates for businesses registered with the IRS but not with the Washington State Department of Revenue were made by matching IRS data from 1099s, Schedule C, and business tax returns with DOR taxpayer data. Estimates for businesses not registered with the IRS were estimated on the basis of a 2005 IRS study.

These estimates are compared with an additional \$251 million in estimated underreporting by registered taxpayers in 2004.

Estimates cover only business activity that is legal in Washington State. Criminal and barter activity is not included in the estimates.

## **Introduction**

This study measures the amount of taxable activity in Washington State by businesses that are not registered with the DOR, L&I, and ESD. This study is intended to complement the other detection measures in use by the agencies. Since 1990 the DOR has conducted a study of noncompliance by registered taxpayers. L&I and ESD have more recently implemented parallel studies within their own agencies.

The study was conducted in order to assist management within the three agencies in making decisions about their compliance efforts. By knowing information about the size, character, and location of unregistered businesses, the agencies can target compliance and education efforts and measure their effectiveness.

## **Study Objectives**

- Estimate total noncompliance by unregistered businesses
- Estimate the number of unregistered businesses
- Evaluate the percent of unregistered businesses identified by current compliance efforts
- Estimate unregistered business activity by industry
- Estimate unregistered business activity by geographic area
- Establish a baseline for future periodic reports

This study is a joint project between the Washington State Departments of Revenue, Labor and Industries, and Employment Security. All three agencies plan to use the study to target their compliance and education efforts.

## **Scope**

The study focuses on legal taxable business activity in Washington State generated by unregistered businesses. It does not cover criminal activity or the barter economy.

## **Results**

In 2004 there was an estimated \$274 million in Washington State taxes owed by businesses that registered with the IRS but did not register with DOR, L&I, or ESD. This represents 99,000 unregistered accounts and represents 2.1 percent of taxes collected from registered businesses.

Preliminary estimates show an additional \$183 million owed by businesses that did not file with the IRS. Assuming that the dollar amount per taxpayer is about the same for this group of businesses as for those that registered with the IRS but not with DOR, L&I, or ESD, the \$183 million represents tax due from 65,000 businesses. This is 1.4 percent of tax collected from registered taxpayers. (Note that details about characteristics of the businesses that are not registered with the IRS are not available at this time. It is hoped that more detailed data from the IRS will be forthcoming.) This estimate is stated separately from the \$274 million estimate because there is a wider margin of error in this estimate.

## **Detail About Businesses Registered With the IRS But Not With Washington State DOR**

There are four sets of taxpayers that were analyzed:

- Out-of-state businesses that hire Washingtonians on a contract basis
  - These are primarily firms that may not be aware that hiring an independent contractor creates nexus for Washington State's gross receipts tax.
- Washington-based contractors who received IRS form 1099:
  - These are individuals who did not file an IRS 1040 with an attached business form Schedule C yet received substantial 1099 miscellaneous income.
- Washington corporations and other businesses that filed with the IRS:
  - These are corporations, partnerships, and trusts that are based in Washington.
- Washington-based sole proprietors:
  - These are individual 1040 filers with Schedule C business income.

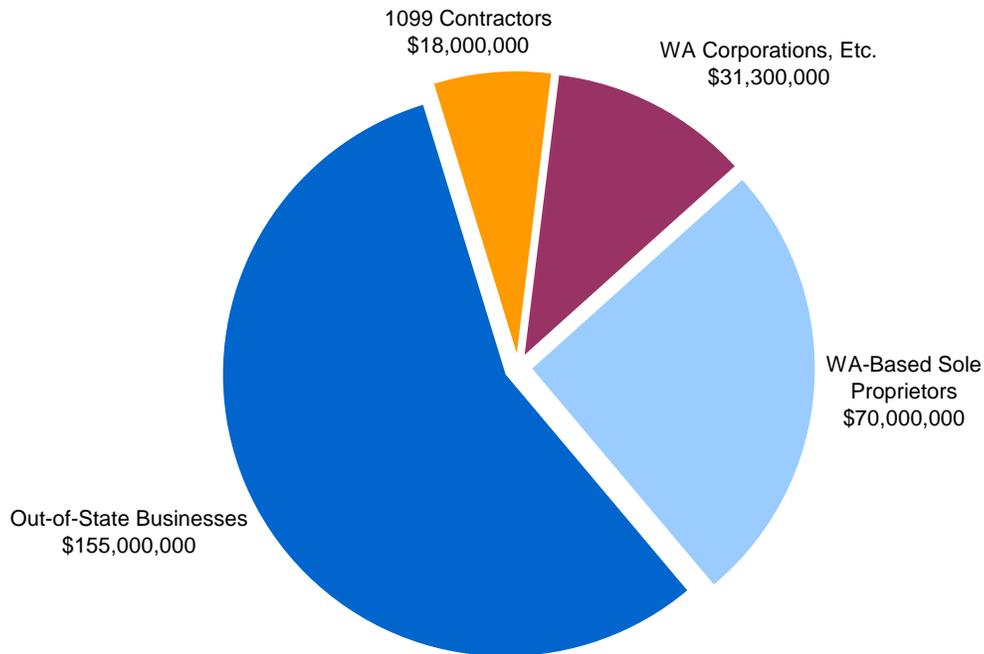
Note that the IRS data for Washington-based individuals with Schedule C data, for Washington-based 1099 payees, and for out-of-state 1099 payers may include individuals who performed work outside of Washington. This would not be considered taxable activity. To somewhat offset this possible over-counting bias, some out-of-state individuals may be doing work inside Washington that is not counted because they do not live in Washington State. It is presumed that these amounts are relatively small compared to the other types of activity listed above.

### **Noncompliance by Type of Business**

The following charts show a breakdown of the four groups for tax due, number of filers, and average tax due. Note that the largest dollar amounts and the largest average taxes due are for the out-of-state businesses that hire Washingtonians on a contract basis. However, in terms of number of businesses, Washington individuals with business income are the largest group. The out-of-state firms have the largest average tax due, while the individuals with business income have the smallest average dollar amount. L&I and ESD tax liabilities come only from in-state employers which include corporations and sole proprietors.

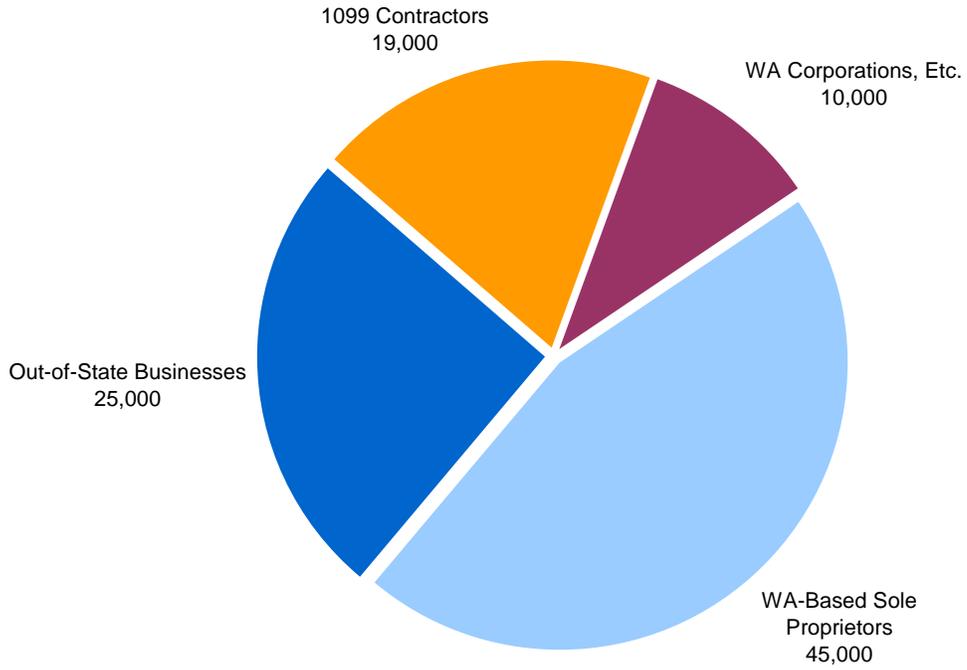
#### **For All Three Agencies**

**Estimated Tax Due from Unregistered Accounts  
Three Agencies (\$274 Million)**

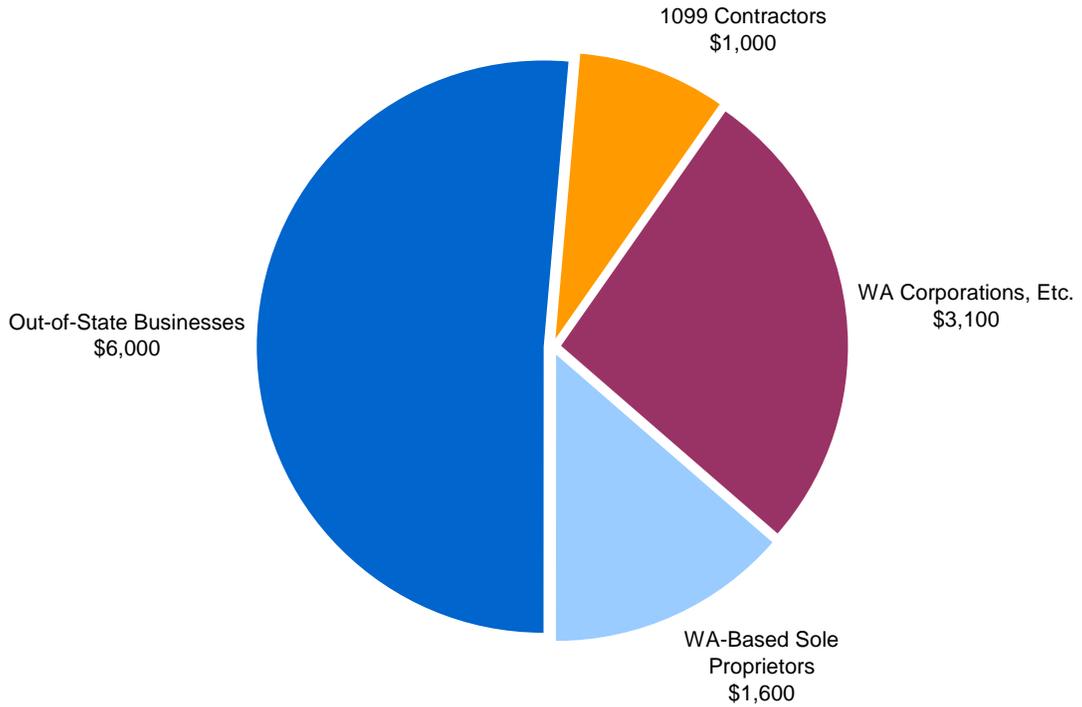


Data used for this study and to create these charts comes from the databases of the IRS and the Washington State DOR, L&I, and ESD.

