GAS V.S. MILEAGE TAX
WHICH WILL PREVAIL?

The State of Oregon is concerned that its expenses will exceed their revenues in the near future. In an attempt to increase the amount of income they are anticipating changing the form of the gas tax from a gallon fee to a mileage fee. I will give you an in depth look into each programs by evaluating their pro’s and con’s. I will then provide a few alternative methods that could and should be considered in deciding which tax method will be the most effective.
Intro

Gas prices have been a hot topic in the news for the last few years because of the roller coaster prices. It was just a few summers ago that gas prices hit the five-dollar mark. Some people are forecasting that we will hit this mark again or even exceed it this summer. This has people cutting back on the amount of driving and it has increased the desire to buy more fuel-efficient cars. These two actions have government officials worried because less driving and more fuel-efficient cars results in less gas taxes received by the government. The government is also missing out on revenue from smart cars that do not need gas at all. Typically the gas tax goes toward fixing roads and highways.

"About 33 percent (approximately $45 million/year) will go to maintain roadways, preserve investments and improve safety on Oregon's roads and bridges. About 16 percent (approximately $21.5 million/year) will go to highway modernization (congestion reduction, traffic systems, etc.). About 51 percent (approximately $70 million/year) goes to the bond repayment and the 2009 Transportation Projects Account for the 2009 Transportation Projects program. This includes 51 projects around the state to be built earlier than they could have otherwise been constructed."

(http://www.oregon.gov/ODOT/HWY/RUFPP/docs/RUFPP_finalreport.pdf) The state wants to take action because like the United States government, they are incurring more costs than they are receiving in revenue. Like 44 other states, Oregon is expected to have a budget shortfall for the 2012 year. Of those 44 states, Oregon is expected to have the 5th largest shortage as a percentage of our 2011 budget. Compared to the last recession our state is seeing a longer and more intense budget shortfall, as can be seen in the graph.
http://www.cbpp.org/cms/?fa=view&id=711

Aside from the indirect benefits that result from projects funded by tax income collected, taxes have the potential to induce direct benefits as well. Like every economist knows, a tax is going to reduce the taxed behavior. In theory if gasoline costs more, people are going to use less of it. This has many positive implications in that there are too many people on the streets, especially during rush hour traffic. It is not uncommon for people in big cities to sit in rush hour traffic for hours at a time. The carbon emissions also have a very negative effect on our environment and the o-zone layer.

Fairly recently the state has considered changing its method of taxing driving which is currently being done at the gasoline pump, to the amount of miles that a person drives. I will explain the benefits and costs of each situation, while also providing possible alternative methods, such as simply increasing the gas tax and building toll booths.

Gas Tax

The federal gas tax is currently at 18.4 cents per gallon. On top of this, in the State of Oregon there is also a base tax of $.30 per gallon of gas, which recently was increased from $.24. This is the first time since 1993 that there had been an increase in the tax.
which is expected to raise an additional $300 million per year. Each county and city has
the option to add an additional tax on top of the 48.4 cents. In the Washington County
there is a one-cent additional tax and in Eugene there is an additional five-cent tax, the
largest in the state. In 1932 President Hoover put in place the gas tax to help raise
revenue and balance the federal budget. After more people began to drive the gas tax
began to pay for the roads that were being destroyed because of the additional amount of
use. In comparison with other local states, Oregon has about the average amount of gas
taxes. But, it has the lowest “auto related taxes” compared to Montana, Utah, Idaho,
Nevada, Washington or California (see “Auto Related Taxes table at the end of the paper
for more information). However, when you take a closer look you will realize that the
large difference in “auto related taxes” comes down to the fact that Oregon does not have
a sales tax on automobiles like most of the other states.

When compared to most European countries, we really have nothing to complain about.
As of April 10, drivers in the Netherlands were paying the equivalent of about $6.73 a
gallon at the pump. The gas itself cost $2.61; the rest, $4.12 represented a tax. That’s a
158 percent tax. By comparison, the U.S. has the lowest tax on gasoline of any
industrialized country: about 15 percent at current prices.
(http://www.msnbc.msn.com/id/12452503/ns/business-answerDesk/t/what-does-
gasoline-cost-other-countries/) According to MSNBC, “Elsewhere in the industrialized
world the actual cost of gasoline ranges from $2.15 a gallon (France) to $2.61 in the
Netherlands. But the after-tax price is $5.80 in France and over $6 a gallon in most other
major European countries” (http://www.msnbc.msn.com/id/12452503/ns/business-
answerDesk/). In other countries like China, prices are much more reasonable, almost
too reasonable. The Chinese government keeps prices below international levels, which results in selling it at a loss. However, they are expected to increase their prices so that they stop losing money. As you could imagine, prices in countries like Iraq and Iran offer gas prices for a mind blowing 40 and 35 cents respectively.


