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Future Food Scarcities? Global Causes, Local Consequences

October 23, 2008

McNamara Alumni Center

University of Minnesota

Minneapolis Campus

Summary



On October 23, 2008, The Food Industry Center in collaboration with the Center for International Food and Agricultural Policy presented the symposium, "Future Food Scarcities? Global Causes, Local Consequences." Leaders from the food industry, academia and the public sector discussed the causes and consequences of rising food prices and their impact on food supplies, food companies, consumption, health and public policy in the United States and around the globe.

KEY MESSAGES

The extreme volatility of commodity prices and currency exchange rates has made rational business planning very challenging. Planning around scenarios rather than forecasts has become more common.

The long run growth in food demand is more predictable than the supply side. Demand will increase due to rising incomes and growing populations in emerging nations. Multiple uses of food commodities for food, feed, and biofuels will continue to put upward pressure on prices.

The growth in crop yields has fallen from two to one percent since 1990. There will need to be an increased investment in research and development of technology leading to higher yields if rising prices are to be avoided.

There is a potential paradigm shift focused towards resilient production and long-term return. This implies a shift from monocultures and global trade to regionalized "food sheds" integrated with global trade and some local supply. The shift is primarily due to the need to decrease the amount of expensive fossil fuels used in production and transportation.

We use ten kilocalories of energy for every kilocalorie of food we produce. This will not be sustainable in an era of high fuel costs, lower supplies of water, and less stable weather patterns.

Rising food prices can improve the welfare of poor farmers in poor countries, only if they are net sellers of their crops. Many people in poor countries are net buyers of food. Consequently, the recent increase in food prices set back the goal to end poverty by seven years.

The high price of oil played a bigger role in rising food prices than the price of corn and other commodities.

Agricultural production is quite mobile around the world and this mobility leads to a "battle for dirt."

The foodservice industry with 32 percent of their costs attributable to food, has raised its prices and looked for cheaper ingredients, especially protein.

Large food companies are involved in developing food products that will help alleviate third world hunger crises.

Agricultural producers (farmers) are finding that farm policy is becoming trivial compared to the planning that needs to be done around money and finance policy and credit markets.

While there is a need to increase yields in commodity production there are many movements that will decrease yields in the traditional sense: organics, animal welfare concerns, local food, and adaptation to environmental and climate change.





Volatile Food Prices & The Current Financial/Economic Crisis: Causes & Impacts

Ben Senauer, Professor of Applied Economics and Co-Director, The Food Industry Center

Ben Senauer began the symposium by discussing the cause and effect of the current economic situation and its relation to the food industry. The factors behind the rise in food prices as outlined by the Economic Research Service (ERS) can be grouped into demand side factors and supply side factors. The former include (i) a strong growth in demand based on increasing population, rapid economic growth, and rising per capita meat consumption, (ii) a declining stock of food commodities, (iii) a rapid expansion of biofuels production, (iv) dollar devaluation, (v) large foreign exchange reserves, and (vi) importer policies combined with aggressive purchases of imports. The supply side factors, fewer than the demand side factors, include (i) slowing growth in agricultural production, (ii) escalating crude oil price, (iii) rising costs of agricultural production, (iv) adverse weather, and (v) export policies, particularly in emerging countries. Although previous surges in commodity prices were primarily attributable to supply side factors, this time it was driven mostly by demand side factors.

The impact of the recession on the U.S. food industry will likely be felt less in comparison to other industries as consumers eliminate discretionary purchases, but continue to buy food. Foodservice retail, however, will be hit hard because of a shift among consumers to eat at home rather than eating out. Additionally, within foodservice there will be a shift towards the low-price end, i.e. towards fast food instead of casual dining. Given that developing countries are not decoupled from the U.S. and world recession, food exports (commodities or manufactured) will decline and foreign investments could fall sharply.

Globally, the inflation in food prices causes an increase in world hunger. USDA's chronic hunger measure increased by 133 million people in 2007, mostly in low income countries. In the U.S., the middle and low income households are getting squeezed because of rising food prices and stagnant wages- the average household in the U.S. spends 7% of their income on food and households in the bottom 20% of income levels spend more than 20% of their income on food.