**Estimated Total Number of Unregistered Accounts  
Three Agencies (99,000)**

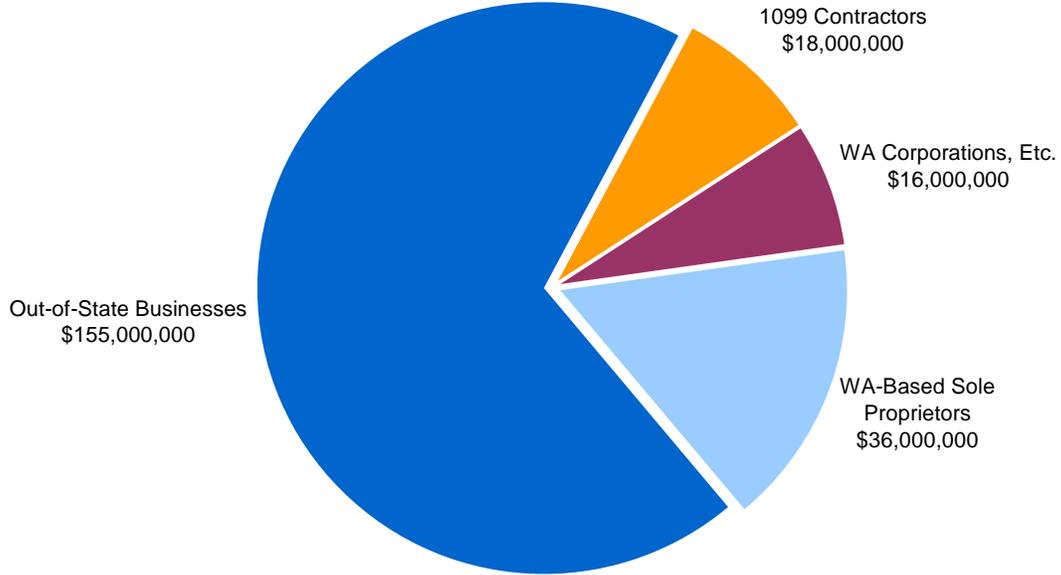


**Estimated Average Dollars Due Per Unregistered Account  
Three Agencies**

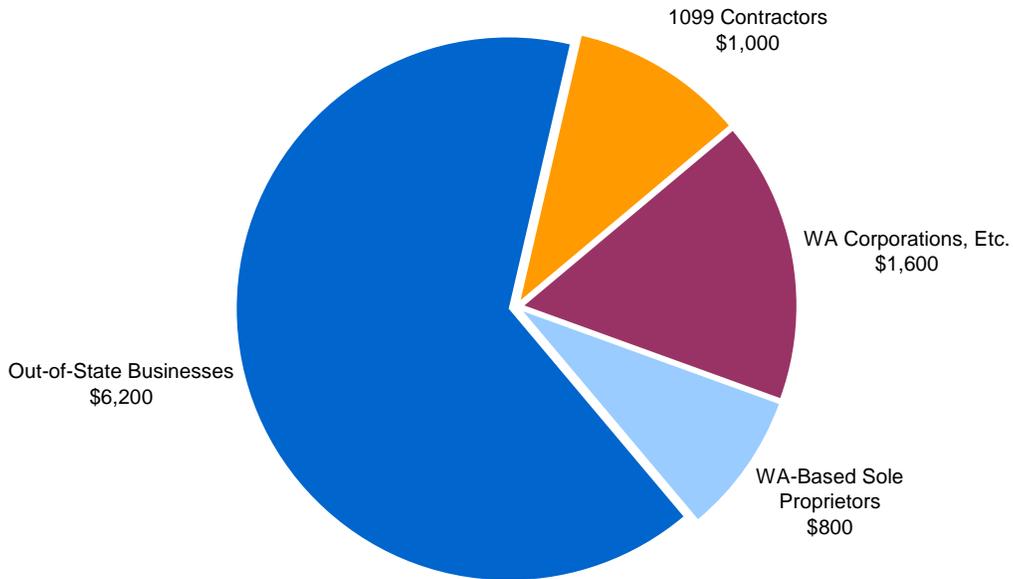


Data used for this study and to create these charts comes from the databases of the IRS and the Washington State DOR, L&I, and ESD.

**Department of Revenue**  
**Estimated Tax Due From Unregistered Accounts**  
**Department of Revenue (\$225 Million)**

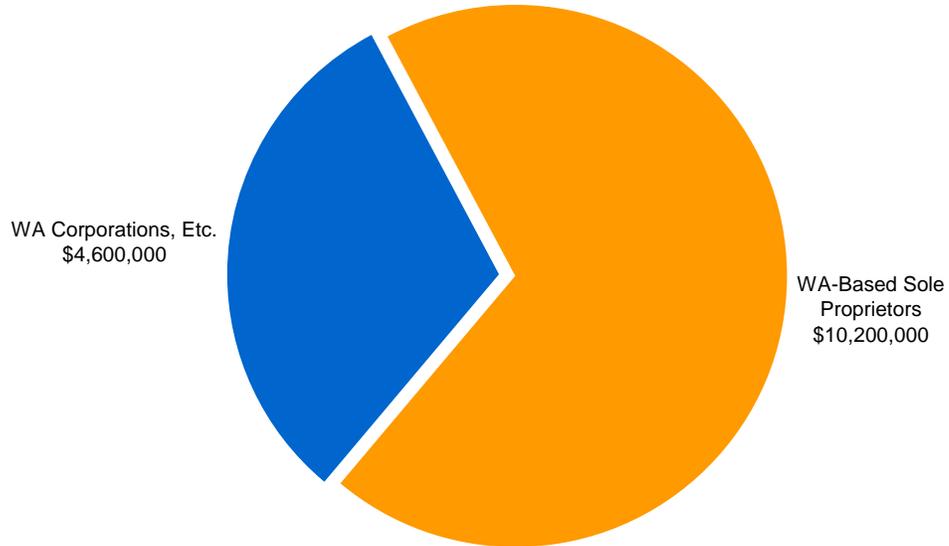


**Estimated Average Dollars Due Per Unregistered Account**  
**Department of Revenue**

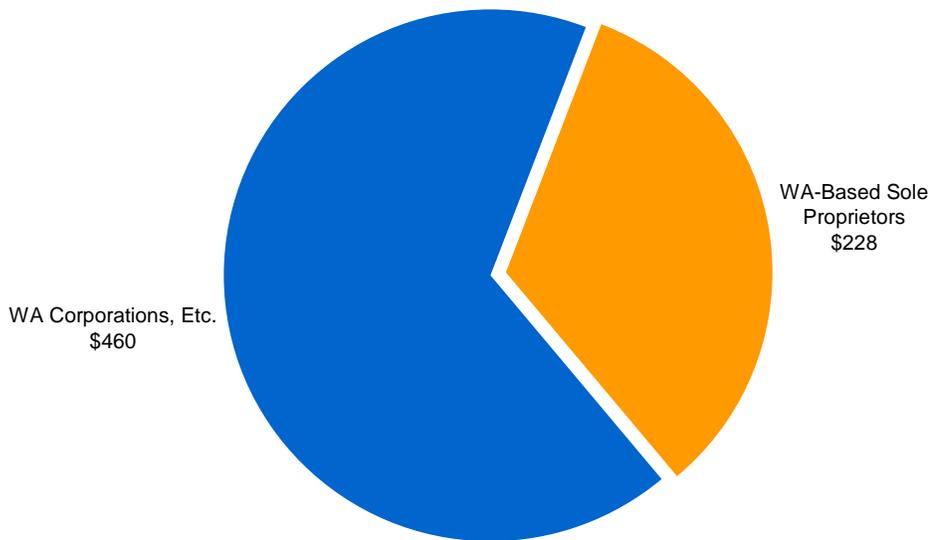


Data used for this study and to create these charts comes from the databases of the IRS and the Washington State DOR, L&I, and ESD.

**Employment Security Department  
Estimated Tax Due From Unregistered Accounts  
Employment Security Department (\$14.8 Million)**



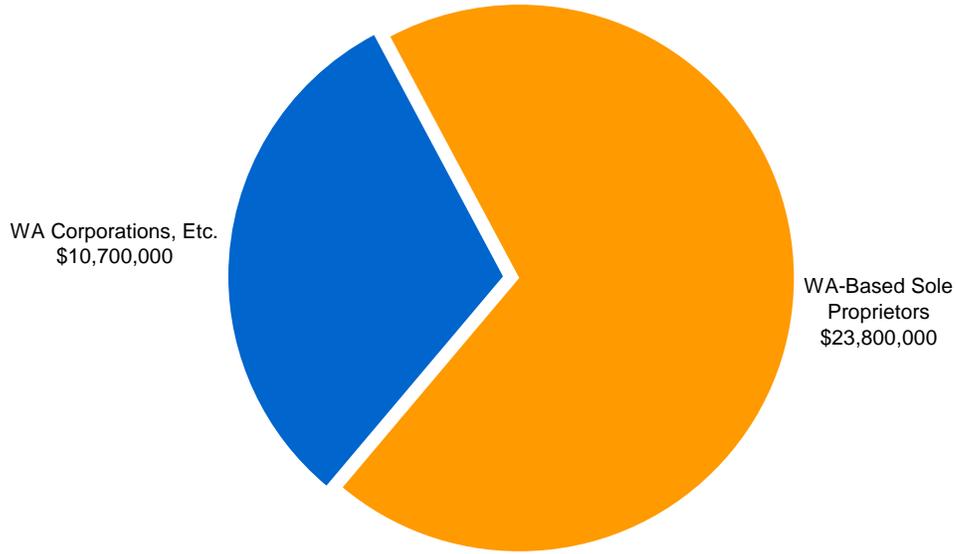
**Estimated Average Dollars Due Per Unregistered Account  
Employment Security Department**