By taking a look at the graph above, you can see that the United States is far behind in the race for fuel efficient cars. There are potential biases in the data (each country records fuel efficiency a little different), but it gives a general idea of where each country stands.

"According to MSNBC, the US currently has two cars on the market that achieve over 40mpg, down from five in 2005. In Europe, they’re blowing us out of the water with over 113 cars that achieve 40mpg+. To add insult to injury, most of those automakers are either American companies or companies that have a long-standing history of selling cars here, such as Toyota and Nissan" (http://www.bitbitters.com/47/why-americans-dont-have-fuel-efficient-cars/) Since most countries are already driving more fuel efficient cars it is unlikely that they are in a similar situation as us. These other countries do not have
the issue of equity and fairness because everyone is driving a similar type of car that gets about the same gas mileage. Obviously this is not evident in the United States. There are big trucks that only get about 15 miles to the gallon and there are hybrid cars that get over 40 miles per gallon.

Benefits of the Gas Tax

As I stated earlier, a tax on a good will persuade a person to consume less of that good. Since the price of gas is higher with the added tax than without, people will decide to drive less. With less people driving we will see a decline in auto emissions which are destroying the environment. Although I do agree with this point, I think that a fifty-cent increase per gallon is not going to have a large effect on how much people consume. If a person needs to get to work, they are most likely going to still drive to work regardless of an increase in the price. It is going to need a substantial increase to really have an effect. Even then I believe that people are going to still rely on their car to drive them, but they might just carpool or plan out their driving habits ahead of time (both of which would be a step in the right direction). According to Mike Moffatt from about.com, “the average price-elasticity of demand for gasoline is -0.26. That is, a 10% hike in the price of gasoline lowers quantity demanded by 2.6%. In the long-run (defined as longer than 1 year), the price elasticity of demand is -0.58; a 10% hike in gasoline causes quantity demanded to decline by 5.8% in the long run.”

(http://economics.about.com/od/priceelasticityofdemand/a/gasoline_elast.htm) As I stated before, I imagine that people are not very responsive to “small” increases in gas prices. To explain this more practically, if gas prices are $4.00 and it increases to $4.50, the data
suggests that consumers would demand 7.25% less of gas. I believe this example really re-enforces my point that people are going to continue driving regardless of small increases to the price of gas.

One of the biggest benefits about the gas tax is that everything has been set in place. It is fairly easy for a person to fill their gas tank up and pay the necessary gas tax. It is so easy that some people do not even realize that they are paying a tax. Having to change to a whole new system is going to upset and establish an inconvenience for consumers. In the mileage tax scenario, the whole system is going to have to be completely re-configured and GPS units are going to have to be installed in all vehicles.

Another benefit of the gas tax is that it encourages more efficient cars. It is evident that car companies are making a strong push to supply energy efficient cars recently. The government has also been encouraging people to get hybrid cars by offering a tax deduction if one was purchased.

People are also feeling the negative effects of the increased amount of pollution. The short term effects are really hurting those that have asthma and other respiratory illnesses. The longer term effects include increased chance of having chronic respiratory disease, lung cancer, and heart disease. Children and the elderly are especially susceptible to these conditions because of their underdeveloped or weak immune systems.

Although there is some debate about the validity of global warming, many scientists are convinced that pollution is causing the destruction of the ozone layer and has increased temperatures because of the emission of greenhouse gases. This in affect is melting the
polar ice caps and causing havoc in our everyday lives. It is good to see that we are finally realizing the negative impacts that we are having on our environment and ourselves.

**Disadvantages of the Gas Tax**

The reason that the alternative method of gas tax has been suggested is because the government is not able to collect enough revenues and they believe that there are people that are not paying enough driving related taxes (soon to be many more drivers). The government believes that when people are driving on the road and are literally deteriorating the road, they should also be paying a fair share in taxes. Since there has been an increase in the number of people with electric and hybrid cars, these people have not been filling up their gas tank as often. By not getting as much gas, they are not paying as much in the gas tax. This is a problem because the government is not receiving the revenue that is owed to them and the people that still rely on gas are paying the majority of the gas tax. However, it is important to realize that these fuel efficient drivers are not paying as much in taxes at the pump, but they are reducing the burden on our Earth. This is a very tough to put a price on this, but it could even be argued that they are paying more than their fair share for saving the environment. Although the government appreciates this, they are still not seeing the money flow coming to them.