What You Know That Ain't So...

Michael Swanson, Agricultural Economist, Wells Fargo Bank

Michael Swanson elaborated on the role of energy as a cause of high corn prices, clarifying that the demand for ethanol was a culprit in the food price hike. More broadly, agriculture impacts food costs, which in turn impacts, and is also impacted by, global economic growth. Furthermore, global economic growth affects (and is affected by) energy, which in turn is an input into agriculture. Recent years have seen compelling trends of economic growth across the globe marked by rising global GDP. In the new, more realistic model, we find that the relationship is two-way - energy is an input into agriculture and agriculture, through biofuels, impacts the price of energy.

Since October 1998, corn (a chief input in ethanol) prices and crude oil prices have both been on the rise with corn almost catching up with crude in 2007-2008. Corn is the largest cash crop that drives the agricultural world, and is a price setter for other crops including soybean and wheat price ratios that have remained stable around the long term price ratios. As a result, the hike in corn prices imply historically high feed costs and record high consumer prices.

Added to the economic pressures was a weak dollar that limited imports and pushed exports. There is no reason for the dollar to be high, since the fundamentals are still the same. The current high valuation is because of the financial markets; this should be temporary. Exporters who are at risk, because their exports are sensitive to the dollar, are exporters of cotton, soybeans, wheat, pork, poultry, dairy, and beef.



Food Price Crisis, Poverty and Agricultural Trade Reform

Will Martin, Acting Research Manager, World Bank

The key issues, around high food prices in the developing world, focus on the impacts of the high food prices on poverty, why different studies that look at the impact of the prices on poverty get different results, and should agricultural and trade policies be reconsidered in the light of food price increases. The dramatic increase in food prices in the last twenty years has mostly impacted rural poverty, which is always higher than urban poverty. Poor farmers do not gain much from higher food prices because they are net buyers of staple food. Net impact depends

upon whether gains to poor sellers are outweighed by the losses of poor net buyers.

A World Bank study of the impact of world price changes from 2005 to 2008(Q1), shows that dollar devaluation and increases in other prices in developing countries reduced the impact of price increases. Additionally, new trade policies, like the export restrictions in Vietnam, lowered prices in many places. The study also implied that a 105 million people had experienced increased poverty, resulting in a loss of 7 years in poverty reduction efforts.

Dr. Martin noted the following outcomes of higher food prices. Most poor people are net buyers of food, and this needs to be studied further to understand the detailed situation of households. In terms of agricultural trade policy, the argument is overwhelmingly for protection, however, protection is generally unhelpful. Protection raises self-sufficiency, but self-sufficiency does not translate to food security. Neither does the taxation of export crops since export crops are usually cash crops. The desirability of price insulation is debated. Although potentially helpful for individual countries, it increases instability for world market. Investments in R&D are very desirable and longer term policies for developing countries should focus on improving technology and increasing investments in R&D and infrastructure. Safety net policies are also very important for poor countries.

PANEL DISCUSSION

Panelists, Applied Economics Professors Paul Glewwe, Terry Roe, and Brian Buhr

Paul Glewwe *(In response to Will Martin's presentation)*



- To address issues of poverty, we need to address what kind of policies can convert people from food buyers to food sellers.
- Looking at policy formulation in both developing and developed countries, what, historically, has determined policy and change for farmers?
- Considering investments in R&D payoff 20 years down the line, it is not likely-politicians will embrace this strategy

Terry Roe



- Our current economic environment is a demand pull environment which can turn around quickly. How are we going to pay off the debt? There is an issue of domestic investment versus foreign savings.
- 1/3rd of world has increased its GDP and people are becoming more like the U.S. How much more potential is there for this trend to continue? We need to understand the global environment of public goods in a integrated market system.

- Considering 60% of U.S. trade goes to 4 countries, sensitivity to exchange rates differs in value added and bulk commodities.
- Why is the U.S. economy robust in energy prices? The credit market is the culprit and not energy.
- Trade is further complicated by genetically modified foods and plants that are restricted in Europe and Africa.



