The Race for Ethanol Subsidies

Summary

While ethanol is receiving greater attention recently, the federal government has subsidized the ethanol industry since 1978 with tax exemptions totaling over $11 billion and a production mandate through 2012. The vast majority of ethanol is produced from corn which also receives massive government handouts. Although there has been plenty of time for the industry to mature, production is still much more expensive than gasoline, and not as energy efficient. Ethanol production does not help reduce American's "addiction to oil" and might not be as environmentally friendly as was once thought. Moreover, allowing government policy to choose winners and losers instead of the market has suppressed investment in other alternative fuels—including non-corn biofuels—which may have far greater economic and environmental benefits. Instead of supporting the traditional American farmer and reducing our oil demands, ethanol subsidies are a corporate handout to big agribusiness disguised as fuel innovation.

Background

Ethanol may seem like the biofuel of the future, but it actually has quite an involved past. In 1896, Henry Ford built his first car, the quadricycle, to run on 100% ethanol. From all the fuss about flex-fuel vehicles, you might think that they are a new idea. In fact, the first flex-fuel car was built nearly a century ago—the 1908 Model T could run on ethanol, gasoline, or any combination of both.[1] At the time, gas prices were down and ethanol was expensive. Back when we believed in the free market, consumers made the choice to use petroleum. Every time gas prices increase, however, biofuels—and biofuel subsidies—make another comeback.

The energy crisis in the late 1970's spurred the federal government to provide tax exemptions and credits to the ethanol industry. The 1978 Energy Tax Act included a four-cents-per-gallon tax exemption for 10% blends of ethanol with gas. This exemption was supposed to be a temporary measure to reduce US dependence on foreign oil. In the 1980s, Congress raised the rate to 6-cents-per-gallon, and in 1990 the exemption was settled at 5.1 cents per gallon of 10% blends. Ethanol receives more than a 25% break on the 18.4 cents-per-gallon excise tax imposed upon the gasoline industry for more than 25 years. Estimates of lost tax revenue now exceed $1 billion per year. Since 1978, these exemptions have cost taxpayers more than $11 billion.[2]

Efficiency and Cost

Most of the ethanol produced in the United States is made using corn.[3] However, corn is not the most effective ethanol feedstock. Plants with higher cellulose content like switch grass or sugar cane are much more efficient.[4] Brazil has cultivated sugarcane to produce ethanol, and has been successful in producing cheaper ethanol. Corn is more expensive for two reasons. First, it is more land-intensive than sugarcane. Although the U.S. and Brazil make about the same volume of ethanol, the U.S. uses almost twice as much land to cultivate corn for ethanol as Brazil does to cultivate sugarcane for the same purpose.[5] Second, the process of breaking down corn into alcohol is more involved than it is for sugarcane. These difficulties increase the cost of producing corn ethanol over sugar ethanol astronomically. Ethanol produced from sugarcane in Brazil is competitive with gasoline when crude oil prices are above $35 per barrel, while ethanol produced from corn in the United States is competitive with gasoline when crude oil prices are above $55 per barrel.[6]

The fuel efficiency of ethanol is questionable at best. In general, fossil fuel based energy is less expensive to produce and burn than energy from renewable sources.[7] A gallon of gasoline has about 125,000 BTUs of energy, while a gallon of ethanol contains about 84,000 BTUs, meaning that a gallon of ethanol contains about two-thirds as much energy as a gallon of gasoline.[8] Even when ethanol is less expensive per gallon, it can still be more expensive to use. At February 2006 prices, gasoline was $2.23/gallon and ethanol was $1.98/gallon. However, once ethanol was converted to a gasoline energy equivalent gallon, ethanol prices increased to $2.75/gallon.[9] These numbers do not even account for the hundreds of millions of dollars in taxpayer subsidies and supports.

In addition to the direct subsidies there is also a 54 cent/gallon tariff on foreign ethanol. This protectionist barrier means that countries such as Brazil which produce cheaper ethanol are discouraged from exporting to the United States, raising ethanol prices for Americans. Even with this tariff, the United States imported 160 million gallons of ethanol in 2004, 86 million gallons of which came from Brazil.[10] This clearly shows that current ethanol policy is focused more on supporting the domestic corn and ethanol industries rather than on providing Americans with cheap and efficient energy and fuel.

