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## *Recognizing Risk in Global Agriculture: A Summary of the 2011 Agricultural Symposium*

*by Jason Henderson, Omaha Branch Executive*

The recent rebound in agriculture's profitability combined with projections of burgeoning global demand for food, fiber and fuel suggest the industry has entered a new "golden era." Still, the glint of banner profits in agriculture could turn out to be fool's gold. While many in agriculture have enjoyed booming profits in recent years, market risks have soared amid high and volatile commodity prices.

On July 19 and 20, 2011, almost 200 agricultural finance and business leaders examined the threats to agriculture's ability to maintain its recent profitability at the Federal Reserve Bank of Kansas City's symposium, "Recognizing Risk in Global Agriculture." The symposium opened by discussing the risks agriculture faces in regard to food and fuel. Participants then explored the

financial health of the agricultural sector and its ability to weather unexpected downturns in profits. Finally, the discussion addressed how agriculture

Yet, new technologies could intensify the competition in agricultural markets and rebalance global food consumption and production.

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was managing risks in a profitable, but highly volatile environment. Despite elevated risks, participants were cautiously optimistic that by applying lessons learned from the past, agriculture can avoid a repeat of past farm busts.

### ***Balancing Global Food Consumption and Production***

With global populations and incomes on the rise, expanding appetites for food have strained global supplies, sparking an agriculture boom.

As noted by U.S. Senator Pat Roberts of Kansas in a video welcome, agriculture's greatest challenge is the ability to produce the food necessary to satisfy global needs. In discussing this challenge, Joseph Glauber, chief economist at the U.S. Department of Agriculture, described how rising food demand in emerging nations has transformed global agricultural trade. In particular, China now is the leading destination for U.S. agricultural goods, especially bulk grains for livestock feed.



Although China presents opportunities, Glauber and other conference speakers identified China as a primary demand risk for U.S. agriculture. Despite rising incomes, disruptions from either a slower economy or trade restrictions are a perennial risk to U.S. agricultural exports to China. The expansion of China's middle class also could shift U.S. exports away from bulk commodities toward consumer food products.

In addition to demand-side risks, future U.S. agricultural profits could shrink if global food production strengthens. In agriculture, the best cure for high prices is high prices. Farmers quickly respond to rising prices by boosting production, which then trims future prices and profits. Glauber noted that by adopting new technologies and agronomic practices, nations in other areas,



## RECOGNIZING RISK IN GLOBAL AGRICULTURE

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such as South America, Eastern Europe, Asia, and Australia, are enhancing their production capabilities. The adoption of advanced agricultural technology through plant breeding, enhanced agronomic practices, and new biological traits promises to boost global agricultural production. David Fischhoff, vice president of Technology, Strategy and Development at Monsanto,

suggested that crop yields could double by 2030 and satiate global food appetites.

Yet to achieve these yield potentials, Fischhoff said a strong partnership between private and public sector researchers is essential. He noted that additional investments are needed to develop the location-specific technologies essential for satisfying the increasingly diverse palettes of global consumers. In addition, strong protection of intellectual property rights is required to disseminate technology, while an equally robust science-based regulatory system is needed to evaluate, assess and approve new biotech traits.

After echoing support for new private/public sector partnerships, Mike Baroni, vice president of economic policy at Archer Daniels Midland, said additional public infrastructure investments are needed in developed and developing countries. Across the globe, investments in roads, railways, waterways, bridges, ports and storage capacity are needed to link growers to global consumers and avoid waste. In 2007, for example, as much as 30 million tons of corn, 20 million tons of wheat and 3 million tons of soybeans

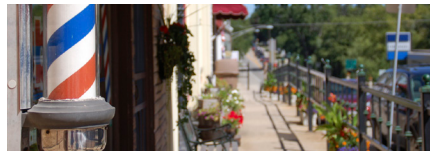
were lost globally after harvest from causes ranging from bad storage to weather contamination, as well as the lack of market access.