Brian Buhr

- Previously, agricultural commodities have used microeconomic models. Now, macro issues drive food prices along with monetary policy.
 - Going forward, how should decisions be made when there are so many macro and monetary issues?
 - Considering ethanol's impact on the market, we need a magnifying glass to view what is actually happening.
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- On one side of the world, we are making choices to reduce productivity (animal welfare, local foods, etc...), and on the other side of the world, we are looking for macro food productivity.
 - A difficult planning environment has been created because both price volatility and policy volatility must now be considered.
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Foodservice Strategies for Rising Food Prices

Mark Allen, President & CEO of International Foodservice Distributors Association

Foodservice sales have increased greatly in the past four decades, from \$43.8 billion in current dollars in 1970 to an estimated \$558.3 billion in 2008. Foodservice establishments include eating places, drinking places, managed services, hotel and motel restaurants, retail, and vending. The increase is due to aging populations with more discretionary income, a 7% increase in households with total income over \$50,000 from 2003, higher per capita foodservice spending among growing ethnic groups, and busy families looking for convenient dinner solutions.

The foodservice industry is facing many challenges. Among them are consumer confidence and spending as well as health concerns and the perception that restaurants do not provide healthy options. The foodservice sector is also dealing with chain restaurant saturation, supermarket competition, costs and food inflation, credit, legislation, and regulation. In response, restaurants, which make up two-thirds of the foodservice industry and tend to set trends, are looking for cost management and cost reduction opportunities. They are also looking to increase prices where they can or where it makes sense, and offering more value options and limited time promotions. They are reformulating recipes, reducing portion sizes, removing unprofitable menu items, and offering takeout and catering.



Global Commodity Price Volatility Causes, Implications, and Prospects

Wayne Teddy, Corporate Vice President, Cargill, Inc.

In the recent past, price-expanding droughts were followed by price-depressing surpluses. More recently, however, there has been a great increase in prices due to (in descending order of importance) the persistent and unsustainably rapid growth of biofuels such as ethanol and biodiesel, random and coincidental weather disturbances, particularly in 2007, and a brisk food demand growth driven by a strong economy. Global grain stocks are low due to strong demand and shocks to the supply. Consequently, tight stocks have tightened even further, leading to vigorous price volatility.

Resulting implications for the supply chain are higher and more volatile prices, leading to a supply chain that has been profitable, yet dynamic and stressed. Subsequently, budgets of food consumers have been pressured. Consumer demand has been price-elastic and price-reactive, with a defensive cascade to cheaper foods. Furthermore, farm production is gyrating. Finally, governments have intervened in wild and disruptive ways and the risk of contract default over the next year is up significantly.

We need to continue to rely on trade as a tool to increase global food security. Over the long haul, letting the market do the job is better for everybody. Let the market send the right signals, and let everybody respond to those signals.

There are three central questions that will drive the supply chain: 1) Where is the economy headed, credit and finance considered? 2) Where is crude petroleum headed? 3) How will we come to grips with food vs. fuel tradeoffs? Supply chains need to adapt to structural change as it unfolds, food will very likely retain its new coupling to fuel markets.



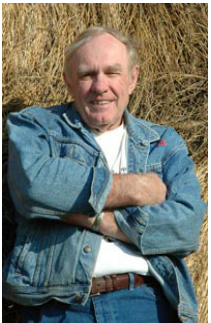
Impacts on Primary Producers and the Environment and Local Foods

Willis Anthony, Agricultural Economist, Crop and Livestock Producer, and 1999 Winner of the University of Minnesota's Siehl Prize for Excellence in Agriculture

Market prices are the signals telling us what to produce, what level of inputs to use, and what kind of inputs to order. In the past several months, prices became very volatile as traders responded to perceptions. At the same time, input prices are up substantially from the 2008 crop to the 2009 crop. This volatility causes huge disorientation in the decision-making process.

Subsequently, we see the very strong likelihood of less-than-optimum decisions being made on production practices, whether it is decisions on which crops to produce or decisions on what kind of input levels we ought to be using.