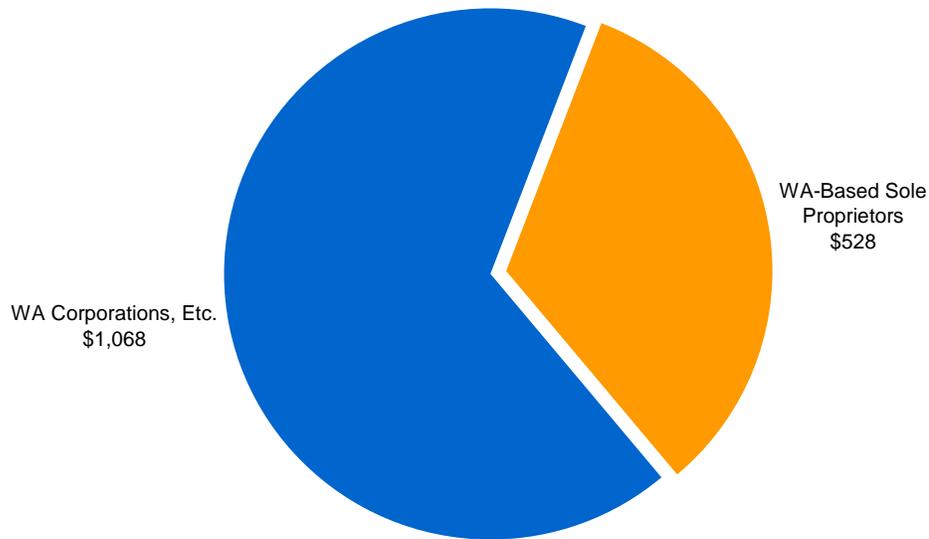
Data used for this study and to create these charts comes from the databases of the IRS and the Washington State DOR, L&I, and ESD.

**Department of Labor and Industries**

**Estimated Tax Due From Unregistered Accounts  
Labor and Industries (\$34.5 Million)**



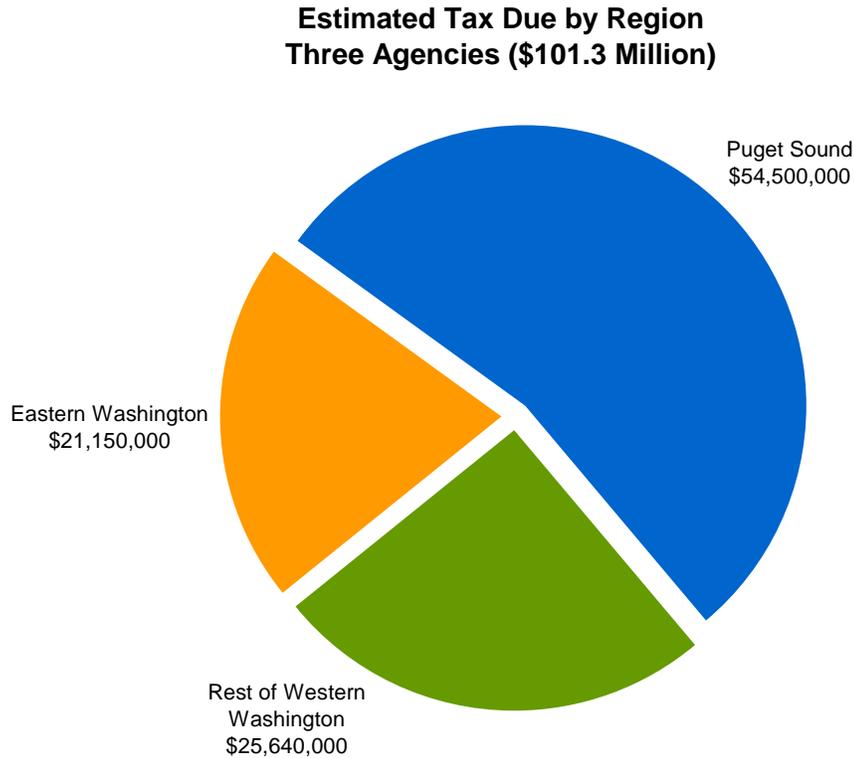
**Estimated Average Dollars Due Per Unregistered Account  
Labor and Industries**



Data used for this study and to create these charts comes from the databases of the IRS and the Washington State DOR, L&I, and ESD.

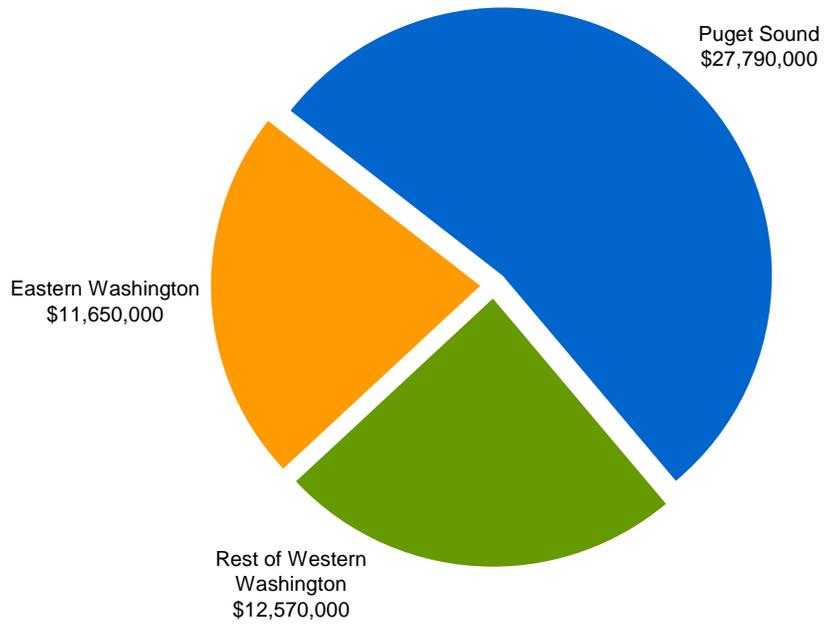
**Noncompliance by Geographic Region**

The following chart shows unregistered business activity by geographic region for filers who had North American Industry Classification System (NAICS) indicators which represent Washington corporate and Washington-based sole proprietors only. The Washington corporate and Washington-based sole proprietors' tax liability represents an estimated \$101.3 million of the estimated \$274 million tax liability of unregistered businesses that registered with the IRS. Note that most of the unregistered business activity is in the Puget Sound region.

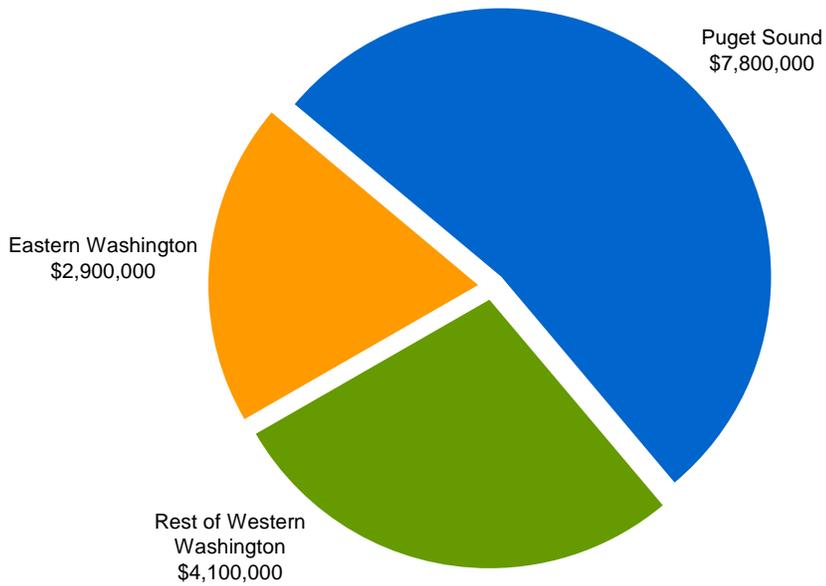


Data used for this study and to create these charts comes from the databases of the IRS and the Washington State DOR, L&I, and ESD.

**Estimated Excise Tax Due by Region  
Department of Revenue (\$52.0 Million)**

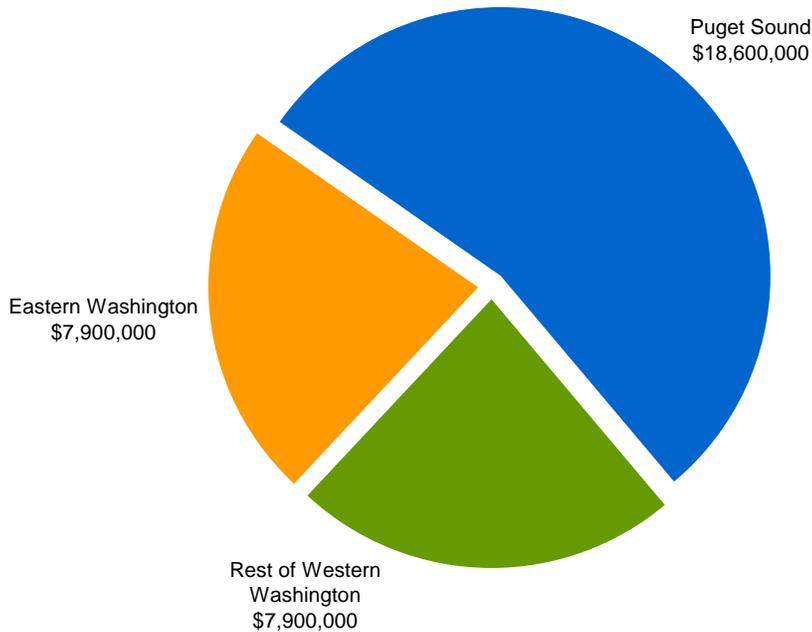


**Estimated Tax Due by Region  
Employment Security Department (\$14.8 Million)**



Data used for this study and to create these charts comes from the databases of the IRS and the Washington State DOR, L&I, and ESD.