It is safe to assume that people that have less income have an older car and less of an ability to purchase a new (often more efficient) car. It is also safe to assume that on average older cars get worse gas mileage relative to a newer car. For this reason, the gas tax is unfair because the lower class pays a higher percentage of their income on the gas
tax. It has become even more of an issue since the state recently increased the gas tax from 24 to 30 cents per gallon. According to the US Energy Information Administration, the average American uses approximately 500 gallons of gasoline in a given year (this comes out to using nearly 10 gallons of fuel per week). The current total amount of taxes imposed on gas in Lane County comes to $.534 (18.4 cent Federal, 30 cent state and 5 cent county). To give you a clear representation of the inequality between the rich and the poor, we can see how much each party pays in gas taxes for a given week. We will assume for simplicity that the rich party can afford a new hybrid and thus gets 35 miles per gallon while the poor party can only afford an older used car that only gets 20 miles per gallon, but they both drive a total of 250 miles in a week. The rich party ends up paying $3.81 \((250 \text{ miles} / 35 \text{ miles per gallon}) \times .534\) in taxes every week while the poor person ends up paying $6.68 \((250 \text{ miles} / 20 \text{ miles per gallon}) \times .534\) in taxes each week. This might seem like it is not much of a difference, but when you compare this on a yearly scale or a lifetime scale, the difference becomes significant. The poor person ends up paying more than 175% of what the rich party is paying.

**Conclusion of the Gas Tax**

The biggest attribute that the gas tax has going for it, is that it is already in place and is functional. People appreciate things that they are comfortable with and know how to use. The gas tax has a lot going for it, but the problem is that the government is not satisfied with the amount of revenue they are making and it is putting an unfair burden on low income families. I believe that something will have to change so that the state can acquire
the necessary resources it needs to operate. This is why I do not think this program will
be still intact in the future.

**Mileage Tax**

The idea to come up with an alternative way to collecting revenue for driving related
taxes began in 2001. Basically the new idea was to charge people for miles driven instead
of per gallon. Each car would be equipped with a GPS unit that would help keep track of
the miles a person has driven while inside the state of Oregon. The potential future option
to submit payment for the mileage tax could be done at the pump. The other option to pay
for the mileage tax would be to keep track of how many miles you drive to figure out
how much in gas tax you owe (As indicated later it would cost 1.2 cents per mile, so you
would just multiply the number of miles that you drove by 1.2 to give you the amount
that you owe) and then subtract it from the amount of gas tax that you paid at the pump.
According to ODOT, it is expected that the mileage tax will most likely be about 1.2
cents per mile driven. In April of 2006 the idea was put to the test with almost 300
drivers in Portland, Oregon. The results came back that emphasized that the pilot
program could work and had potential. They found out that paying at the pump for the
mileage tax would be a possibility and that it would be fairly easy for consumers to make
the switch. The switch from the gas tax to the mileage tax would be a phased in process
to help make it easier on everyone. The state understands that it would be too expensive
to accommodate every car with a GPS unit, so they would allow people to choose
between the two programs. Because this would be such a big step, the State of Oregon
believes that it would need the mileage tax program to be a countrywide policy. The
foundation that the state has done though, would help make the decision to be made by others relatively easy.

**Benefits of the Mileage Tax**

The state believes that this new program will allow them to acquire the necessary revenue to pay for driving related expenses such as fixing the roads. Since under the current system people are avoiding the tax, this new system would allow a tax to be put on everyone and thus the state could collect more in taxes while not increasing the burden on a select population.

Another benefit is that once the program is underway it will be relatively easy to regulate and run. GPS units would be added to every new car, which could transmit the information directly to the state at the gas pump. It is deemed very possible to create technology that would be able to calculate the amount of mileage taxes right at the gas pump.

Another perk of the mileage tax program is that the rates for the hours that you drive could be adjusted. Thus the state could charge a premium for rush hour driving to try to deter such large congestion. This can be done because the GPS unit is capable of getting a rough idea of where a driver is and what time they are driving.

**Downfalls of the Mileage Tax**

Although it would be easy to sustain the program once it was started, getting the program started would be a large task. People often do not like change, so convincing them that this is a better method is going to take a lot of persuading. According to ODOT, in a
study in 2003, they estimate that it would cost $33 million dollars to implement the new process. ODOT indicates that this would be only a minor fraction of the amount of mileage tax that we would be paying. Please see the attached table below to see a breakdown of how the $33 million dollars was projected.

