High Crop Prices, Ethanol Mandates, and the Public Good: Do They Coexist?

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High Crop Prices, Ethanol Mandates, and the Public Good: Do They Coexist?

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The U.S. Department of Agriculture recently released estimates that tell us the nation’s farmers are responding to high corn prices by planning a 15 percent increase in their corn acreage. If these intentions translate into actual plantings, and if growing conditions are at least reasonable, then 2007 corn production will be more than sufficient to meet all demands, and corn prices should moderate. Lower corn prices would be good news for livestock feeders and ethanol plants because their profit margins would be greater than either expected.

But a record 2007 corn crop may provide only one year of respite from tight margins. Corn use by ethanol plants is projected to increase by 1.7 billion bushels in 2007 and by at least another 900 million bushels in 2008. Corn acreage in 2008 will have to increase by at least three million acres above 2007 intended levels just to keep up with demand. If crude oil prices remain high, and we do not change federal biofuels policies, then U.S. corn-based ethanol production will likely rise to 14 billion gallons within five years. This level of ethanol production combined with other demands for U.S. corn will induce U.S. farmers to produce about 14 billion bushels of corn. The only way that this level of corn production can be sustained is with high corn prices.

Crop farmers should enjoy unprecedented income levels for the next few years if the weather cooperates. This boom time for crop farmers will increase land rents and land prices, so people who own cropland will obtain the lion’s share of benefits (see the article on land rents on page 6 of this issue).

In contrast, hog, cattle, dairy, and poultry producers will find persistent high feed costs and tight margins. Eventually, livestock, milk, and egg prices will have to rise to cover the higher costs. This price increase will only come about through lower production levels.

High corn prices, combined with demand saturation once ethanol is blended at a 10 percent level throughout the country, should eventually stop investment in ethanol plants. Investment will only start again if government policy mandates greater ethanol use or the nation’s car fleet becomes capable of using blends of more than 10 percent ethanol.

There is a growing backlash against our current set of ethanol subsidies among environmental advocates. Ethanol’s environmental friendliness has been attacked because of the amount of energy it takes to grow corn and to produce ethanol. And expanded corn production could negatively affect soil and water resources as farmers till more acres and take land out of the Conservation Reserve Program and the Wetlands Reserve Program. Intensification of production could also lead to larger nutrient and soil losses, as farmers attempt to increase their yields.

Do the higher food costs, higher land prices, environmental losses, and a smaller livestock industry associated with increased corn-based ethanol make any sense? Are the benefits of increased ethanol worth the costs? Most politicians in Washington view the trade-offs as being worthwhile, as evidenced by a push for ever-higher biofuels mandates.

However, as with all policy decisions, it is instructive to pause and consider exactly what we are trying to accomplish with our biofuels policies. What are the benefits from increased biofuels production? Will our current set of policies obtain these benefits at the least cost, or would an al-
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ternative set of policies be more efficient? And finally, do the costs exceed the benefits?

Benefits from Biofuels
There are two primary public benefits from increased production and consumption of biofuels. The first benefit is that using biofuels instead of fossil fuels can decrease the rate at which greenhouse gases (primarily carbon dioxide) build up in the atmosphere. Carbon dioxide is emitted from both biofuels and fossil fuels, but atmospheric carbon is used to grow the plant material used to produce biofuels, so net emissions of carbon dioxide are lower for biofuels than for fossil fuels.

The magnitude of the net gain is lower than one might expect for corn-based ethanol because corn does not grow from photosynthesis alone. Fossil fuels are used to produce the diesel fuel, pesticides, fertilizer, electricity used to pump irrigation water, and propane that are used to produce and deliver corn to ethanol plants. The net gain is further reduced by the energy used to run an ethanol plant and to dry distillers grains. Most studies conclude that ethanol produced from current plants does reduce net greenhouse gas emissions, but the magnitude of the gain is smaller than what many would hope for.

The second benefit of biofuels is increased energy security. There are sound economic reasons why the United States should focus on energy security and not strive for energy independence. After all, our fellow NAFTA members, Canada and Mexico, are our two largest energy suppliers. They can produce and sell us energy for far less cost than we would be paying for energy if we decided to shut our borders to energy imports. However, the United States and other countries are vulnerable to supply disruptions and price shocks. This vulnerability would decrease if biofuels and other alternative energy sources made up a larger share of our total energy usage. Thus, increased use of biofuels as part of an energy diversification strategy may make sense from a national security perspective.

Few would disagree with the idea that reducing greenhouse gas emissions and increasing energy security are goals worth some sacrifice. The question is whether current policies will actually achieve these twin goals.

Are Current Policies Appropriate?
There are a number of federal policies that encourage increased production and consumption of biofuels. Foremost among these is the 51¢-per-gallon ethanol tax credit given to fuel blenders who use ethanol in their blends. Adequate competition between blenders will result in this tax credit being largely reflected in the price paid to ethanol producers, thereby increasing the profitability of ethanol plants. This increased profitability then leads to higher production levels than would otherwise be the case.

Because the fuel tax credit encourages production, it leads to increased diversification of energy sources. Fourteen billion gallons of ethanol represents about 10 percent of U.S. gasoline consumption on a volume basis. If oil prices rise significantly higher than current levels, this contribution of corn-based ethanol could double. Therefore, we can conclude that current policies do lead to an increased diversity of energy sources. The displacement of gasoline consumption with ethanol reduces greenhouse gas emissions. So we can also conclude that the fuel tax credit does lead to lower net greenhouse gas emissions.

The fact that current policy increases energy security and reduces greenhouse gas emissions does not imply, however, that we cannot do better. History has demonstrated that policy objectives
Future policies will eventually be more neutral if the United States becomes serious about increasing energy security and lowering greenhouse gas emissions. These new policies will likely favor midwestern corn-based ethanol plants much less than do current policies. Rather than the 51¢-per-gallon ethanol blenders credit, we could see a BTU tax credit for which any alternative energy source could qualify. Rather than offering no additional incentive (other than direct cost savings) for reducing energy use in producing ethanol, those ethanol plants that achieve higher net greenhouse gas emissions could have a competitive advantage. Rather than placing a steep import tariff on imported Brazilian ethanol because it is not homegrown, we could welcome the fuel as an energy-diversifying, greenhouse-gas-reducing fuel.

Ethanol proponents need not fear such a future. The incredible expansion of corn-based ethanol demonstrates that agriculture can contribute meaningfully to a future based more on renewable fuels and less on fossil fuels. Current plants and those soon to be constructed will continue to generate returns to their owners and to contribute to reductions in greenhouse gas and energy security. However, more neutral policies will change the competitive environment for new investments. It is time to develop strategies for how agriculture will compete in a new environment of open competition for incentives offered to reduce greenhouse gas and enhance energy security. It may well be that corn-based ethanol will play a major role in such an environment. But supporters need to begin thinking about the steps they can take today to ensure that agriculture remains a competitive provider of alternative fuels in an era in which policy is much less tilted toward corn-based ethanol.◆