**Estimated Tax Due by Region  
Labor and Industries (\$34.4 Million)**



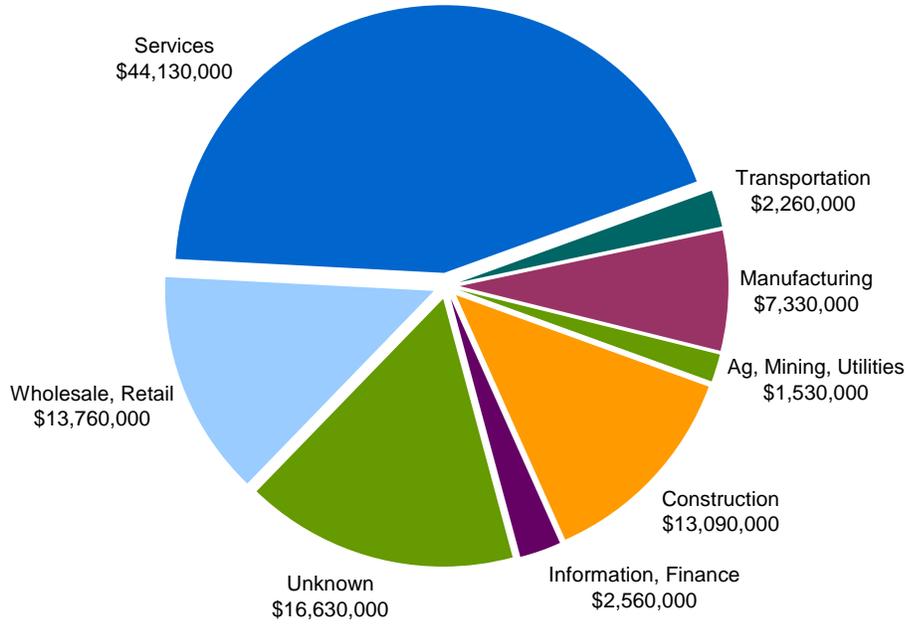
**Noncompliance by Industry and by Geographic Area**

The charts on the following pages break out the dollar amount of noncompliance by industry for filers who had NAICS indicators (Washington corporations and individuals with Schedule C income only). Note that many of the corporations and individuals with Schedule C income did not have NAICS indicators; “unknown” (i.e. the category of businesses without a NAICS indicator) is the second largest category. Services is the largest category, with estimated tax liability of \$44,130,000. The next largest industry is retail and wholesale, with estimated tax liability of \$13,760,000. For DOR taxes, the construction industry has a small impact. For ESD and L&I, the impact of the construction industry is more significant.

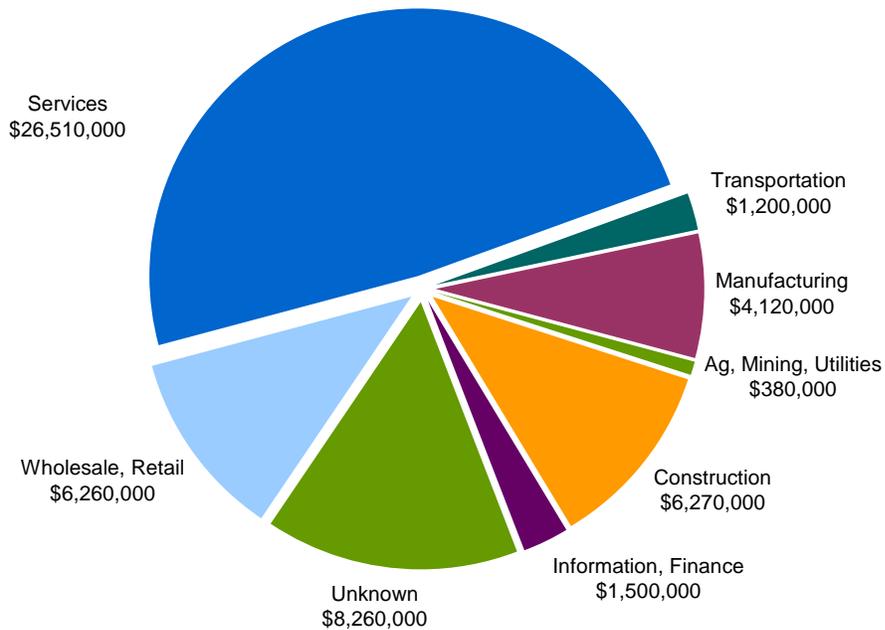
The first set of four tables shows the industry detail for the geographic areas for all three agencies combined. The following sets show the industry detail for geographic area for each agency.

## All Three Agencies

### Estimated Tax Due by Industry to the Three Agencies Entire State (\$101.3 Million)

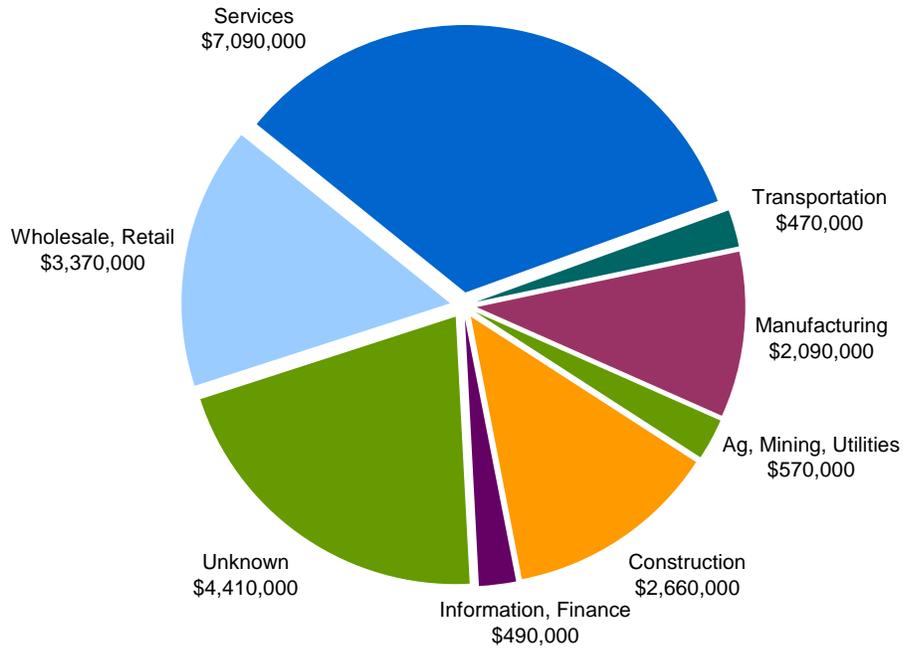


### Estimated Tax Due by Industry to the Three Agencies Puget Sound (\$54.5 Million)

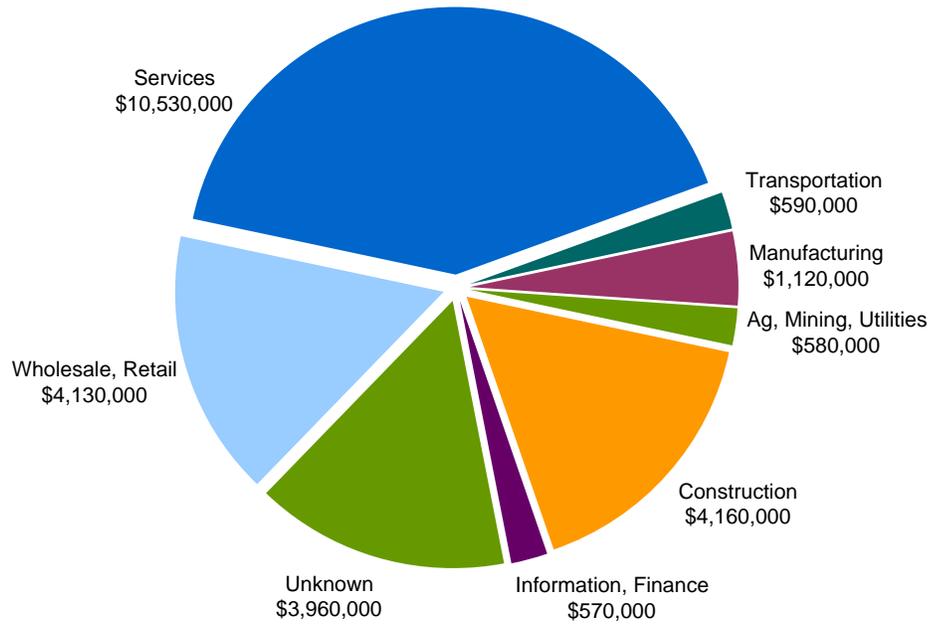


Data used for this study and to create these charts comes from the databases of the IRS and the Washington State DOR, L&I, and ESD.

