

Iowa's Position in Global Agriculture and Bioenergy

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Issue Statement

Iowa has been and continues to be a major agricultural production region. Currently, Iowa is ranked number one in the production of corn, soybeans, hogs, and eggs. Over the past few years, the state has added ethanol production to its list of number one positions. The growth of the biofuel industry in Iowa has been dramatic. Given the increased emphasis on renewable energy sources from both public and private sources, we will likely continue to examine the potential for Iowa's biorenewable resources to fill food, feed and fuel needs.

Agricultural producers stand at the leading edge of the shift toward biorenewable energy. The choices and issues they confront as we progress into this new bioeconomy have economic, environmental, and social implications for all Iowans. A firm understanding of Iowa's current and future position in the global agricultural and bioenergy markets is needed in order to discuss the opportunities and challenges ahead. Educational and research efforts, along with government policies, will need to be targeted to guide the state's progress in the bioeconomy.

Within the last two years, prices for our major crops have set and reset record highs. These higher prices within the agricultural community have been both positive and negative. Crop producers have enjoyed substantial increases in revenues. These higher revenues have spurred producers to increase production. At the same time, livestock producers have been adversely affected by the higher crop prices, which represent the cost of feed. Both crop and livestock producers have faced input cost increases, especially those related to energy.

This paper will outline the historical and projected impacts of higher commodity prices on agricultural producers. We will examine not only the impacts for Iowa producers, but also the impacts on agricultural producers around the world. The United States is not the only country pursuing biorenewable sources of energy. Over 40 countries around the world are actively exploring such programs. The world population continues to grow and with that growth comes the need to provide more food, feed and fuel. The burden for that need falls upon the world's agricultural producers.

Current Situation

The value of U.S. agricultural production had been on an upward trend even before the record highs the last couple of years. Figure 1 shows production values since 1980, broken into crop and livestock categories. Both sectors have enjoyed the long-run growth. But the value growth the last two years has been highly concentrated in the crop sector. The majority of which is due to higher crop prices in the U.S. and worldwide. There are a number of reasons behind the increase in crop prices: strong export demand and a weak U.S. dollar; the growth of biofuel usage worldwide; lower crop production in several countries due to adverse weather conditions; and higher incomes in developing countries.

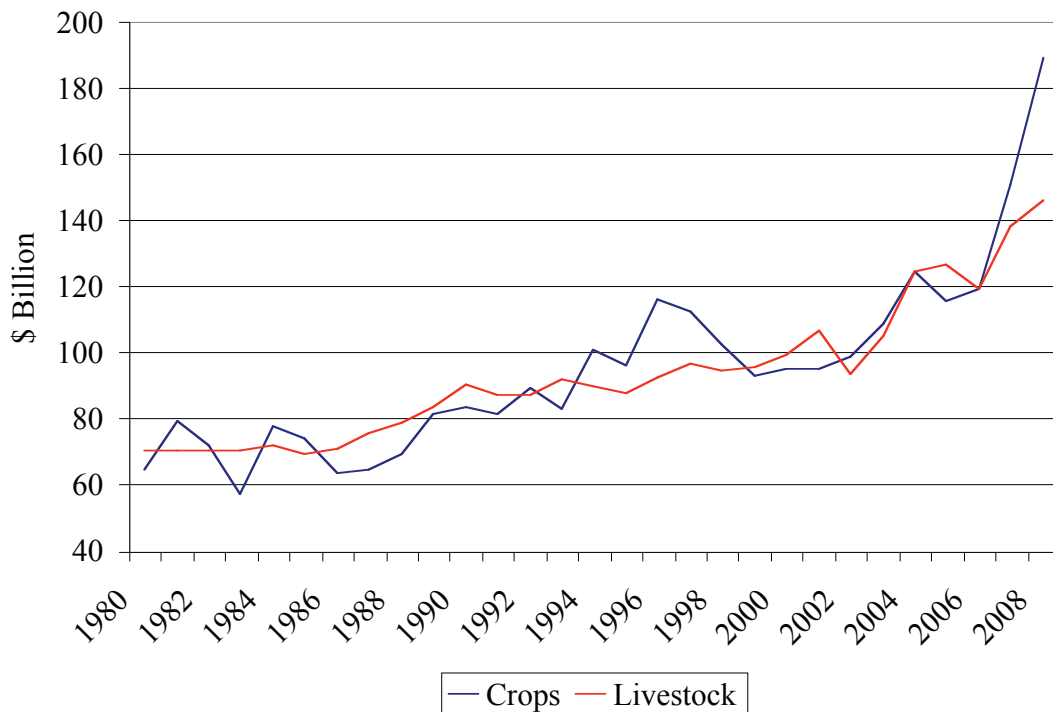


Figure 1. Value of U.S. Agricultural Production. *Source: USDA-Economic Research Service*