Baroni noted that a market environment conducive to agricultural development is central to balancing global food consumption and production. Clear price signals are needed to guide investment and to help market participants manage risk. Baroni said regulatory changes in response to price volatility sometimes can exacerbate challenging market conditions. Public policy could facilitate the flow of food from where it is grown to where it is needed, while trade restrictions sharply limit the flow of agricultural products, even to those who need them most.

### *Overhauling Renewable Energy Markets*

Over the past decade, fuel has evolved into another key agricultural product. By using more than a third of the U.S. corn crop, ethanol has transformed agricultural markets and boosted the price of U.S. crops. Yet, higher energy prices and rising food costs have triggered questions about the economic and political viability of current biofuels policies.

Public policy has been the foundation of the rapidly expanding



ethanol industry. The Renewable Fuel Standard of 2007 mandated the increased use of ethanol from 9 billion gallons in 2008 to 15 billion gallons by 2015. Bruce Babcock, director for the Center for Agricultural and Rural Development at Iowa State University, explained how mandates created the market for biofuels production and how tax credits helped fuel blenders pay for it. With higher crude oil prices, today's ethanol industry has become more market-based, and U.S. ethanol producers responded to higher prices by increasing production above mandated levels. As a result, Babcock found that with crude oil prices above \$100 per barrel, the elimination of policy support would have minimal impact on ethanol production, ethanol prices and corn prices. However, with crude oil prices below \$100 per barrel, the elimination of the mandate or tax credits would slash the profitability of ethanol production and result in lower corn prices. Concerns about ethanol policy tend to ebb and flow with ethanol's profitability.

The prospects of keeping the ethanol mandate, subsidy and tariff have also shifted with the political winds. Robert McNally, principal at the Rapidan Group, described how the

political support for ethanol policy has shifted over time. Prior to 2008, ethanol had received substantial political support among those who identified it as a way to lessen U.S. dependence on foreign oil and reduce carbon monoxide emissions and ground water contamination.

Since then, however, political support has waned. The 2008

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surge in commodity prices sparked a debate about whether crops are best used for food or fuel. The once-strong alliance of the ethanol community and environmentalists frayed as questions emerged about fossil fuel consumption, land-use impacts and life-cycle carbon emissions associated with higher ethanol blending. Today, fiscal constraints in the United States raise additional concerns that ethanol policies are too expensive. With the political debate over ethanol policy heating up, other policy questions were discussed by conference participants. Babcock raised questions about the cost of using ethanol to satisfy non-market objectives, such as the reduction

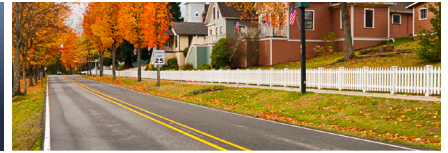
of greenhouse gas emissions, air pollution and the U.S. dependence on foreign fuel sources. Unless additional investments are made in blending infrastructure, particularly flex-fuel cars and blender pumps, ethanol may face a “blend wall,” where gasoline consumption may not need the mandated amount of ethanol. In addition, other technologies, such as drop-in fuels and bio-butanol, which use existing blending infrastructure, may provide an attractive alternative to ethanol. Symposium participants noted that the next round of investments could lock the United States into a path of no return for alternative fuels. As a result, policymakers will need to decide whether ethanol is the alternative fuel source for the future.

***Weathering Unexpected Storms***

Given the emerging risks from food and fuel markets, the symposium next explored the ability of U.S. agriculture to weather unexpected downturns in profits. In recent years, volatility has been a defining characteristic of agricultural markets. Still, despite the increased volatility in commodity prices and resulting fluctuations in agricultural profits and net farm income, agriculture remains on solid financial footing.

In assessing the financial health of agriculture, Paul Ellinger, professor





at the University of Illinois, showed that agriculture has used the elevated but volatile profits to strengthen the farm balance sheet. The farm sector's debt-to-asset ratio has fallen to record lows, and the debt coverage ratio remains historically strong. In fact, Ellinger's analysis suggests a few pockets of the U.S. farm sector—young farmers, large farmers and livestock producers—would be vulnerable to significant financial stress if farm incomes fell 20 percent to 30 percent. Agricultural lenders echoed Ellinger's remarks, noting that their borrowers are enjoying healthy farm finances. Douglas Hofbaur, president and CEO of Frontier Farm Credit, reported that his customers have strong financial balance sheets with high debt-coverage ratios and low loan-to-value ratios on real estate. Jeffrey Gerhardt, president and CEO of the Bank of Newman Grove, Neb. expressed similar sentiments. Today, most farmers have historically low leverage ratios, despite higher production costs.