**Estimated Tax Due by Region to the Three Agencies  
Eastern Washington (\$21.2 Million)**



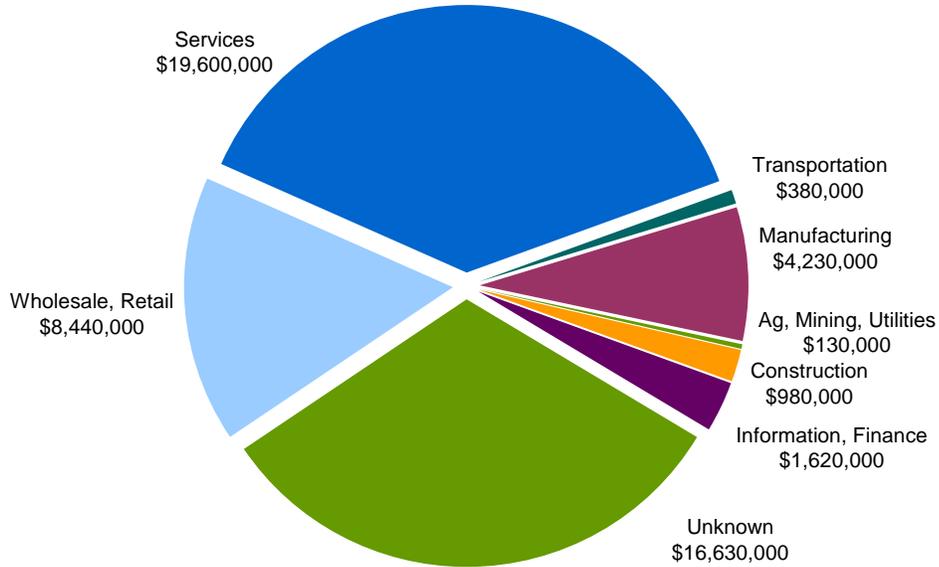
**Estimated Tax Due by Region to the Three Agencies  
Rest of Western Washington (\$25.6 Million)**



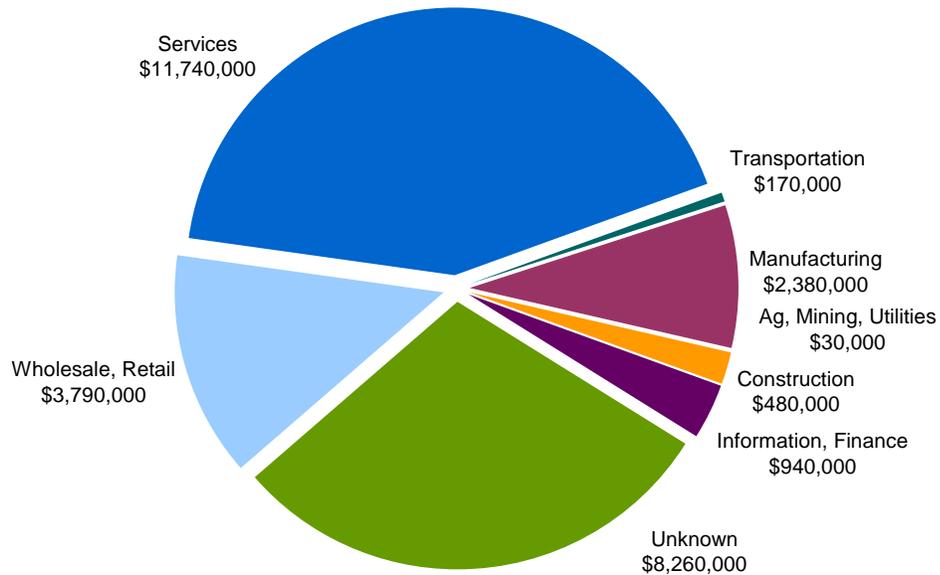
Data used for this study and to create these charts comes from the databases of the IRS and the Washington State DOR, L&I, and ESD.

## Department of Revenue

### Estimated Tax Due to Department of Revenue by Industry Entire State (\$52.0 Million)



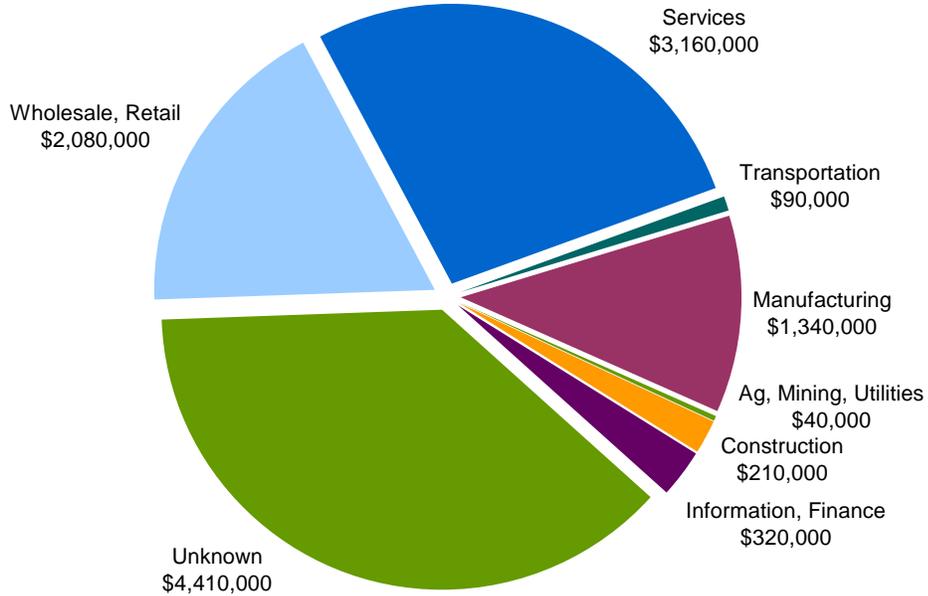
### Estimated Tax Due to Department of Revenue by Industry Puget Sound (\$27.8 Million)



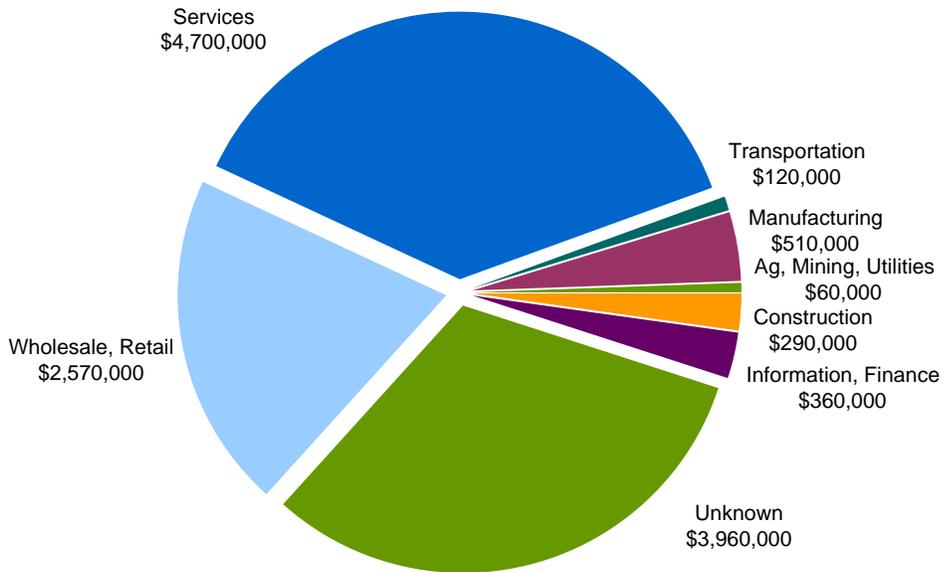
Data used for this study and to create these charts comes from the databases of the IRS and the Washington State DOR, L&I, and ESD.

## Department of Revenue

### Estimated Tax Due to Department of Revenue by Industry Eastern Washington (\$11.7 Million)



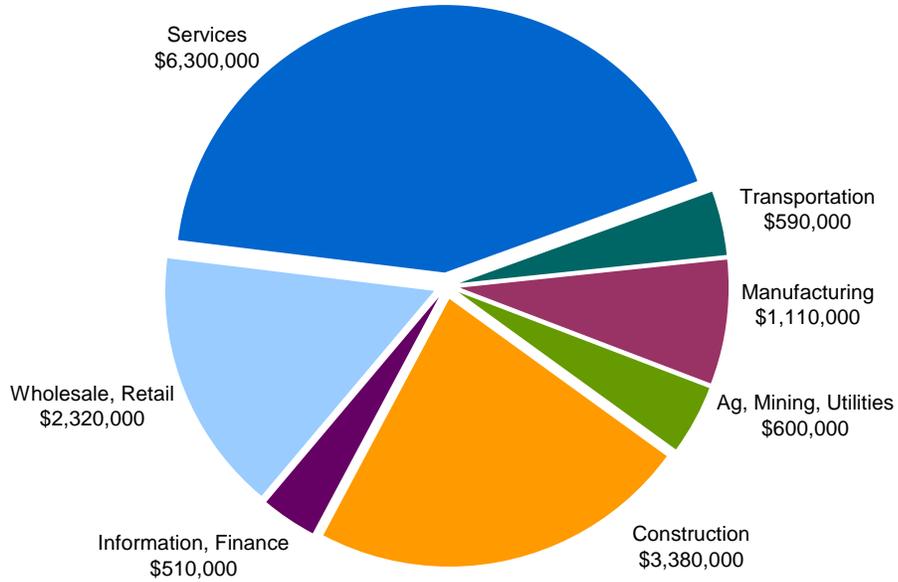
### Estimated Tax Due to Department of Revenue by Industry Rest of Western Washington (\$12.6 Million)



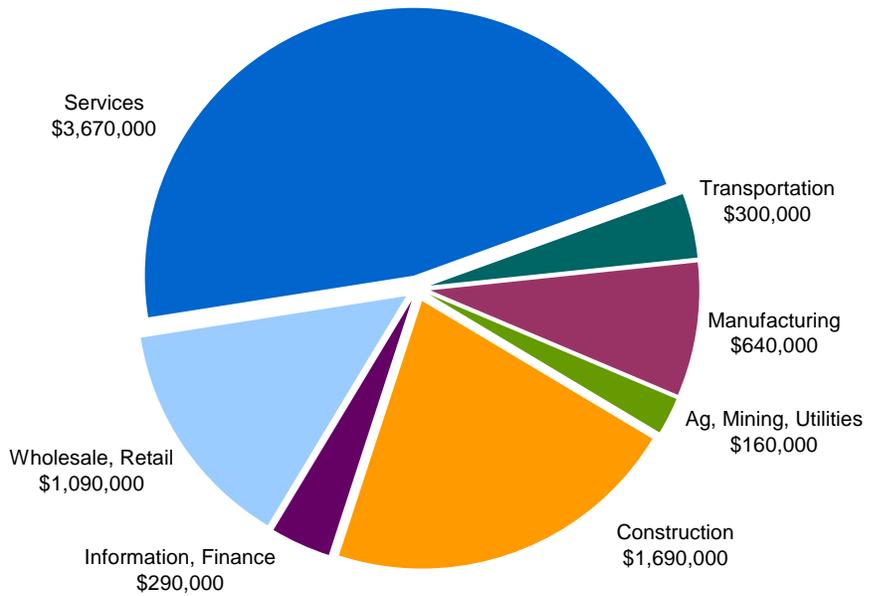
Data used for this study and to create these charts comes from the databases of the IRS and the Washington State DOR, L&I, and ESD.

