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Farming, Finance and the Global Marketplace: A Summary of the 2010 Agricultural Symposium

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In 2008, surging commodity prices triggered promises of a new golden era for agriculture. While prospects dimmed during the recession, the recovery is rekindling hopes with rising commodity prices.

On June 8 and 9, more than 180 agricultural business and finance leaders examined agriculture's potential at the Federal Reserve Bank of Kansas City's symposium, "*Farming, Finance and the Global Marketplace.*" Participants discussed how changes in the global marketplace are likely to affect the profitability and structure of agriculture.

The symposium began with a discussion of what market fundamentals and policies are driving agricultural profits in the 21st century. After a bullish assessment of higher, but more volatile, profits in the future, participants considered who was in the best position to seize these rising opportunities, and how producers would reshape global agricultural production. Next, agricultural supply chains were investigated in light of evolving global agricultural production. The symposium concluded with a discussion of how the agricultural finance sector would meet the changing financial needs of global agriculture. Participants were optimistic about the future but acknowledged that change will be the common

denominator. As a result, only the most flexible and adaptable market participants will thrive.

ROBUST MARKET FUNDAMENTALS

Market fundamentals are the foundation of agriculture's future. J.B. Penn, chief economist at Deere & Company, laid the groundwork for the conference by describing the demand and supply fundamentals that are reshaping the global market.

Global demand for agricultural products will change in response to new population trends, both in the growth of global consumers and where they live. Penn noted that the world is expected to add more than a billion-and-a-half people over the next 15 years, topping 7.5 billion people by 2025 and 9 billion by the middle of the century. Over 80 percent of the world's population will concentrate in developing countries, especially in the Greater Asian and African regions of the world.

This population boom can boost agricultural prosperity, but only if income gains follow. Penn examined growth projections for world GDP as a way to assess the potential purchasing power of these new consumers. Half of the world's population currently lives on less than \$2.50 per day. As incomes rise, consumers typically spend most

of their added income on food, adding animal proteins in lieu of staple foods.

Penn also sees a new “multipolar” economy emerging. Economic activity will no longer thrive in just First and Third World countries. Several poles of economic activity will develop, becoming extremely important to food and agricultural markets.

Based on these projections, Penn suggested, the world will demand 50 percent more agricultural products by 2030. The investments required

to manage such an increase must cover production, storage, transportation, processing, and distribution. In regions that produce more food than they need—that is, in regions with a food surplus—large investments have broadened research and development efforts. Producers have quickly adopted new techniques to boost productivity growth, especially in the crop and livestock sectors. In food deficit regions, the agricultural and rural sectors have typically been neglected. Very little investment has targeted basic infrastructure, and policies that support agriculture or emphasize trade are lacking.

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concerns mount, the growing challenge will be to shrink agriculture’s environmental footprint.

Despite these challenges, Penn believes agriculture’s potential is great. He pointed to structural changes in some areas of the world that have reduced artificial incentives to produce specific crops. In addition, many emerging

markets are paying closer attention to agricultural development, and just-in-time inventory systems have created more responsive production systems. To be successful, Penn believes, producers must be flexible and keep pace with accelerating

change. Traditionally, over-production has been the scourge of the agricultural industry. With new uses for agricultural products and rising populations, however, tomorrow’s challenge may lie in finding enough production capability to meet global demand.

HIGH VOLATILITY AND FIERCE COMPETITION

Agriculture has often experienced periods of robust markets and intense competition, but globalization and the increased use of financial instruments in commodity markets—also known as financialization—have altered these dynamics of agricultural trade. Globally, producers are using more sophisticated financial instruments to manage risk, heightening potential market volatility. At the same time, financial firms are increasingly relying on agricultural markets to manage portfolio risk, intensifying market competition.

