

Policy Pennings by Daryll E. Ray & Harwood D. Schaffer

## Farmers had a major role in jump-starting ethanol-based increases in corn demand

In their IFPRI Research Monograph, "Reflections on the Global Food Crisis: How did it happen? How has it hurt? and How can we prevent the next one?," Derek Headey and Shenggen Fan examine the various potential causes of the 2006-2008 run-up in the price of agricultural commodities. They assert that, as a result of the decline in real food prices between the peak of the 1970s crisis and 2005, "rich and poor governments alike...saw little need to invest in agricultural production, and reliance on food imports appeared to be a relatively safe and efficient means of achieving national food security."

Then came the surge in the price of agricultural commodities beginning in the fall of 2006 and the continued high prices since then. As a result, Headey and Fan write, "needless to say, the stability and effectiveness of the world's food system are no longer taken for granted." In their monograph they assess "existing explanations of the crisis" in order to identify the most important, with an eye toward proposing solutions that would, in their view, prevent a repeat of the crisis in the future.

While Headey and Fan are willing to accept the idea that falling real prices resulted in declining investment in agricultural production, they do not find that these shrinking real prices caused the crisis as the result of "productivity decline and falling research and development" in the agricultural sector. We agree with much of their analysis but would point out that they ignore two important areas of investment in grain and oilseed markets.

First, though governments may have reduced the relative size of their investment in agricultural research, private investment in farm chemicals and genomics has been booming. As a result, yield levels in major exporting countries have continued to trend upward at relatively the same average annual rates for periods that cover recent decades as the yield growth rates in the 1960s and 1970s.

While it is true that agricultural yields and output faltered in many developing countries because the World Bank and International Monetary Fund ill-advisedly shutdown public extension, credit and marketing services, the anticipated yield plateau in major grain producing countries never flattened out. It is hard to know how long yields will continue their upward paths, but for now the movement is unabated.

Despite the fact that Headey and Fan engaged in an analysis of investment on the supply side, they

ignored the impact of investment on the demand side.

Even though crop farmers experienced extended periods of "low" prices prior to the price run-up in latter half of the 2000s, farmers' supply response to those prices did not result in market self-correction. Given the "sunk investment" in land and machinery that saddles farmers with high fixed costs, crop farmers have little choice but to continue raising grains and oilseeds in order to cover at least part of the costs that remain whether they grew something or not. Contrary to the expectations of the proponents of the 1996 Farm Bill, farmers did not-and could not-respond to lower prices by materially reducing total crop production in a timely fashion.

With production locked in at an increasing rate-the result of the investment in technology by the increasingly integrated farm chemical and genomics industry-farmers had only one direction in which they could turn, demand enhancement. Though there were hungry people in the world, effective demand for their product was primarily limited by the rate of population increase.

As a result, the various grain and oilseed promotion boards at both the state and national levels, began throwing all they had into identifying non-food uses for their dirt cheap commodities. The goal was identify potential uses of their commodities that would increase the utilization of their plentiful crops, and thus lift prices out of the basement.

Soybean promotion boards invested in research in everything from bio-diesel to the use of soybean oil for dust control on unpaved country roads, to soy ink, to resin-based countertops. Corn promotion boards invested in research in the use of corn to produce bio-degradable clothing fibers, to increased use of high fructose corn syrup, to products made from corn including sunscreens and plasticizers.

But the holy grail of investment was in valued-added enterprises that would use the corn locally and increase local employment. The focus was on developing a use that would allow the farmers to benefit not only from increased corn prices, but also give them a share in the profits of the firm using their product. And, ethanol was the product that would do both.

To help jump-start the industry, farmers made

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what seemed, at the time, like a risky investment in facilities to convert their below-the-cost-of-production corn into ethanol for use as a fuel. Not only did they invest in the plants, they worked tirelessly to obtain government subsidies to help develop the industry and enable it to increase the efficiency of the corn-to-ethanol conversion process. They lobbied Midwest legislatures to mandate the use of ethanol in all gasoline sold in their state. They pressed Congress to designate ethanol as a fuel oxygenate.

In short, corn and soybean farmers threw everything they could imagine up against the wall in hopes that something would stick. And what stuck was ethanol.

But it took two events to keep corn-based ethanol from sliding down the wall. Researchers found that the oil industry preferred oxygenate MTBE, a potential carcinogen, was seeping into the water supply. That boosted the fortunes of ethanol's use as an oxygenate in the large California market as the use of MTBE in motor fuel was banned.

The other event was a series of hurricanes in the Gulf of Mexico, including Katrina and Rita, that forced the shutdown of oil platforms and onshore refineries. As a result, the price of gasoline soared, making the existing ethanol plants extremely profitable. And then an administration that had been skeptical of ethanol

became its biggest booster. With the high level of profitability of ethanol plants and new government mandates, an unprecedented influx of Wall-Street-type-of-investment resulted in a sharp increase in the expected amount of corn that would be needed.

The increase in the demand for biofuels, that the report cites as one of the causes of the price spike of 2008, did not happen in a vacuum. One of the impacts of a long period of low prices was the increased investment by corn and soybean farmers in demand enhancement research. Without those low prices, especially prices that were well below the cost of production, the early investment by farmers in the ethanol industry and supportive public policy would have been much slower in development.

In our view the report missed one of the most important impact of the 30-year regimen of declining real commodity prices, it triggered investment in non-food demand enhancement. Ethanol and other biofuels just happened to be what stuck to the wall.

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