But as agricultural production values have climbed, so have production costs. Figure 2 displays the cost of purchased inputs since 1980. Farm production costs have more than doubled in that time, with a sizable portion of that increase occurring within the last two years. The higher crop prices translate into higher feed costs for livestock producers. Fuel costs have risen with higher crude oil prices. Fertilizer costs have increased with greater international demand and higher energy prices. Seed, pesticide, and land costs are also on the upswing.

Net farm income for the U.S. has also been growing. Figure 3 shows both nominal and real (adjusted for inflation) net farm income since 1980. For 2007, net farm income was \$86.8 billion. The most recent estimate for 2008 puts net farm income at \$95.7 billion. For 2008, production value and costs are both expected to increase by at least 20 percent. However, looking forward, there is concern that input costs will continue to rise even if agricultural prices level off or decline.

In the past four years (2004 through 2007), the U.S. has experienced exceptional growth in agricultural incomes. Not since the early 1970s have we seen such a pattern of growth. But as happened after that growth period, production costs moved quickly to bring net farm income back down. This same pattern is playing out now.

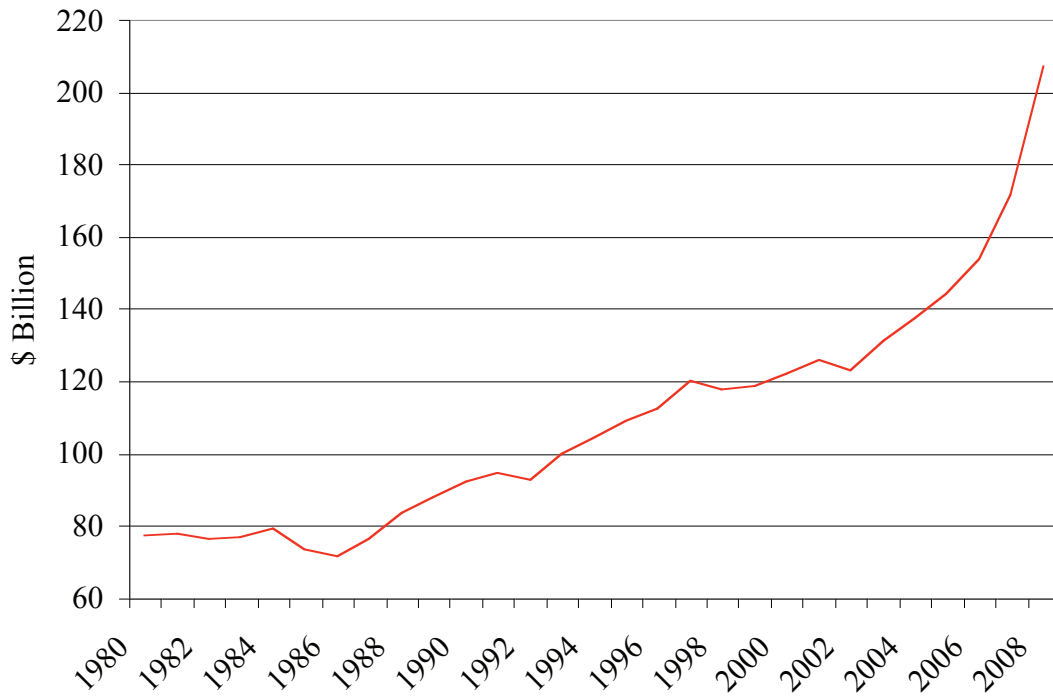


Figure 2. Purchased Inputs for Agriculture. *Source: USDA-Economic Research Service*