Given the strength of farm profits, agricultural lending institutions also remain financially healthy with strong capital positions. Agricultural borrowers and lenders have also enhanced their risk management techniques. Agricultural borrowers have increased the sophistication of their operations, enhancing their risk management skills in addition to their marketing and financial management skills. Agricultural lenders also have strengthened their lending procedures by focusing more on the repayment capacity

of the borrower than collateral when making a farm loan and by conducting more stress testing of farm loan portfolios. Most farmers have strengthened their working capital and possess a large collateral base to restructure debt, if needed.

companies can protect themselves and even profit from black swan events, which, though unlikely to occur, have large impacts on economic conditions when they do happen. Knudsen suggested that companies are better positioned to



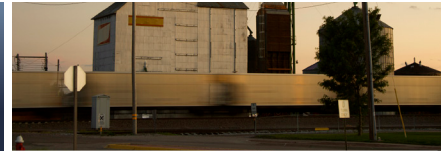
*Nearly 200 agricultural finance and business leaders attended the 2011 symposium.*

With the strong financial health of agriculture, participants noted the intense competition in agricultural financing. In recent years, the bullish opportunities in agriculture have rekindled the interest of investment companies in agriculture. Ejnar Knudsen, portfolio manager from Passport Capital, described how investment companies are searching for ways to control resources and scanning for slow-moving trends that are not priced in the market.

At the same time, the financial crisis has sparked a focus on how

deal with black swan events if they learn to expect the unexpected. This process begins by asking "what if" questions: What if the ethanol mandate disappears? What if the value of the dollar and interest rates rise? What if weather patterns shift?

Conference participants suggested that prosperous times were the ideal time to prepare for "what if" scenarios. In Knudsen's view, agriculture appears to be at the same stage of opportunity as the mid-1970s, when farm incomes were strong, opportunities were abundant



and leverage ratios were low. During the late 1970s, however, agriculture used low interest rates to leverage farming operations and businesses to the point that, when opportunities soured in the 1980s, many in agriculture were not able to withstand the storm.

All speakers agreed agriculture had learned many valuable lessons from its own black swan event three decades ago. The most important principle learned was that working capital is the best hedge against the possibility of extremely bad events in agriculture. Gerhardt noted that, to maintain adequate working capital, *all* agricultural financiers and their regulators must work together to maintain agriculture's financial health during unexpected downturns.

### *Managing Agricultural Risk*



*Participants examined the threats to agriculture's ability to maintain its recent profitability.*

After conference participants acknowledged the importance of recognizing risk, they considered was how agriculture is actually managing risk. In general, agriculture has several tools available to manage risk, including public policy, insurance and hedging in futures markets. The ability and willingness of farmers, agribusiness managers and financiers to use these methods are essential to their effectiveness.

Since the 1980s, farmers' risk management toolbox has expanded beyond increasing working capital. In the United States, the federal government has promoted several innovations in risk management through the support and subsidizing of crop and livestock insurance

programs that protect against production, price and/or revenue risk. In addition, farmers, who are naturally long on grain and short on inputs, are focusing on margin management. They are using hedge-to-arrive (HTA) contracts, futures accounts or over-the-counter (OTC) swaps to manage margins.

As farmers are increasingly enhancing their abilities to use these tools, how attitudes shape the use of risk management techniques is an important consideration, said Michael Swanson, chief agricultural economist at Wells Fargo. Managing risk includes the willingness to give up some upside potential to protect against downside risk. Swanson identified two styles of risk management. Some farmers say they can earn a better financial return by managing risk the traditional way – by maintaining large reserves of working capital. While working capital protects against market downturns, excessive levels of working capital starve the farming operation of investments needed to grow and expand.

