

# Highway Use Tax Alternatives for Heavy Trucks in Oregon

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This paper presents a policy analysis of highway use tax alternatives for heavy trucks. It compares registration fees, fuel taxes and weight-distance taxes in terms of equity, compliance costs, administrative costs, and evasion potential. Three different tax scenarios are evaluated for the state of Oregon. The conclusion is that continued reliance on the weight-distance tax is the best option for Oregon.

Highway use tax systems are made up of three basic elements: vehicle registration fees, fuel use taxes, and "third structure" taxes. Vehicle registration fees are flat fees that must be paid on an annual or biennial basis and are generally associated with the vehicle license plate. Fuel use taxes are collected in cents per gallon of fuel purchased or used in a state. Third structure is the catchall classification that includes other taxes associated with the use of highways or operation of a vehicle.

Third structure taxes take a variety of forms, including ad valorem (property) taxes, fees, tolls, weight-distance taxes, and other miscellaneous charges extracted from the motoring public. However, the trucking industry normally associates the term with ton-mile or weight-distance taxes. This type of tax is collected in the form of a rate per mile of travel based on the weight of the truck.

Oregon's highway use tax system is relatively simple. All vehicle owners pay a registration fee. In addition, automobile owners pay highway use tax in the form of fuel taxes. Heavy-truck operators pay no fuel taxes in Oregon but they do pay the weight-distance tax. This is a unique arrangement. Currently, five other states use the weight-distance form of taxation, but they also collect fuel use taxes from the trucking industry. Oregon is the only state that does not collect a fuel use tax on heavy-truck fuels.

Oregon has a unique history in terms of highway use taxation. In 1919 Oregon became the first state in the nation to use fuel taxes to finance highway and road construction. In 1933 Oregon implemented the nation's first weight-distance tax, of the ton-mile type. Under a ton-mile system, a different tax rate is charged for each load transported by truck. In 1937 Oregon completed the first cost responsibility or cost allocation study. Such studies allocate the cost of highways proportionally to all highway users. In 1947 Oregon changed its ton-mile tax to the present weight-distance system, in which a single tax rate is charged for all miles of travel based on the highest operating weight of the truck. This tradition of leadership in the highway use tax area has continued. In 1990 Oregon implemented the first axle weight-distance tax that explicitly considers axle weights in the structure of the tax rates.

The trucking industry's opposition to Oregon's weight-distance tax began as early as the 1950s. In 1952 the industry sponsored a

referendum that would have made weight-distance taxes unconstitutional. This measure failed by a 4-to-1 margin. However, opposition to the weight-distance tax continues today. The truckers' objections are that weight-distance taxes do not approximate highway costs, administrative and compliance costs are high, and evasion is widespread (1). A discussion of these issues follows.

## EQUITY

The contention that weight-distance taxes do not approximate highway costs is in reality a claim that this form of taxation is inequitable. In commercial trucking, tax equity is a significant issue. Trucking companies compete based on the efficiency with which they run their companies and the services they provide. An equitable tax, therefore, would be transparent in the marketplace. To achieve this objective, all users must pay their fair share for the use of the highway system. This is the underlying principle of cost responsibility that Oregon has long used to allocate highway costs among users of the system.

Two aspects of equity, horizontal and vertical, are considered in Oregon's cost responsibility studies. Horizontal equity means equal treatment of equals: owners of vehicles that have equal highway wear characteristics should pay the same amount of highway use taxes. Vertical equity means that unequals are treated unequally. For example, an owner of a truck that weighs 36 320 kg (80,000 lb) should pay more taxes than an owner of a truck that weighs 11 804 kg (26,000 lb). To achieve true equity, the tax system must achieve both horizontal and vertical equity.

The Oregon cost responsibility approach makes a basic distinction between the cost impacts of cars and trucks. Highway costs are allocated between the two groups based on traffic characteristics, level of highway expenditures, and engineering requirements. Using these three components, Oregon's 1992 Cost Responsibility Study determined that cars are responsible for 61.3 percent of the state's road costs and trucks are responsible for 38.7 percent (2). Once this basic allocation is made, trucks are further divided into 908-kg (2,000-lb) increments or classes to determine the appropriate cost responsibility for each group. The Oregon study recognizes 51 classes of trucks. This approach considers both horizontal and vertical equity.

Once cost responsibility characteristics are determined for each vehicle class, the tax system, to achieve true horizontal equity, must reflect the variability of actual usage. For example, a 21 792 kg (48,000 lb) truck being driven 161 km (100 mi) represents less cost than an identical vehicle being driven 1 610 km (1,000 mi) and should, therefore, pay proportionately less tax. Registration fees are flat taxes and do not reflect actual highway usage. However, Oregon's registration fees do vary according to the weight of the

vehicle. There is an element of vertical equity. Because usage is not reflected, however, horizontal equity is not fully addressed.