**Mileage tax implementation costs:**

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<td>Installation</td>
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**Other Service Station Infrastructure:**

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<td><strong>Total Service Station Capital Costs</strong></td>
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**State System Capital Costs, Including Contingencies**

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<td><strong>Total Capital Costs</strong></td>
<td>$32,801,000</td>
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One of the biggest problems with the program is that people do not feel safe with a GPS unit that has their information translated to the state. They are worried that the government will be able to track them where ever they go. Researches claim that the exact location of a car can not be found; rather they can only get a rough idea of where they are at. The government needs the capability to know approximately where a car is at because they plan on charging different amounts for different zones and the state will not be able to charge drivers a mileage tax outside of Oregon. It was recently in the news that a school, who issued laptops to kids, was using them to spy on them when they were at home. There have been reports that some kids were seen while they were undressing. Situations like this have people worried that “big brother” is watching.
Unlike the gas tax, the mileage tax does not encourage people to get gas efficient cars. It
does not matter if you drive a F450 gas hog or if you drive a Honda civic. This is counter
productive to the direction that we as a society should be headed. However, I believe that
people do not buy a fuel efficient car just so they can pay less in gas and avoid additional
gas related taxes. It might be a factor that is considered rather than being the determining
factor of getting a more fuel efficient car. Another counter argument is that it would be a
fairly easy to charge different cars different prices. Vehicles are already being charged
different prices depending on the zone that a car is in.

If Oregon is the only state that decides to make the full system switch from the gas tax to
a mileage tax, it is problematic to have other state drivers (who will not have the GPS
unit in their car) coming here because they will not have to pay the tax. This would be an
issue because the majority of the reason that the switch was made from the gas to the
mileage tax was to have a more equitable way of taxing those that were using the roads.
The other issue that the state has to deal with is the possibility that Oregon residents that
live on the border could potentially fill their gas tanks in another state and avoid the tax
all together. And yet another issue is that there is such a large population of
Washingtonians that commute to the Portland area because of the lower cost of living /
housing in the Vancouver area. It would be confusing and problematic to only have the
mileage tax program in the state of Oregon.

**Conclusion of the Mileage Tax**

I believe that the mileage tax is a good alternative to the current gas tax method. A lot of
the current problems could be fixed and made easier for the consumers. The two major
problems with this method is that people might not ever be comfortable with the government installing GPS units in their car and I do not believe that this new method can be implemented one state at a time. It is going to require the whole country to implement this new form of paying the gas tax. There are too many issues related to driving in different states to only have this program in select states. There will also need to be a lot of support for the program to get jumpstarted to help offset the initial start up costs. Once this happens I believe this will be a successful program.

Other Solutions

Increasing the Gas tax

Clearly it is possible to simply increase the gas tax. This would prove to be an easy solution to the government’s problem. Although this plan would allow the government to collect additional revenue to pay for its rising costs, it would not fix the equitable problem and I believe that it would make people even more upset that gas prices would increase yet again. Even though people will most likely use the same amount of gas regardless of the price, increasing taxes is often something that the public does not support. Increasing the cost of gas also dampens the economy since a majority of our economy’s goods are transported via semi trucks. The higher gas prices will be passed on from the companies to the consumers because the prices of goods will increase. For all these reasons listed above I believe that this policy would not be effective.

Toll Booths

Toll booths are something that Oregon does not use at all. Only about half of the states in the US used toll booths to collect revenue in 2005. Most states like California on the
other hand uses them fairly frequently where traffic gets very congested, such as in the Bay area on highways or bridges. When you look at Oklahoma, the state that has the closest land area and population to Oregon collects about half the amount of toll revenue compared to motor fuel taxes (http://www.taxfoundation.org/research/show/22438.html). Most people are opposed to toll booths because they believe that it slows traffic down. As I have seen in California, such things as “fast passes” exists for those people that drive on a highway consistently. Instead of having to stop, some sort of device charges the driver as they drive past the toll booth. The other benefit is that toll booth can encourage people to drive less (or use an alternative route) by charging higher premiums during rush hour. Toll booths also encourage people to carpool which reduces both pollution and traffic. The downsides of toll booths are that it can be costly to implement and potentially running them if the fast passes idea is not enacted.

**Final Conclusion**

It is evident that each alternative method has their pros and cons. I believe that the government will change to some sort of different method to collect driving related taxes (even if it is just increasing the gas tax) because they are not receiving the necessary revenue to operate. In the event that the government decides to go with the mileage tax, I believe that it cannot be a state by state decision. I think it is going to take a national movement for it to be effective. My personal belief is that we should stick with the gas tax because it is currently in place, but I think we should add toll booths to major highways. I believe that these toll booths would be easy to construct, easy to maintain,
they would raise enough revenue and they would not be a big hassle if the fast pass ideas were incorporated. This would allow everyone to be happy.
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http://www.taxfoundation.org/research/show/22438.html

Auto Related Taxes

January 2011

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Source: ODOT Long Range Planning Unit, 7/2009