Another group of farmers, who tend to be younger or operate larger enterprises, says larger financial returns can be earned by trading away some risk. Swanson finds that these producers focus on managing profit margins instead of managing market gains. For example, many farmers may use futures markets





and other types of derivative contracts to hedge the risk on revenues or costs. Although a well-executed strategy that manages margins can reduce the range of bad and good outcomes, the failure to effectively match production costs with revenues is actually speculation, not hedging.

The market environment shapes the effectiveness of either strategy. As Swanson noted, traditional managers were more successful during the 1990s when commodity markets were less volatile, reducing the need for working capital. During less-volatile periods, traditional managers, who manage risk by boosting working capital, have lower risk management costs. Margin managers, however, have been more successful during the past five years when prices were volatile. In volatile periods, margin managers, who use hedging arrangements to manage risk, do not have higher costs associated with raising additional working capital.

Government policies also drive risk management techniques. Current debates surrounding the 2012 farm bill and fiscal constraints raise questions about the support for publicly funded agricultural risk

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management strategies, such as government farm subsidy programs, crop insurance subsidies and government farm loan programs. In addition, U.S. government subsidy programs

existent for many specialty crops, limiting risk management tools. In addition, risk management tools are not particularly effective in managing policy-based risks surrounding irrigation



*A panel discusses the financial health of agriculture.*

have been challenged by the World Trade Organization. As a result, many agricultural participants are looking at publicly subsidized crop insurance as the primary risk management tool to protect against production and price risk in the future.

In some regions, such as California, risk management tools can be limited. Curt Covington, senior vice president at Bank of the West noted that futures markets and crop insurance programs are underdeveloped or non-

and immigration. As a result, lenders in these markets require higher levels of working capital, increased use of covenants, and enhanced oversight to manage risk. Producers also have increased the use of contracting relationships or partnerships with retailers to reduce market risks. Yet, vertical integration of the agricultural supply chain presents its own set of risks, particularly for the minority partner, as retailers can drive agricultural production practices, especially if they are a monopsony or account for a large



concentration of sales.

In New Zealand, a nation that has dismantled government farm programs, risk management is focused less on hedging strategies and more on governance. Richard Bowman, head of agribusiness at the Bank of New Zealand, described how strong governance is a prerequisite of any risk management strategy. The ability of business management and ownership to clearly identify risks and develop plans and operating procedures in preparation for unexpected events is critical. Combined with a strong and independent board of directors, abundant working capital, strong management skills and preparation for unexpected events are the cornerstone of successful risk management strategies.

### ***Assessing Agriculture's Future***

A closing panel provided a final glimpse of the risks agriculture could face. Bruce Babcock, from Iowa State, felt that China was a fundamental risk, on both the upside and downside. Although stronger economic growth

in China has the potential to fuel higher commodity prices, sluggishness in the Chinese economy could taper agricultural demand and prices. Paul Ellinger, from the University of Illinois, agreed with the importance of China and stated that inflation, interest rates and exchange rates would drive future shifts in commodity prices and agricultural profits. Michael Swanson, of Wells Fargo, highlighted agriculture's policy risks, which include energy, farm, regulatory and trade policies, and how government policies will continue to challenge agriculture on a global basis. All panelists noted that volatility will be a defining characteristic of agriculture and a risk to farm profitability. Agriculture's development of a just-in-time inventory system creates the conditions for highly volatile prices, especially during times of unusual weather patterns.

As the symposium concluded, there was a consensus that the next

few years will be crucial to the future structure of agriculture. Similar to the mid-1970s, booming farm incomes and land values, driven by low leverage and increased food and fuel demand, make agriculture an attractive investment opportunity. Will agricultural history repeat itself and spark debt accumulation similar to the late-1970s? Or, has agriculture learned the lessons of the recent financial crisis and its own debt crisis in the 1980s? As Swanson said, "Why won't agriculture repeat what we had in the 1980s? It is exactly because we are sitting in this room today talking about it and anticipating it." Recognizing risk in global agriculture is the first of many steps in building sustainable profits in agriculture and forestalling future farm busts.