## Employment Security Department

### Estimated Tax Due to Employment Security Department by Industry Entire State (\$14.8 Million)

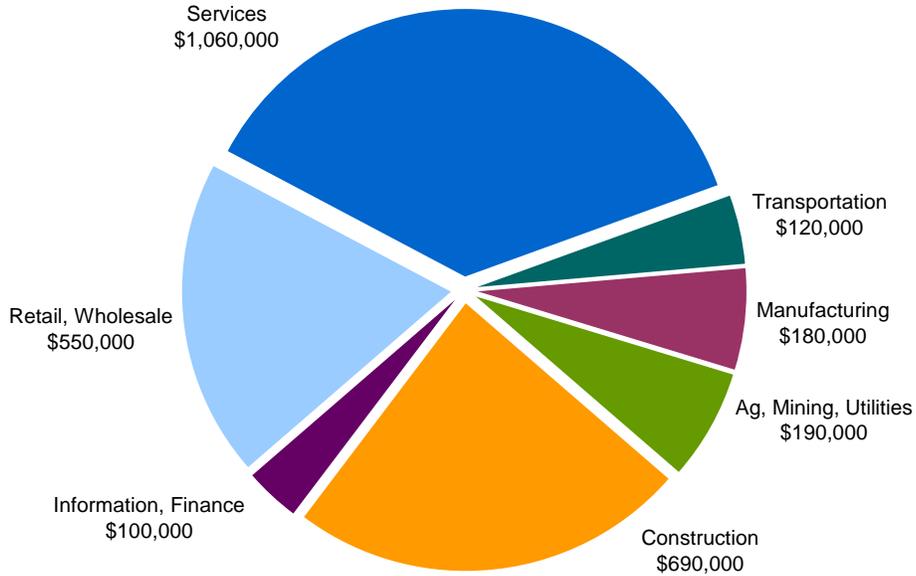


### Estimated Tax Due to Employment Security Department by Industry Puget Sound (\$7.8 Million)

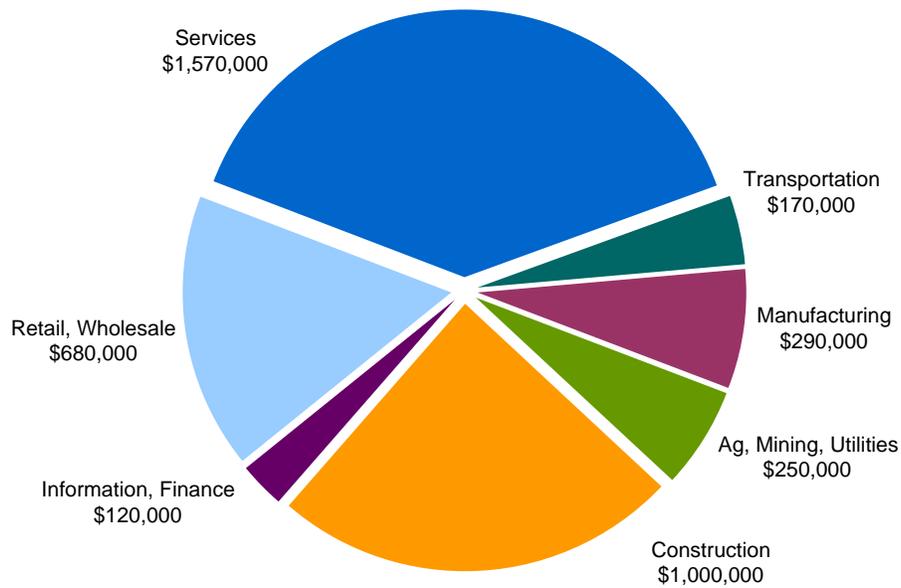


## Employment Security Department

### Estimated Tax Due to Employment Security Department by Industry Eastern Washington (\$2.9 Million)

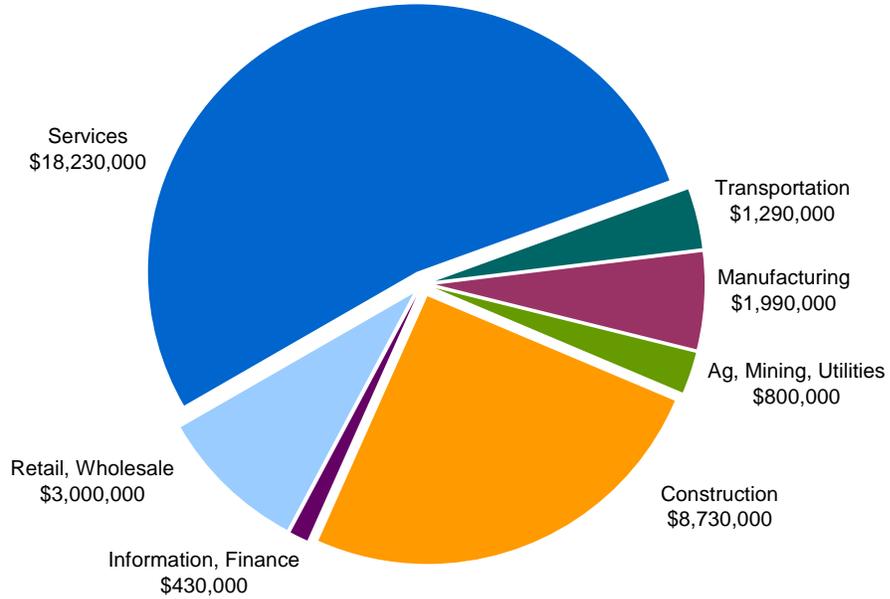


### Estimated Tax Due to Department of Revenue by Industry Rest of Western Washington (\$4.1 Million)

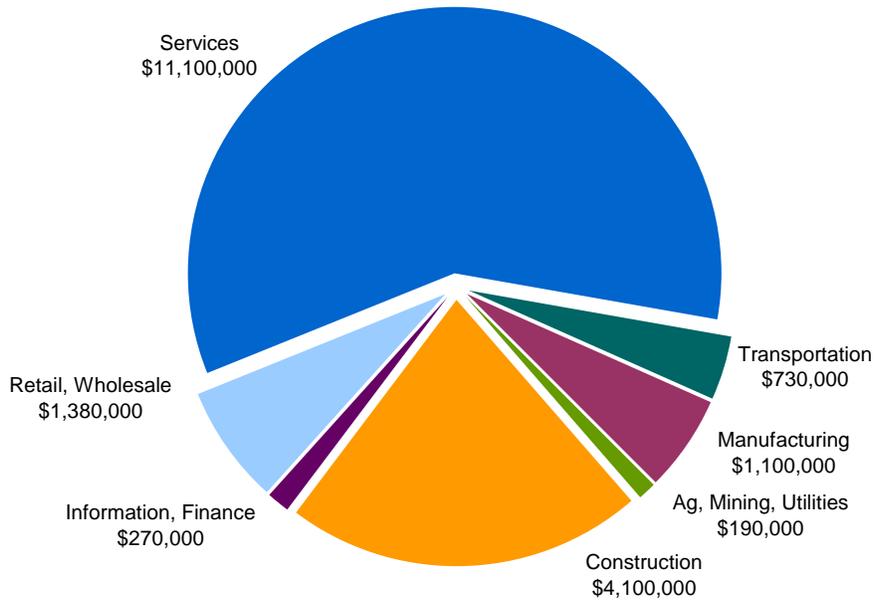


## Labor and Industries

**Estimated Tax Due to Labor & Industries by Industry  
Entire State (\$34.5 Million)**



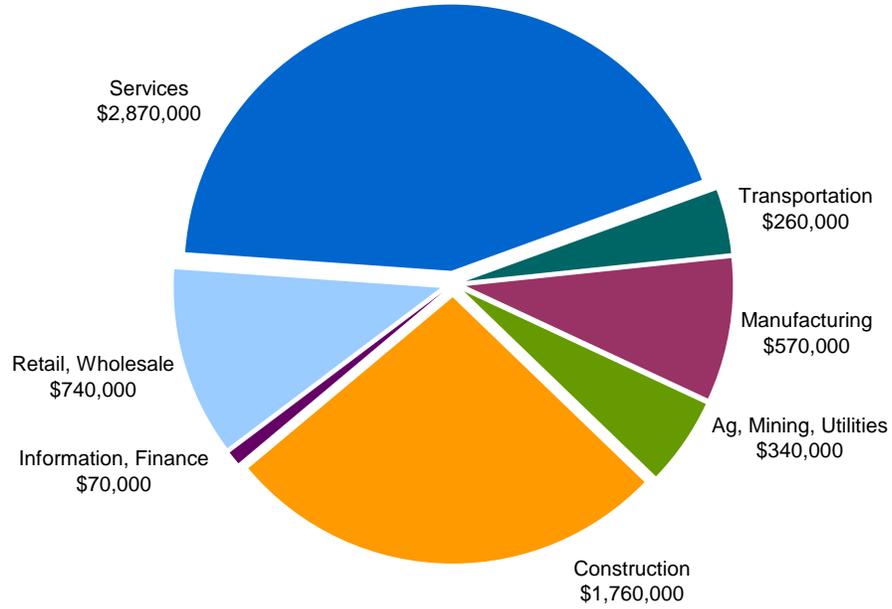
**Estimated Tax Due to Labor & Industries by Industry  
Puget Sound (\$18.9 Million)**



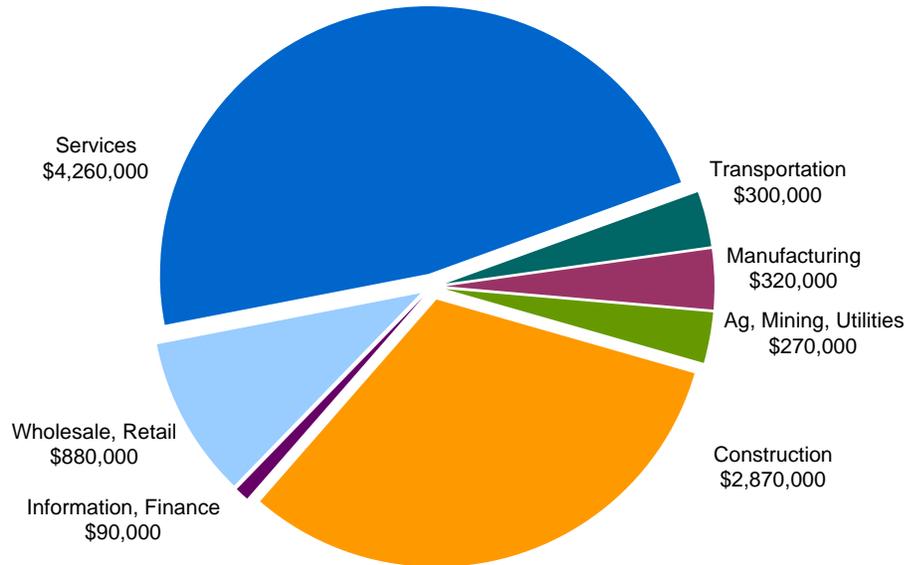
Data used for this study and to create these charts comes from the databases of the IRS and the Washington State DOR, L&I, and ESD.