Jorge Carrera, economic research deputy general manager at the Central Bank of Argentina, explored several dimension of the new global picture. His presentation focused on trends in commodity prices, their macroeconomic drivers and the role of financialization in commodity markets. Carrera argued there are three types of commodity market participants: those who base their trades on market fundamentals, those who base their trades on a technical analysis of market prices, and those who switch between these two approaches. Carrera found that portfolio managers who switch their positions can create volatility in the markets. The increased volatility, in turn, causes the agricultural



More than 180 agricultural leaders attended the 2010 Symposium.

On the supply side, Penn suggested that agricultural businesses will face increasing constraints on land, water and labor. As populations swell, global agriculture will need to feed more people better food—with the same or fewer resources. At the same time, as environmental



USDA's James MacDonald

industry to take longer to modify production in response to movements in prices—both up and down.

In this environment, increased global demand for food products also will lead to increased global competition. A primary case in point was offered by Wesley Batista, president and chief executive officer of JBS Swift & Company. The Brazilian-based company, the largest meat packer in the United States, has been rapidly expanding its global reach—particularly in regions of North and South America that lead in global meat production. Several other countries, including Brazil, are developing plans for self-sufficiency in hog and poultry production. Batista also anticipates an increase in Russian meat production but doesn't see the increase offsetting their population growth. Thus, U.S. producers have an opportunity to increase their presence in Russia.

Increased global competition is shifting the production landscape, agreed Patrick Kluempke, executive vice president of CHS Inc. Only a few years ago, most observers would have acknowledged that producers in Western Europe and America enjoyed a significant comparative advantage. Government policies, along with innovative marketing programs and supply channel enhancements, helped producers in these areas maximize their yields per acre. More recently, new regions near the Black Sea and in Brazil, for example, are developing and making quick gains. As productivity gains in global agricultural production continue, the comparative advantage of agriculture's traditional powerhouses could wane.

SIZE, TECHNOLOGY RESHAPE AGRICULTURAL PRODUCTION

As global competition intensifies, major structural changes in agricultural production are reshaping the industry. James MacDonald, chief of the Agricultural Structure and Productivity Branch at USDA's Economic Research Service, noted that much of the structural change has been geographic. Shifts in the production of commodities such as poultry and pork are a prime example, as countries such as China, India and Brazil have ramped up their involvement in these industries. These countries will

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also expand production of feed grains as consumers in the developing world increasingly demand more meat and other high-protein products.

At the same time, production is shifting to larger farming operations with the advantage of economies of scale. MacDonald pointed to a powerful shift in 1982 from small to large commercial farms. Smaller operations (\$10,000 to \$250,000 in annual sales) accounted for 41 percent of all U.S. sales in 1982. Twenty-five years later, they accounted for just 14 percent. Over the same period, large farms (\$1 million or more in sales) saw their share of U.S. sales swell from 27 to 59 percent. MacDonald's review of similar trends for commodities in other developed countries was strikingly similar.

Shifts to larger farming operations, particularly in livestock production, have been driven by both economies of scale and advances in technology. New technologies, ranging from larger equipment to improved genetics and innovative production practices, have allowed larger farms to operate more profitably. These advantages were reflected in their 2008 returns on equity, which reached nearly 10 percent, far outpacing profits by smaller farm operations.

These shifts have also created additional pressures on capital requirements. Producers have been forced to find different ways to access and assemble capital, including

renting land and equipment, sharing ownership, and negotiating production and marketing contracts.

To manage the challenges of shifting to larger operations, many producers depend on productivity gains to gain a competitive advantage. James Borel, executive vice president at DuPont, highlighted how technology has improved agricultural productivity, allowing farmers to produce more food at a lower cost. Farmers will be challenged, though, not only to double agricultural output by 2050 but also to make it available where it is needed. Companies like DuPont are seeking to double the rate of genetic gain in seeds. Developing such new levels of innovation must be done collaboratively, Borel said, because the goal of doubling agricultural output by 2050 poses one of the biggest innovation challenges in the 21st century. One example is the Global Harvest Initiative, created

by ADM, DuPont, John Deere and Monsanto to eliminate the agricultural productivity gap to meet rising world demand.