Dependency and Environment

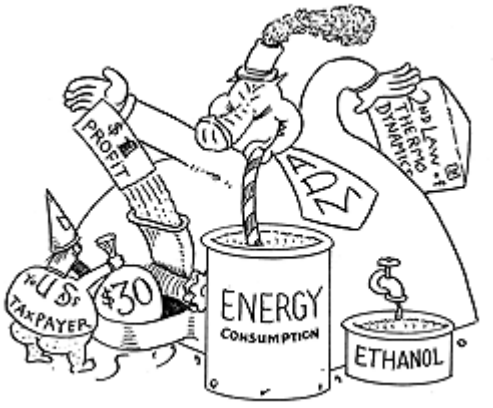
Advocates of increased production reason that ethanol decreases our dependency on foreign oil and helps the environment. However, ethanol does not have any significant impact on the market for foreign oil, and the environmental benefits of ethanol may be offset by the costs of producing ethanol on a large scale.

Ethanol does not significantly lessen our dependence on foreign oil. In 2005, ethanol comprised about 1.2 percent of the world's gasoline supply by volume, and about 0.8 percent by transport distance traveled.[11] This relatively small volume doesn't impact the market in any meaningful way. A professor of geo-engineering at the University of California-Berkeley, Ted Patzek stated that ethanol backers are "playing on human inability to see the scale." He continued that "five years from now with all the ethanol anybody will be able to

produce, the impact on gasoline consumption of all of that is less than inflating car tires properly, just in passenger cars."[12]

Ethanol production and use may damage the environment as much as fossil fuels. According to Worldwatch Institute, biofuels produced on a large scale from low-yielding crops such as corn "have the potential to generate as much or more greenhouse gas emissions than petroleum fuels do".[13] As demand for ethanol increases, more land will be converted for production.

Supporting Big Agribusiness



Most of the rhetoric surrounding ethanol production focuses on supporting the tradition of farming in rural America. In fact, significant economies-of-scale advantages in transportation and conversion of corn into ethanol mean that large companies like Archer Daniels Midland (ADM) take more and more of the market share—and the subsidies. About three-fourths of the ethanol plants being constructed in 2005 were not farmer owned, and several large companies, including ADM, have announced plans to increase their capacity dramatically by building larger facilities.[14] ADM, which controls nearly half of the ethanol industry, is also a large campaign contributor—since 1990, it has contributed over $7.7 million to both political parties.[15]

In addition to the concentration of benefits to large companies instead of small family farmers, there is also a great benefit to a few select crops. Most of the economic benefits to the agriculture sector due to ethanol mandates are limited to producers of corn and soybeans. An estimated 84% of farmers see no benefit from ethanol mandates whatsoever.[16]

Current Legislation

Along with the tax incentives and tariffs, the Energy Policy Act of 2005 introduced a new Renewable Fuels Standard (RFS) which mandates an increase in the use of renewable fuel from 4 billion gallons in 2006 to 7.5 billion gallons in 2012. This has already contributed to an increased demand and use of ethanol. Some argue that ethanol mandates are cost-effective because they reduce government payments in corn subsidies. However, they ignore the tax incentives that the ethanol industry enjoys, and only further the argument that the entire agricultural market is skewed with unnecessary subsidies.

Most renewable fuel used to meet the RFS requirement is ethanol, and most ethanol in the United States is produced using corn. Corn producers are guaranteed a minimum national average price of $2.63 per bushel.[17] While some studies indicate increased ethanol demand will reduce the government payments to corn producers, the 51 cent per gallon tax incentives

that support the ethanol market will more than offset any theoretic "savings" in corn subsidies. These mandates will cost the Treasury Department $5 billion in 2010 and, if they remain in place, more than $15 billion in 2020.[18]

Conclusion

The real question is how ethanol would fare in the free marketplace, without any incentives or mandates. The answer is unclear. According to an article by the Federal Reserve Bank of Chicago, "despite the many analytic tools that economists have to inform public policy, no one…could report that there had been any comprehensive and respectable benefit-cost study conducted to evaluate subsidies and mandates for ethanol production and use."[19] This means that taxpayers are writing a blank check to an industry that has not proven itself in the free market.

In 1896, Henry Ford visualized ethanol as the fuel of the future. This year, the racers of the Indy 500 used E10 fuel. Next year, the Indy racers will use 100% ethanol.[20] Although ethanol proponents would like to think of this as the first leg of the race, the truth is that ethanol has been running on subsidies for over 20 years, with no end in sight.

It could be that ethanol is on its way to becoming a viable fuel, in which case taxpayer funded subsidies and mandates need to be scaled back to let this "infant industry" start walking on its own. To date, taxpayers are supporting an industry that has been struggling for more than 25 years while giving corporate welfare to big agribusiness. The best policy would be to eliminate both subsidies to the ethanol and fossil fuel industries and let the competitive marketplace decide.

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