Unlike registration fees, fuel taxes reflect usage. The more miles traveled, the more fuel burned and the more tax paid. Fuel taxes have an element of horizontal equity, but they do not reflect vertical equity because fuel consumption does not increase proportionately with increases in the weight of the vehicle. For example, a 1986 study found that the cost responsibility of an 36 320-kg (80,000-lb) truck is double that of a 22 700-kg (50,000-lb) truck, but the 36 320-kg (80,000-lb) truck uses only about 14 percent more fuel (3).

Weight-distance taxes, by their very nature, address both the horizontal and vertical equity because the tax is assessed for each mile of travel and is based on the weight of the vehicle. In the Oregon system, the tax rate is determined based on the actual costs the vehicle represents to the road system. This combination of the cost responsibility approach to highway use taxation and the reliance on the weight-distance form of taxation makes Oregon's system the most equitable in the nation. Critics of weight-distance taxes contend that they do not accurately reflect highway wear characteristics because they are based only on the overall weight of the truck and the distance traveled. They claim that the actual weight of each axle more accurately determines the road wear characteristics. This is true: cost responsibility rises steeply (roughly to the third power) as axle weights are increased. For example, the rear axle of a typical 11 804-kg (26,000-lb) truck causes over 1,000 times more road wear than that of a car (4). However, this aspect of cost responsibility is addressed by Oregon's axle weight-distance tax. With this form of tax, the rate varies not only by the weight of the vehicle, but also by the number of axles that distribute the load. Today, the axle weight-distance tax applies only to trucks weighing more than 80,000 lb. However, this approach could easily be extended to trucks operating at lower weights.

### Administrative and Compliance Costs

The trucking industry contends that both administrative and compliance costs for weight-distance taxes are higher than for fuel taxes. The reality is that both types of taxes require taxpayer reporting and record keeping, and both also require compliance checks to minimize tax evasion.

Fuel taxes on automobile fuel do not require taxpayer reporting because they are collected at the pump. This approach does not work for heavy truck fuels, principally because most heavy trucks operate in more than one state and are equipped with large-capacity fuel tanks. It is common for a truck to fuel up in one state and then traverse one or more additional states without having to refuel. To ensure that trucking companies pay the appropriate tax based on the fuel used in each state, they must file tax reports. Currently, 47 of the continental states assess fuel taxes on trucks, and all require fuel use tax reporting.

Fuel use and weight-distance tax reports are based on mileage data. With a weight-distance tax, this mileage information is simply multiplied by the appropriate tax rate to calculate the tax due. Fuel use tax reporting requires not only mileage information, but also the number of gallons consumed. To reach this result, a miles-per-gallon figure must be calculated, then divided into the miles traveled in each state to determine the number of gallons used. The number of gallons of fuel must then be multiplied by the fuel tax rate in each state to determine the taxpayer's total liability. Fuel tax receipts must be maintained for presentation to compli-

ance auditors. Thus, a fuel use tax reporting system actually requires more calculation and record keeping than a weight-distance tax.

Government administrative costs are also similar for both tax types. Each taxpayer must be registered, periodic tax reports must be processed and compliance audits must be conducted. The most significant difference between the two tax types is that fuel tax audits take longer because the auditor must not only verify mileage but also check fuel purchases.

Oregon Public Utility Commission figures show that administrative costs for collection of Oregon's weight-mile tax have averaged 4.5 percent of the tax collected over the past 10 years. Because Oregon does not have a heavy-truck fuel tax, diesel fuel is not tracked in the state. If Oregon were to implement a tax on diesel fuel, the amount of fuel consumed within the state would have to be monitored, and sellers of diesel fuel used for non-highway purposes would have to be licensed and audited. Non-highway uses include home heating oil, railroad fuel, steamship fuel, and fuel consumed in off-highway vehicles commonly used in the logging and agricultural industries. The additional bureaucracy this would require would significantly add to government costs and would impose new burdens on private businesses.

One factor supporting the trucking industry's contention that switching from the weight-distance tax to a fuel tax would save compliance costs is the relatively small number of states that have weight-distance taxes. Today, six states employ the weight-distance form of taxation. With the exception of Oregon, the other states also have fuel use taxes. Trucking companies operating in states with both weight-distance and fuel use taxes must comply with both types of taxes. If all states relied only on fuel taxes and registration fees, compliance costs would be reduced for firms operating in many states.