## Labor and Industries

**Estimated Tax Due to Labor & Industries by Industry  
Eastern Washington (\$6.6 Million)**



**Estimated Tax Due to Labor & Industries by Industry  
Rest of Western Washington (\$9.0 Million)**



Data used for this study and to create these charts comes from the databases of the IRS and the Washington State DOR, L&I, and ESD.

## **Implications**

### **Geographical Implications**

For all three agencies Puget Sound is the geographical area within Washington State with the highest concentration of unregistered business, implying that in-state efforts could be focused in Puget Sound.

Results of the study imply that compliance efforts for the Department of Revenue would be best targeted to out-of-state businesses that contract with Washington businesses or individuals. The results show that the largest amount of tax dollars and the largest firms are in this category. Out-of-state businesses are a current focus of the DOR Compliance Division. Thus, this report confirms the current focus and supports continuation of current efforts. This category of business is not of as much concern to L&I and ESD because their interest lies with firms with employees in Washington.

### **Industry Implications**

Unregistered construction businesses are a problem for ESD and L&I. While they represent a smaller number of firms, the construction industry has a higher tax liability on average than firms in other industries. This is because ESD and L&I construction tax rates are higher due to high injuries and the seasonality of employment. The construction industry has a much lower impact for DOR. This is because DOR tax rates are relatively low for construction. Sales taxes, for the most part, are borne by the final consumer, and B&O tax is at a relatively low rate.

Despite the fact that the construction industry has one of the highest rates of underreporting for DOR-administered taxes, the results show that compared to other industries, the construction industry has a small amount of activity by unregistered businesses. This is contrary to current assumptions that the high level of DOR noncompliance among registered construction businesses would be paralleled by a high level of unregistered business activity. There are two other possible explanations of why this parallel was not found:

(1) Construction businesses have opportunities and reasons for underreporting of taxes (e.g. jobs on the side, ignorance of tax law) but, being a somewhat regulated industry, they are aware of their requirement to register with the Department of Revenue and have an incentive to do so in order to be licensed and bonded.

(2) It may be that the data for which we have an industry breakdown does not accurately represent the true industry picture because we do not have an industry breakdown for unregistered businesses that do not register with the IRS. It is possible that there is a higher percentage of construction businesses in the set of unregistered firms that do not report to either the IRS or state agencies. This is a possible explanation if the majority of unregistered construction firms are firms with very little business activity that do not care about being bonded or licensed and do not register with Washington State or the IRS. If this is the case, construction firms would be a larger percentage of all unregistered firms.

Many of the unregistered businesses in other industries seem to be the type of businesses that would work in isolation and whose customers are households instead of other businesses. Many are small businesses in the service industry. Some examples of this type of service activity are repair services and services to property such as lawn care. It may be that because these businesses work in isolation in respect to other businesses, they are unaware of the requirement to be registered with the state of Washington. Similarly, some out-of-state-based businesses may only have contact with Washington State via their 1099 contractors.

Another finding is that the sole proprietors and 1099 contractors have small tax liabilities on average. (Note that although these businesses are small, their income is larger than DOR's \$28,000 gross business income reporting threshold.)

### **Educational and Enforcement Implications**

The high likelihood of ignorance regarding registration requirements combined with the small average size of service sector businesses, sole proprietors, and 1099 contractors implies that a multiagency education effort may be the best strategy to increase compliance from this group.

The agencies can use the industry and firm type results to guide them in developing mailing lists from other sources (such as other taxing agencies, other state agencies, and industry associations) in order to target educational efforts. However, it may be challenging to find addresses for these businesses since they are not likely to be registered with business associations. The results of the study support targeting the following groups:

- The service industries on a long-term continuing basis (all three agencies),
- The retail industry – primarily out-of-state sellers of tangible personal property to consumers that may use in-state businesses that establish nexus for the seller (primarily DOR), and
- Wholesaling and manufacturing industries – both for use tax issues and for out-of-state sellers with nexus issues (primarily DOR).

The construction industry needs to be a focus of enforcement activity as well as education. Coordinated efforts by all three agencies will improve outcomes.

### **Other Implications**

Continue and expand joint agency investigation, data sharing, and data matching. Coordinating fraud detection and anti-fraud campaigns would also be useful.

### **Methodology**

An outline of the methodology follows. Details of the methodology are presented in Appendix I.

### **Overview of Methodology**

Estimates were made using U.S. Internal Revenue Service data from the Washington State DOR data warehouse. Four IRS data files were used:

- 1099 payers (out-of-state firms that paid Washington contractors)
- Washington-based 1099 payees
- Washington 1040 individuals with Schedule C income
- Washington corporations (1041 estate trusts, 1065 partnerships, 1120 corporations, 1120s chapter s corporations, 706 estates, 709 gifts, and 941 employer quarterly tax returns)

These four types of data cover almost all Washington business activity (see the *Sources of Error* section for a description of the possible excluded activity).

The overall methodology was done in two stages. Stage one was to measure firms that register with the IRS but not with Washington State departments. Stage two was to measure Washington firms that are not registered with the IRS.

The first step of stage one was to electronically identify the IRS taxpayers who likely were not registered with the Washington State Department of Revenue in each of the above-noted IRS data sets. The second step of stage one was to create a stratified random sample of the non matches and to try to find matches by hand for each. Nearly 500 IRS taxpayers were checked by hand for matches. The results were then tested to determine and apply a confidence level within industries and dollar ranges. Remaining firms that did not match were considered to be unregistered firms.

Washington taxable income and tax due for the unregistered firms was inferred from the relationship of gross income, taxable income, and tax due for similar registered Washington firms.

For stage two the IRS study, “2001 Federal Tax Gap,” which was updated by the IRS in February 2005, was used. The IRS study results were adjusted for Washington State and for Washington State taxes.

The number of employees was inferred based on the relationship of employees to gross income for similar registered Washington firms. Employment Security and Labor and Industries inferred the amount of employee taxes owed by these unregistered firms based on taxes per employee for similar registered Washington firms. Note that it is assumed that firms that do not register with Washington State Department of Revenue do not register with either Washington State Employment Security Department or the Department of Labor and Industries. We can assume this because the three departments periodically match data to find businesses registered with one department but not the others.

### **Reliability of the Estimates – Sources of Error**

There are four possible sources of error in this methodology:

1. The sample may not be representative of the group it is intended to represent. Fairly large samples were used to minimize this.
2. Taxpayers that are registered may not be found in the matching process and therefore may be improperly counted as unregistered. Multiple ways of finding taxpayers were used to minimize this.
3. The relationship between tax due and gross income may not be the same for unregistered taxpayers and registered taxpayers.
4. The IRS data for Washington-based individuals with Schedule C data, for Washington-based 1099 payees, and for out-of-state 1099 payers may include individuals who performed work outside of Washington. This would not be considered taxable activity. To somewhat offset this possible over-counting bias, some out-of-state individuals may be doing work inside of Washington that is not counted because they do not live in Washington State.

Because of the second source of error (registered taxpayers not being found), there is a tendency for the error to be biased upward so that the estimates are more likely to be too high than too low.

### **Possible Further Research**

#### **Provide More Detail on the Service Industry and Other Industries**

A larger sample of 1099 data from the service industry could be pulled and stratified by types of services to provide more detail on which service industries to focus compliance efforts. This could also be done for other industries and could be sorted by geographic regions as well.

Another way to provide more detail is to complete the “bottom-up” methodology using Employment Security data. (See appendix regarding “Other Methodologies Explored But Not Used.”)

#### **Refine the Estimate of Businesses That Are Not Registered With the IRS**

When more detailed data from the IRS study is forthcoming, refine the estimate by using industry and size of firm data to estimate Washington’s share of the national estimate.

#### **Revisit the Estimate in a Few Years**

Use the 1099 methodology again in a few years to see the trend in noncompliance and the effect of the compliance efforts.

#### **Use Information Discovered About Underreporting Firms to Help Identify Nonreporting Firms**

Examine the idea that the business practices used by registered firms to conceal income or employees will also be used by firms that do not report to state agencies at all, recognizing that

these practices may allow us to identify nonreporting firms. Underreporting firms are already an area of emphasis for all three agencies, and estimates of annual taxes due from these firms are \$156,000,000 for DOR, \$84,000,00 for L&I, and \$11,000,000 for ESD.

## APPENDIX I

### Detailed Description of Methodology

#### *Methodology Detail – Data*

#### Department of Revenue Data Warehouse

The Washington State DOR maintains a data warehouse for audit and compliance purposes. The data warehouse contains detailed information on all Washington taxpayers. Information comes from the IRS, Employment Security, and DOR data sources.