Geography complicates this looming food gap. As Borel pointed out, we live in a world where global trade and agricultural exports are important, yet 85 percent of our food never crosses an international border. Technological innovations in agricultural production need to be global to get food to the people who need it most.

SUPPLY CHAINS MUST ADAPT

With all of these shifts in global agriculture, production will also require new investments in the supply chain. William Wilson, distinguished professor at North Dakota State University, focused on logistics and supply-chain management. Wilson argued that agricultural businesses are increasingly investing in infrastructure because they realize that future profitability depends on the supply chain.

Global competition has spawned efforts to create new

ways to manage supply chains. As an example, Wilson pointed to economies like that of the former Soviet Union in the early 1990s, which imported more grain than it exported. Today, Russia's grain exports total nearly 40 million metric tons, equal to the grain exports of Canada. This growth has driven investment throughout Russia's interior infrastructure, from farms to ports. Another example is Brazil, whose growth in production agriculture has congested its transportation system. Brazil's current investment plans focus on interior roads, waterways and ports to prevent logistical bottlenecks.

Spending money on infrastructure is important, Wilson argues, but so is finding better ways to use resources already in the system. In the United States, improving efficiency in shipping and logistics would ease pressures on the existing infrastructure. As other countries improve their logistics and infrastructure, the United States will feel pressure to do the same.

If wholesalers, retailers and dealers are to compete in a new global marketplace, they will need to redefine their roles in providing value through the supply chain. From the perspective of Kluempke, successful business models will need to address two basic requirements of the supply chain. First, businesses must build a broader global footprint as customers demand a widening variety of commodity inputs across more global regions. And, second, they must offer risk-mitigation tools to their customers.

A diverse global marketplace will require a new spectrum of business models to accommodate various supply chain structures. For example, input retailers may seek alignment with manufacturers or consolidate further to provide value, while wholesalers and distributors may migrate to a business model based on broker relationships. Regardless of the model, supply chains must evolve to provide greater value.

MANAGING GLOBAL FINANCIAL RISK

Shifts in agricultural production and supply chains will present new financing opportunities with new risks. In turn, agricultural financiers will demand increasingly more elaborate risk-management strategies to finance the

evolving agricultural marketplace.

Wells Fargo agricultural economist Michael Swanson pointed out the challenges and costs of domestic businesses expanding overseas, including the challenge of valuing assets in a volatile environment. Ultimately, he noted, if financiers are not comfortable with the capacity of a business's leaders, they will not be comfortable in financing the business. Simply put, said Swanson, bankers finance people, not balance sheets.

Dale Torpey, president and CEO of Federation Bank in Washington, Iowa, and Kelly Holthus, chairman, president and CEO of Cornerstone Bank in York, Nebraska, echoed these comments. As community bankers in their respective markets, building stronger relationships with customers is how they compete with larger agricultural financiers. While community banks see emerging opportunities in agriculture, Torpey and Holthus agreed that individual community banks will be challenged to meet the financial needs of large farming operations. Holthus suggested that community banks may find themselves partnering with other lenders to meet the financial needs of some farming operations.

Community banks will face competition from foreign businesses actively expanding in this country and bringing their financing with them. Swanson believes many foreign firms view the United States as the premier global market for agriculture. Given U.S. infrastructure, production trends, population and economic activity, many foreign investors may see opportunity here. Foreign banks specializing in agriculture will follow in their wake.

Tony Arthur, head of agribusiness at the Bank of New Zealand, reiterated this perspective. His bank is one of the many foreign financial companies that have penetrated the U.S. market. United States agriculture will need more equity capital going forward, he believes, as well as traditional debt capital. Vertical integration and consolidation will require an equity-based financial model reinforced by the higher standards needed to obtain debt capital from a global banking system that is still shy due to the financial crisis.

Doing business globally has a strong appeal, Swanson said, but the market will be volatile and changing. How an organization deals with change is more important than how well it is optimized. Swanson pointed out that over

the last quarter century, success in volatile environments has required adaptability, flexibility, and liquidity.