Further support for this argument results from the existence of base-state agreements. Base-state agreements are arrangements whereby trucking companies pay their tax liability to their home state for all states in which they operate. Each state then distributes the revenues among participating states. This approach reduces the number of registrations, tax reports, and compliance audits with which a trucking company must contend. There are four base-state agreements in existence: the International Registration Plan for the payment of registration fees, the International Fuel Tax Agreement and the Regional Fuel Tax Agreement for payment of fuel taxes, and the Weight-Distance Base-State Agreement for payment of weight-distance taxes.

The federal government requires that all states assessing registration fees and fuel use taxes join base-state agreements, but membership in the weight-distance agreement is not required.

There are advantages accruing to the states from base-state taxation. They have fewer tax accounts to administer, because they are only dealing with the companies located in their state. For example, at the end of 1993, Oregon had 27,460 weight-distance tax accounts, representing firms throughout North America. This compares to approximately 12,000 registration accounts, which is a rough estimate of the number of companies that are Oregon-based and would have to pay a fuel tax.

Although the number of accounts would be reduced, the complexity of the tax reports and compliance audits would be increased because they would reflect activity conducted in all states in which the companies operate. In reality, there would be some savings in the trucking industry's compliance costs, but little if any savings in government administrative costs, if Oregon were to switch to a diesel fuel tax.

Administration and compliance costs for truck-related highway use taxes will be reduced in the future, as new technologies are more widely implemented. Currently there are several projects under way that use intelligent vehicle highway system technologies to verify regulatory compliance and track transport equipment. Oregon has developed a camera system, which reads truck license plates, that is used for similar purposes. Additionally, many states are developing electronic communication systems that fall broadly under the heading of electronic data interchange. Reduction of the huge amounts of paperwork inherent in the transportation industries will drive costs down.

### **Tax Evasion**

Two studies have been conducted to measure evasion of Oregon's weight-distance tax. In 1954, a study by the Stanford Research Institute concluded that the evasion rate was approximately 4.4 percent of the tax collected (5). In 1984, the Battelle Institute calculated an evasion rate of between 5.2 and 5.4 percent (6). It is interesting to note that in 1954, the Oregon Public Utility Commission (PUC) had 34 weight-distance tax auditors whereas it now has 29. The Stanford study concluded that evasion rates would not materially increase unless the Commission's compliance efforts were reduced. This observation appears to be supported by the results of the two studies.

Fuel tax evasion, on the other hand, is rampant in this country. According to the IRS and FHWA, diesel fuel tax evasion costs states and the federal government about \$4 billion annually (7). Much of the problem stems from sales of diesel fuel in which the taxes are paid by the retail customers but never remitted to government tax collectors. In other words, it is not necessarily the trucking industry that is evading diesel fuel taxes, but rather those in the fuel sales and fuel distribution businesses. In many instances, organized crime is involved in these tax evasion schemes (7).

The principal reason for this high level of evasion is that the point of tax collection cannot effectively be moved up the distribution chain. Gasoline is taxed at the wholesale level and even at the refinery in some cases. However, most diesel fuel is not used as highway fuel. If it were to be taxed higher up in the distribution chain, the government would be faced with the need for a massive refund program. In 1990, 47 percent of the diesel fuel consumed in Oregon was used as a highway fuel (8). The balance was used for home heating oil, steamship fuel, railroad fuel, fuel for agricultural machinery, and other non-highway uses. Thus, 53 percent of the taxes collected would require refunds to non-highway users. This would not be a popular government program.

One recent effort to combat air pollution, which has implications for diesel fuel tax evasion, is the federal requirement for dyeing high-sulfur diesel fuel. This requirement went into effect January 1, 1994. The goal is to dye high-sulfur diesel and prohibit its use as a highway fuel, thereby reducing air pollution. Undyed, low-sulfur fuel is then taxed further up the distribution chain, reducing the opportunity for evasion. There are two problems with this effort. Much of the low-sulfur fuel is also used for non-highway purposes; exactly how much is not clear at this point because the program is so new. The other problem is that there is no effective enforcement mechanism to ensure that fuel burned in trucks is low-sulfur, taxed fuel.

### **OTHER POLICY CONSIDERATIONS**

Fuel taxation, by its very nature, presents a public policy conflict. On one hand, a stable funding source must be ensured for highway

construction and maintenance costs. On the other, non-renewable petroleum resources must be conserved. If government is successful with one of these policies, it is less successful with the other.

Another consideration, from the standpoint of highway users, is that highway use taxes should be spent on highways. The recent trend has been to raid highway trust funds to offset shortfalls in other areas; for example, there is a federal fuel tax that now applies to budget deficit reduction. Many states have also diverted highway funds to other uses. In Oregon, by constitutional provision, all road and vehicle use taxes are dedicated to highway purposes.