#### *Identifying Groups and Sorting the Data*

The first step in the project was to categorize different types of unregistered businesses and to identify data sources for each category. The four categories of potentially unregistered businesses and their data sources are:

| <b>Type of Unregistered Business</b>                            | <b>Data Source</b>  |
|---|---|
| Out-of-state-based businesses that contract with Washingtonians | IRS 1099 Misc. Income Payers (Individual Return Master File)  |
| Washington corporations, partnerships, etc.                     | IRS Business Filers (Business Master File and Business Return Tax File)                             |
| Washington sole proprietors                                     | IRS 1040 with Schedule C data (Individual Master File and Individual Return Transaction File)       |
| Washington individuals who did not file an IRS 1099 Schedule C  | IRS 1099 Misc. Income Payees (Individual Return Master File and Individual Return Transaction File) |

#### Removing Overlap in the Data

In order to assure that individuals who both received a 1099 Misc. Income and filed a Schedule C with the IRS were not counted twice, duplicates were removed from the Washington individuals analysis. This is because the IRS 1040 has much more robust information than the IRS 1099 Misc.

#### Out-of-state-Based Businesses That Contract with Washingtonians

Potentially unregistered out-of-state businesses are those that are not registered in Washington State but utilize a Washington-based independent representative, thereby establishing a nexus with the state of Washington. Study analysts identified all payers that did not have a match score over a certain threshold (see section titled *The Initial Match* below for detail on the match score). Then, after reducing the amount by a confidence level, they developed and applied a ratio. The ratio was equal to the amount of tax due that is generated by the out-of-state firm to the amount

that it pays in 1099 Misc. payments. This data was derived from the historical data of the Business Discovery Team in Compliance.

### Washington Corporations, Partnerships, Etc.

These data are comprised of IRS data for corporations, partnerships, and trusts with addresses in the state of Washington.

### Washington Sole Proprietors

These are individuals who filed an IRS 1040 with a Schedule C (business return) attached and have an address in the state of Washington.

### Washington Individuals

These are individuals who received 1099s. The duplicates have been removed (see the discussion above).

### *The Initial Match*

The initial match used Federal Employer Identification Numbers (FEINs) where possible. When FEINs were not available, a soft match was performed using name and address. Because the state of Washington does not utilize the FEIN for state tax purposes, a matching process between DOR tax rolls and the IRS files has been developed. Identity Systems software was utilized. The software takes each IRS filing, matches likely state registrants against it, and assigns scores regarding the likelihood of a match. The algorithm for the score includes Name, Address, Federal ID (if available), NAICS code (if available), and general geographic location. The scores are maintained in the data warehouse, allowing end users to query against the data utilizing Business Objects software. In the initial match a little over 29 percent of the accounts did not match.

### *The Secondary Match*

The second stage of matching was to take the non matches from the soft match and check by hand for possible matches with DOR data. Because there were nearly 100,000 non matches, it was impossible to check them all. Therefore, a statistical sample of the non matches was checked by hand. The results were then extrapolated to the rest of the non matches.

### Sampling

In order to minimize the sample size needed and to increase representativeness of the sample, the non matches were stratified by industry and by size. Each of the four sets of IRS files – 1099 payers, 1099 payees, corporate taxpayers, and individual 1040 taxpayers with Schedule C income – was broken into three size groupings for eight industry groupings. Statistical analysis was conducted to determine the sample size for each grouping; within each of the three size groupings for the eight industry groupings, 30 to 50 sample businesses were tested. Each sample

business was checked against DOR, ESD, and Master Licensing Service (DOL) data as well as Internet searches using all possible spellings and word combinations of the business name and business address. In some cases the businesses were called to verify their information. Taxability of the firm's activity was determined by its industry code, name, and sometimes by phone contact.

### Industries

- Agriculture, Mining, Utilities
- Construction
- Information, Finance
- Wholesaling/Retailing
- Services
- Transportation
- Manufacturing
- Unknown Industry

Size categories, which are based on gross business income, are between \$28,000 and \$100,000, between \$100,000 and \$1 million, and between \$1 million and \$10 million annually. Firms below \$28,000 were not considered because they are below the reporting threshold for B&O tax. Note that for out-of-state payers, the size was based on the amount paid to Washingtonians. Firms above \$10 million were not considered because the probability of being unregistered for a firm with taxable income this large is minimal. (Most large firms register voluntarily; compliance efforts register those that do not.) Previous experience using the data warehouse has shown that accounts over \$10 million are either already registered or have nontaxable income such as distributions.

The resulting percentage of matches was applied to the remaining businesses in each group. The sample design and percentage of matches by industry and size grouping are included in the appendix. Note that for the individual files, sampling was done only by size, not industry. This is because industry information is not included in the individual tax returns.

### *Determining Taxable Income and Tax Due For the Unregistered Taxpayers*

Once the percentages of non matches were determined and applied to each grouping, the number of businesses and the total gross income for each grouping were determined. Total gross income was then translated into taxable income and tax due. This was done using DOR taxpayer data. The relationship between gross and taxable income and the effective tax rate were calculated for each size and industry grouping.

### *Measuring Activity of Businesses Not Registered With the IRS*

For stage two the IRS study, "2001 Federal Tax Gap," which was updated by the IRS in February 2005, was used. The IRS study used an audit random sample of tax returns and other information from 2001.

For the preliminary estimate, the IRS-published figures for estimated national tax due were adjusted to create a Washington State estimate. First, the estimate was broken into tax due by businesses and by individuals with business income using the percentage that each contributes to the overall IRS tax gap (which also includes underreporting). For the purposes of this study, noncompliance by unregistered businesses was separated from underreporting by registered businesses.

Second, the national tax figures were translated into gross income using the relationship of national tax due to gross income for registered taxpayers.

Third, the gross income figures were estimated for Washington State based on the percentage of national tax paid by Washingtonians and the percentage of national gross income produced in Washington State.

Fourth, the Washington gross estimates were converted to Washington tax using the effective tax rate for Washington State taxes.

This estimate should be refined when the following data becomes available from the IRS:

- Tax due for unregistered businesses and individuals with business income
- Gross income related to the tax due for unregistered businesses
- Gross income and tax due for unregistered businesses by industry

#### *Translating Gross Income to Number of Employees*

Study analysts used Department of Revenue data matched with Employment Security data to determine the number of employees based on gross income. For each size and industry grouping, analysts calculated number of employees per dollars of taxable income for registered businesses. That ratio was multiplied by the total taxable income of unregistered taxpayers in the appropriate group. Employment Security and Labor and Industries inferred the amount of employee taxes owed by these unregistered firms based on taxes per employee for similar registered Washington firms.

## Appendix II

### Other Methodologies Explored But Not Used

The methodology of using IRS data in the DOR data warehouse was settled on after the three agencies reviewed and tried several methodologies. Once the three agencies developed the methodology for using the IRS data, it was apparent that this methodology would give more reliable results than the other methodologies, since it uses actual data and has fewer assumptions. Other methodologies that were explored are briefly described below.

#### *Overall Approach of Other Methodologies Explored*

All of the other methodologies explored shared the same overall approach – to find some way to measure the total taxable activity in Washington State, then to subtract out taxable activity by registered taxpayers, leaving the taxable activity by unregistered taxpayers.

The other approaches each had significant sources of error. Therefore, if any of these approaches were used, they would not have been used in isolation; two, three, or more approaches would have been done. The answer would have been a range that was triangulated from the estimates that came from the various approaches.

The overall plan was to have both “top-down” and “bottom-up” methodologies. Top-down methodologies would use some known part of the economy to extrapolate the entire economy to come up with an estimate of the Washington economy and therefore Washington taxable income. All of these approaches yield broad, rather than precise, estimates. Because the top-down estimates would have been so broad, they would have been done in combination with bottom-up estimates. These estimates start with an *a-priori* list of noncompliant industries. Existing activity in each industry is then estimated and totaled. The main problem with using this approach alone is that the *a-priori* list of industries may be incorrect.

#### *Top-down Methodologies*

##### Using IMPLAN

This approach would have used relationships between industries in Washington State IMPLAN, a regional economic input-output model, to extrapolate what activity should be in other industries. Compliant industries would have been identified. Data from the taxing agencies on these compliant industries would have been used in combination with data on the relationships between the known-compliant industries and other industries in order to estimate Washington State activity in the other industries.

##### Using Washington Population Survey

The Washington State population survey is a random sample survey that includes data on employees and other workers. The idea of using the survey is to build an estimate of the number

of informal economy employees. This estimate would be done by attaching a probability to each employee that they are an informal economy employee. Probabilities would be determined by whether the employees meet certain criteria (which are detailed in the population survey), e.g. they are employed by one of the industries known to hire informal economy employees, their employer has few employees, they do not have certain benefits, or they work more than one job. Each employee would have a different probability based on the number of criteria that they meet. This approach was abandoned because sufficient data could not be found to determine reliable probabilities.

### Using the Corporate Income Tax Model

This methodology would have been used to measure unregistered out-of-state firms. The corporate income tax model has data on apportionment factors of national firms. The idea was to treat the firms as a sample of all firms nationally, then use their apportionment factors to infer probabilities on the number of states each firm sells into and use the sum of these probabilities to infer the value of sales from firms from one state into another. The final step would be to estimate sales from firms in all states into Washington State. In addition to being more assumption-laden than the IRS data methodology, this methodology was rejected because the DOR corporate income tax model completion was postponed until some time in mid to late 2007.

### *Bottom-up Methodology*

The first step in the bottom-up methodology is to prepare a list of industries that are assumed to be noncompliant. This list was prepared with the help of the compliance divisions in each of the three agencies. Industries were also identified by using the DOR Compliance Study, with the assumption that noncompliance via nonregistration would parallel noncompliance via underpayment. For each industry a metric would be determined from which the entire industry activity would be extrapolated. The metric would have reliable data and a reliable relationship between its usage and industry activity. For example, in the construction industry, the amount of drywall used in the state is a good metric because it is known and because a defined amount of drywall is used in various types of building. From the amount of drywall, one can extrapolate total construction activity.

After the decision to use 1099 data, the three-agency team continued to work on this methodology for the construction industry. This is because it was thought that the construction industry would be the greatest source of noncompliance and that more detailed information about which parts of the construction industry were most noncompliant would be useful.

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