



The Ethanol Effect

By Andrew Brod

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It seems that everywhere you turn these days, ethanol is being touted as the best way to reduce our dependence on foreign oil. The U.S. Senate recently passed a bill calling for a huge increase in domestic ethanol production over the next 15 years. Auto makers and oil companies run feel-good commercials about their commitment to ethanol. And no leading presidential candidate dares deviate from the gospel of ethanol, thanks to the prominence of corn-producing Iowa in the nominating process.

Yet the public debate about ethanol has been pretty one-sided. We hear a great deal about the potential benefits and very little about the costs. But in economics, there's no such thing as a free lunch. Benefits never come without costs.

The Senate bill calls for annual ethanol production to rise to 36 billion gallons by 2022, up from less than five billion gallons in 2006. Let's set aside the question of whether that's enough ethanol to wean us from an oil addiction that has us consuming over 140 billion gallons of gasoline each year. What are the economic implications of trying to meet the Senate target?

The U.S. Department of Agriculture projects that 12.5 billion bushels of corn will be produced this year. A bushel of corn yields about 2.7 gallons of ethanol, so we'll harvest enough corn to distill nearly 34 billion gallons. However, if we used all of our corn for ethanol, what would we feed our livestock? Where would we get high-fructose corn syrup to sweeten our sodas? It's not an all-or-nothing proposition, but even with increases in corn acreage and yields, the demand for ethanol is already crowding out other corn products.

For years, ethanol's share of corn production hovered around five percent. But since 2000, that percentage has grown. Last year, about 20 percent of the American corn crop was used for alcohol-based fuels, and the USDA projects that it will be more than 30 percent by 2016. Even at 30 percent it's unlikely that we'll meet the Senate's goal using corn ethanol. But perhaps that's just as well, because it'll be very hard to build the necessary distillation and distribution capacity by 2022.

Back in the present, the diversion of corn into ethanol production is raising prices throughout the economy. Last month the News & Record reported that many pizza makers are raising their prices or using less cheese, because cheese prices have nearly doubled since last year. The problem is that milk prices are rising dramatically to keep up with rising feed prices. And feed prices are rising because ethanol production is leaving less corn for feed.

It isn't just cheese. There is upward pressure on food prices around the world. After all, the corn needed to fill your car with ethanol just *once* can feed a person for a year. Some analysts

are beginning to worry that grain will soon be too expensive for poor people. Riots like those in Mexico earlier this year over the high cost of corn tortillas may become more common.

Unfortunately, ethanol may present more problems than solutions. For example, it can't be blended with gasoline in pipelines; it must be trucked separately to distribution terminals where it is blended with gas right before delivery to retailers. More seriously, there are concerns that ethanol produces less energy than is required to produce it. Even if ethanol's net energy balance is positive, the massive subsidies it receives make it hard to be enthusiastic.

You see, the market price of a fuel provides at least a rough idea of the underlying energy costs. Taxes and subsidies can skew that information, but gasoline pays its own way, at least in the minds of consumers. In spite of the taxes that are added to the discovery, refining, and distribution costs of putting gasoline in our tanks, we keep filling up.

In contrast, corn is the most heavily subsidized crop in America. Between 1995 and 2003, the federal government paid over \$37 billion to corn farmers, and that number will only grow as farmers plant more corn to meet ethanol demand. In addition, ethanol distillers receive a subsidy of 51 cents for every gallon they blend with gasoline. And because every gallon of imported ethanol is hit with a 54-cent tariff, domestic producers are protected from the low-cost sugar-cane-based ethanol made in Brazil.

These price distortions make it hard to assess whether our sudden love affair with ethanol is worth the cost. Some estimates indicate that if subsidies were stripped away, a gallon of ethanol would cost 38 cents more to produce than an energy-equivalent amount of gasoline (which is about two-thirds of a gallon due to ethanol's lower energy content).

Ethanol enthusiasts say that concerns over corn ethanol are beside the point, because the real savior will be *cellulosic* ethanol, i.e. ethanol made from cornstalks and grasses. Unfortunately, cellulosic ethanol is years away from being a viable alternative.

If we really care about weaning ourselves from our addiction to oil, we need alternatives that can stand on their own two feet, economically speaking. To this end, we should stop subsidizing ethanol prices and let the market do what it does best, which is to help us consumers sort out costs and benefits. Second, we should eliminate the tariff on foreign ethanol. These measures will make Iowa farmers fighting mad. But it's the only way we'll ever know for sure whether domestic ethanol, whether made from corn or cornstalks, is the real deal or just the latest government boondoggle.

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