A 1991 study conducted by the American Trucking Associations indicates that the industry may reduce its support for fuel taxes and increase support for weight-distance taxes if fuel tax revenues are significantly diverted to non-highway uses (9). Because highways are the lifeline of the trucking industry, this position is perfectly understandable.

### **ALTERNATIVES TO OREGON'S WEIGHT-DISTANCE TAX**

The following three tax scenarios are evaluated in terms of equity, compliance costs, administrative costs, and evasion potential. These scenarios are the most realistic alternatives to Oregon's present highway use tax system for heavy trucks.

#### **Option 1**

Oregon's weight-distance tax could be eliminated and replaced with a fuel use tax.

This option would be less equitable than the present system, cost nearly the same or more, and be susceptible to significant increases in evasion. The only way a fuel use tax could be as equitable as the existing weight-distance tax is if it were to have a variable-rate tax, with a different tax rate for each truck weight class. This approach would place a significant additional burden on fuel sellers. It would also complicate reporting requirements. This option has been considered in the past and dismissed as impractical.

Administrative costs would rise because of the additional requirement of tracking diesel fuel sold in the state. This could be partially offset by a slight reduction in PUC's administrative costs because of the benefits of the base-state fuel tax approach. The net change, however, is estimated to be minimal.

The trucking industry's compliance costs might be slightly reduced for those companies operating in numerous states because of the benefits of the base-state agreements. However, those Oregon-based companies which operate exclusively in the state would experience an increase in costs.

Under this option, the potential for evasion would increase substantially. The Oregon Department of Transportation estimates that a diesel fuel tax that would raise the same amount of revenue as the current weight-distance tax would require a tax rate of approximately 90 cents per gallon for a 36 320-kg (80,000-lb) truck. This would be far and away the highest fuel tax in the nation, and would provide great incentive for evasion. According to Bob Pitcher, Director of the Department of State Laws for the American Trucking Associations, the trucking industry would not support a state fuel tax rate in excess of 40 cents per gallon, because evasion would be so great that overall highway funding would be jeopardized.

## Option 2

The weight-distance tax could be replaced with a 24-cents-per-gallon diesel fuel tax and registration fees increased.

This option suffers from the same concerns as Option 1 with respect to equity, compliance costs, and administrative costs. The evasion aspect is improved over that of Option 1 because the fuel tax rate is lower. However, evasion is still potentially higher than with the current weight-distance tax.

The real problem with this option is that it shifts the highway funding burden to those companies that operate mostly in Oregon. The registration fee component is estimated by the Oregon Department of Transportation to be \$8,760 per year for a 36 320-kg (80,000-lb) truck. Interstate carriers would pay only a portion of this fee based on the proportion of miles operated in Oregon versus other states. For example, a company operating 80 500 km (50,000 mi) exclusively in Oregon would pay the full fee of \$8,760 each year. However, a company operating 80 500 km (50,000 mi) in Oregon and 80 500 km (50,000 mi) in other states would only pay \$4,380, or one-half the annual fee. This shift in tax liability could have a major negative impact on Oregon-based trucking companies.

## Option 3

The existing weight-distance tax and registration fees could be retained. Future tax increases would be in the form of a fuel tax.

Equity could be maintained through adjustments in the weight-distance tax component. However, administrative costs would increase substantially because it would be a new program with no reductions in existing costs, and evasion could also increase.

## CONCLUSION

The trucking industry has long objected to Oregon's weight-distance tax. An objective analysis of the alternatives shows that all are less desirable from a public policy perspective. In view of the facts, why do truckers continue to attack Oregon's highway use tax system?

A comparison of the truck operating taxes in the various states on a rate-per-mile basis indicates that Oregon is among the most costly

states in the nation in which to operate a truck. Members of the trucking industry complain about the high level of taxation in Oregon and cite weight-distance taxes as the cause. But Oregon's heavy truck highway use taxes are high because they capture the trucking industry's full cost responsibility. Other states subsidize the trucking industry by collecting less than its fair share of highway costs.

The reaction from members of the trucking industry to a 90-cent-per-gallon fuel tax is virtually the same as it is to the existing weight-distance tax. The underlying issue is the level of taxation and not the type of tax.

This concern can be addressed by adjusting Oregon's weight-distance tax rates while at the same time maintaining the public policy benefits of weight-distance taxes. Oregon must only decide what level of highway funding is desirable and whether it wants to subsidize the trucking industry.

The weight-distance tax provides a stable source of highway funding that does not conflict with other public policy goals, the tax is by far the most equitable, and administrative and compliance costs are reasonable. Most importantly, tax evasion is very low. Oregon has an effective and efficient system. It would be unwise to discard it because of misguided arguments from an industry that really wants lower taxes.

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