There is a new set of challenges in the current agricultural environment. An entirely new set of decision makers has been added to the pricing process as we have added index funds and a host of other participants. These participants do not have a fundamental interest in the physical commodity, but an interest in which way the price is going to go. There is a different set of motives and not a very good handle on what we ought to do, if anything, in the way of regulation and oversight of these markets. There is also a piecemeal and disjointed set of policies affecting our basic food production. In a sense, the so-called farm programs are becoming, for many of us, quite trivial in the sense that they have much less of an impact on what affects us, unlike monetary policy, the value of the dollar, exchange rates, etc... Energy and environmental policies are also affecting food supply. Finally, we have not done the research investment that we should have made in food, agriculture, the environment and certainly not in sustainability. Many of the important food production issues are not addressed because they are issues that cannot be readily returned into a profit for the investor.



The Relationship of Food and the Environment: Food as Relationship

Frederick Kirshenmann, Distinguished Fellow, Leopold Center, Iowa State University

We often think of food as a commodity, as a thing. But food is really part of a dynamic web of relationships. We are embedded in an industrial economy and industrial culture. Our industrial economy is focused on a very simple goal: maximum efficient production and short-term monetary return. We need to think in terms of resilient production and long-term return.

There are future challenges ahead to this industrial system. The industrial economy was enormously successful because of cheap energy. Within the next couple of decades we are going to see our energy costs increase dramatically. Next, our industrial food system uses an incredible amount of fresh water. We cannot continue to do this because we are drawing down our fresh water resources across the planet at an unsustainable rate. Finally, one of the reasons that our industrial food system has been so successful is because of the abnormally stable climate of the past century. This abnormally stable climate is not likely to be a part of our long-term future.

We should begin looking to farmers who are making the transition from industrial monocultures (genetically homogenized, uniform farming) to much more complex interconnected polycultures. Polycultures use the biological synergies of a variety of species to produce the energy that is needed to meet their production goals and at the same time are enormously increasing their food production. Instead of just growing one commodity off an acreage, several commodities are grown. Moreover, we need to concentrate on restoring the biological health of the soil because soil is the foundational resource that can solve a whole host of these problems that are related to energy, water, and climate. We could potentially cut our irrigation water globally in half if we restored the biological health of our soil. Research dollars should be devoted to this kind of research if we want get a head start on preparing for the future.

We need to shift from a homogenized global food system to a much more regionalized kind of food system. Consider the concept of a food shed. As we move into the future, our first priority should be to produce as much food as possible by people in the food shed for people in the food shed. The second priority is exporting and importing. The food shed is a much more sustainable kind of concept.

KEYNOTE ADDRESS



Future Strategies for Food Companies in a New World Market

Jeff Ettinger, Chair, President, and CEO , Hormel Foods Corp.

Manufacturers operate in the food world with multipronged missions. Companies need to provide food products that elevate the everyday life of the consumer, whether by bringing convenience to the time-pressed, flavor to the uninspired, or basic sustenance to a world confronted with issues of food scarcity.

Food prices are increasing because of high world demand. In three years, food prices have gone up 83 percent, but the price increase has not been weather-related, as in the past. Supply has been consistent, but world demand has been high. The production of ethanol has contributed greatly to rising food prices. To meet the expected global population growth of 9 billion people in 2050, the world needs to increase food production by 50 percent by the year 2030. Growing economies such as those in Asia are allowing people to afford a more varied diet, increasing demand for meat, dairy, and high-quality grain. Due to the rise in popularity of biofuels, one-third of corn production is going to ethanol and 100 million tons of grain are being redirected annually. Policies that increase reliance on food as an energy source need to be restructured. Alternative fuels that do not pit our energy needs against affordable food and environmental sustainability need to be developed.

Increasing food prices are increasing poverty levels worldwide and affecting U.S. consumers' purchases. An additional 100 million people will drop into poverty this year because of the increase in food prices. In addition, 850 million remain hungry worldwide, and 18,000 children die every day from hunger and related illness. In the U.S., 84 percent of consumers are concerned about rising food prices. Americans are eating at home, buying in bulk, buying sale items, using more coupons and buying less expensive cuts of meat. They want quick, simple, and convenient products. To respond to growing needs and demand for food, companies must find new ways to serve their customers and their shareholders, with both existing products and new products, domestically and internationally, investing more in research and development, and by finding efficiencies.





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