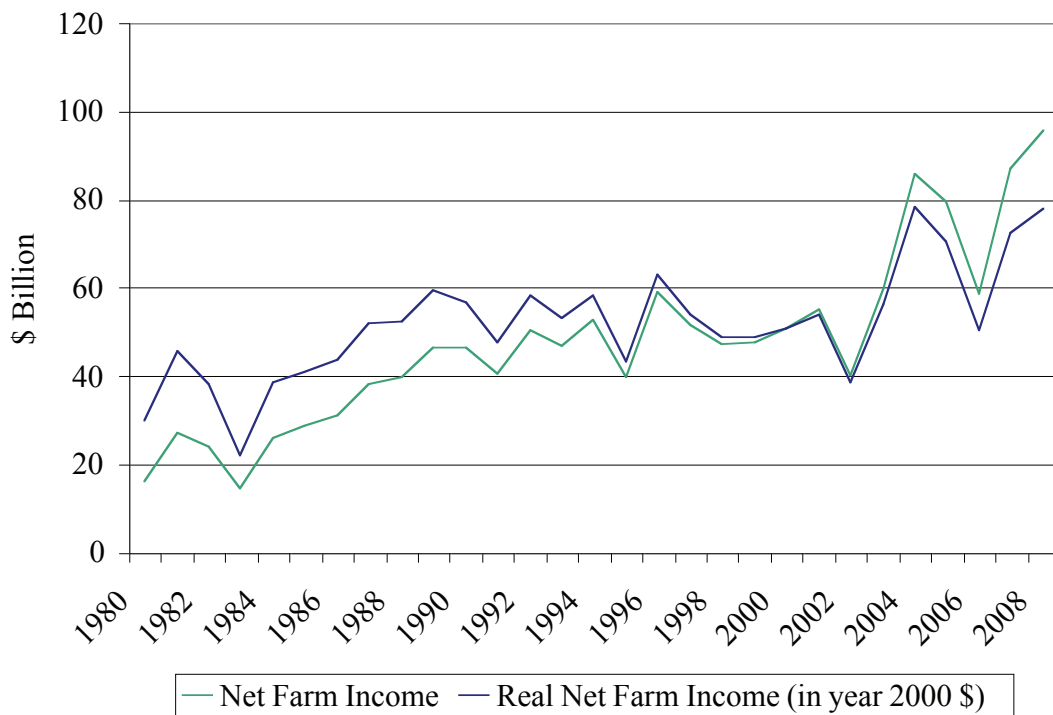


Figure 3. Net Farm Income. *Source: USDA-Economic Research Service*

Agricultural production and values have not only been on the increase in the U.S., but in the rest of the world as well. Figure 4 shows worldwide production levels for corn, soybeans, and wheat since 1980. All three crops have experienced significant production growth over the last quarter-century. If you exclude the U.S. from the world totals, rest-of-the-world corn production has gone up 99 percent since 1980. For wheat, the increase is 63 percent. The increase in soybeans is a phenomenal 1076 percent.



Figure 4. World Production. *Source: USDA, Production, Supply, and Distribution Database*

Discussion

The higher crop prices we are seeing today are building on the long-run production and demand growth trends for agricultural products. Recent projections from the Food and Agricultural Research Policy Institute (FAPRI) show the production trends for the major crops continuing over the next decade (Figure 5). The higher prices foster additional development of agricultural production, both in terms of land (more area being devoted to crops) and technology (more research and development on crop-yield increasing technologies). The incentive to produce more crops also increases competition for agricultural inputs, such as fertilizer and agricultural chemicals. Thus, costs tend to increase as well. The record high net farm income levels we have seen recently in the U.S. will likely erode as costs catch up. The FAPRI projections show real net farm income in the U.S. falling to around \$60 billion over the next decade.

Livestock producers, in the U.S. and worldwide, are dealing with higher feed costs. And with an outlook that shows crop prices not returning to historical levels, livestock producers are adjusting production patterns. In the U.S., we have seen some contractions within the meat sector. Record U.S. net farm income does not imply record incomes for all producers in all areas of the country.