Doug Stark, president and chief executive officer of Farm Credit Services of America, said lenders must consider volatility as carefully as producers. Agricultural lenders must scrutinize the income statements and balance sheets of agricultural businesses and farmers. While agriculture is expected to prosper in the future, he cautioned that risks emerge from the tails of the distribution, not the averages.

Such volatility increases the need for solid risk management practices—among lenders and borrowers alike. Stark noted that growing, successful institutions must do more than manage individual borrower credit risk and measure institutional return on equity or assets. They must also determine economic capital at institutional levels and measure risk-adjusted returns on capital at the individual borrower level.

William Lapp, president and founder of Advanced Economic Solutions, sees risk management as a persistent challenge throughout the supply chain. In industries such as beef packing, market risk has shifted from individual producers to entities that are more capable of managing that risk. Economic and business lessons from the past, said Lapp, emphasized that success depends on being a low-cost producer. In the current climate, success also favors those with a good grasp on managing risk.

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CHARACTERISTICS OF THE FUTURE MARKETPLACE

After two days of discussions among industry leaders and researchers on issues of agricultural profitability, structure and financing, Purdue University distinguished professor Michael Boehlje offered his perspective on the fundamental themes shaping agriculture. While most speakers shared a positive long-term outlook, Boehlje cautioned that “unanticipated surprises” can dramatically alter the industry. He echoed the view that consolidation and concentration will change the entire value chain, touching producers, who they do business with, and how business will be done.

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Boehlje stressed that eight characteristics will reshape the agricultural marketplace in the 21st century:

1) *Capital market challenges*: The cost of capital in the industry can only increase. Inflation will eventually rise, given the increase in the global money supply. This condition will shape capital investment among producers.

2) *Resurgence of risk*: The most relevant risk is margin risk, not price risk. At the same time, conventional tools to manage operation risk will be much less effective. In this scenario, financial management strategies are more critical than ever for successful risk managers.

3) *Growth, consolidation and structural change*: Structural change will inevitably continue, but it will be unstable. As with other industries that have gone through significant vertical ownership structures, once the supply chain functions efficiently, some chains return to more open market arrangements with tight strategic alliances between buyers and sellers.

4) *The sustainability imperative*: Two important questions will arise concerning agriculture’s environmental footprint. How will the industry respond to increasing demands and expectations from the retail end of the food chain regarding the environment? And, how will the industry shape this debate so sustainability is not just about cost but instead on how value could be created?

5) *Resource availability and productivity*: While land constraints have long been recognized, water availability will become an even greater issue, challenging producers as they fulfill global demand.

6) *Innovation and technology*: The intersection of three technologies—nutritional biotechnology, information technology and process-control technology—will move agriculture from an industry that grows commodities to one that can biologically manufacture specific-attribute raw materials for unique end uses.

7) *The role of the public sector*: Government policies beyond the Farm Bill will shape the future of agriculture.



*Purdue University
Distinguished Professor
Michael Boehlje*

Policy issues related to transportation, energy, cap and trade, antitrust and competition in markets will heavily affect the sector. But agriculture is not perceived as a player in those policy-setting arenas.

8) *The bioeconomy*: Agriculture’s future will be as a raw material supplier—not just for nutrition, but for energy, industrial products and pharmaceuticals.

Boehlje summed up his comments and the tenor of the conference by suggesting that the new economy be viewed in three ways. The first view is that agriculture’s environment has become a globalization of products, resources and finance. The second view is that financialization and capital markets are tightly aligned and drive the real world. And the third view is that industry convergence will continue—that is, industries not on agriculture’s radar screen now may be competitors in the future.

In the end, agriculture is entering an era of higher, more volatile profits shaped by new technologies, new market participants and fierce competition. From farming to finance, agriculture has been transformed. Its market participants—from farmers to manufacturers, input suppliers and financiers—are building new business models to take part in a new global marketplace. In Swanson’s words, “In a changing environment, it’s the adaptable that thrive, not the well-adapted.”