Individual producers still face tremendous risks in agriculture, with the potential for sizable rewards. Both the crop and livestock sectors have built-in demand drivers pressuring price higher as the world's population grows. Projections are that the world will have roughly 9.4 billion people by 2050, 2.7 billion more than today. So food and feed demand will continue to build with population. Energy demand will increase with population also, so energy prices and biofuel demand will likely remain strong.

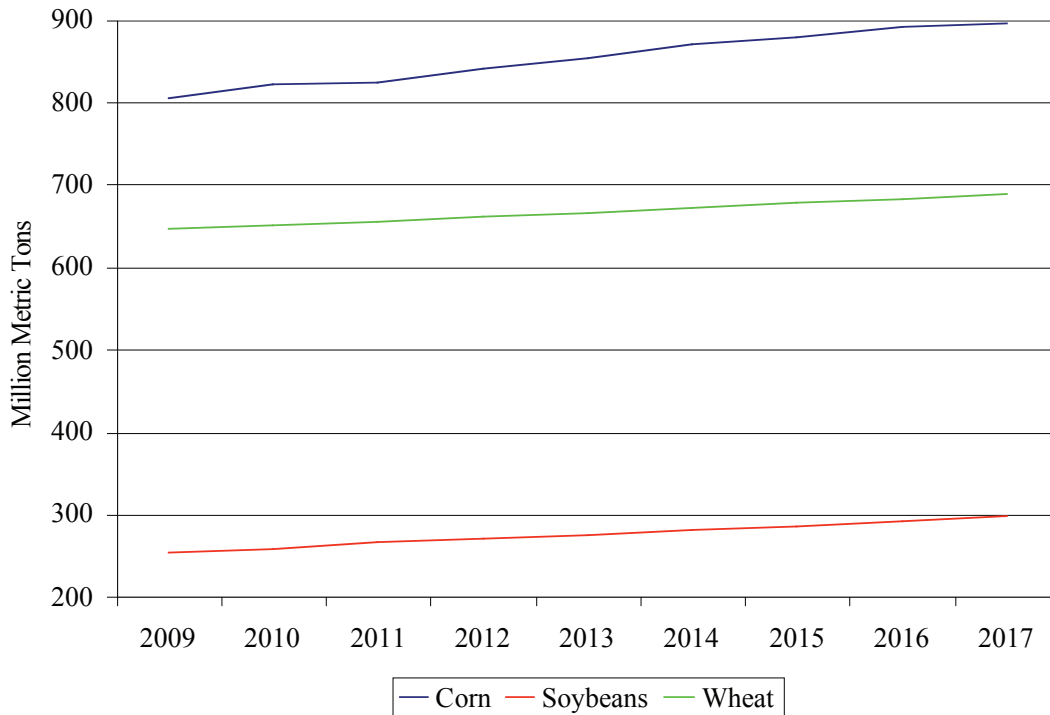


Figure 5. Projected World Production. *Source: FAPRI, January 2008 Baseline*

In reaching to produce the agricultural products needed to fulfill food, feed and fuel demands, agricultural producers are also being challenged to maintain and improve the environmental footprint of their production. More land in production and more inputs for that production imply more possibilities for environmental concerns. In the 2008 farm bill, Congress sought to balance the economic/environmental trade-off by devoting more resources to “working lands” conservation programs. Part of the shift to biofuels has been driven by concerns about the long-run continued use of fossil fuels and the impacts of climate change. The 2007 Energy Act explicitly tied renewable fuels development to reductions in greenhouse gas emissions. Given the growing interest by the general public in environmental issues, agriculture must continue to evolve in production technology in order to increase production and minimize negative environmental impacts.

Summary

Higher agricultural commodity prices are being promoted by several factors: larger populations, higher incomes worldwide, biofuel demand, etc. Over the last 25 years, U.S. and world agriculture has been growing fairly steadily, and the recent higher prices have accelerated that

growth. Much of the recent growth has been concentrated in the crops sector. The higher prices are spurring agricultural crop producers worldwide to increase production to fulfill food, feed and fuel demand. The push for higher production, and the rise in energy prices, puts upward pressure on input costs. Livestock producers have had to adjust to the higher feed costs and that has resulted in some contraction in the sector. Long-run trends in population suggest a continued building of food, feed and fuel demand. Production agriculture is striving to match with increased supply.