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## *Is This Farm Boom Different? A Summary of the 2012 Agricultural Symposium*

*by Jason Henderson, Vice President and Omaha Branch Executive*

**A**griculture is notorious for its cycles of boom and bust. Past farm booms quickly faded as economic and financial market conditions changed. Today, farm incomes are swelling because of record high exports and strong demand for biofuels. At the same time, with historically low interest rates, farmland values have reached record highs. Although these current conditions mirror the past, farmers have hesitated to take on debt in financing new investments, raising the possibility that this time could be different.

On July 16 and 17, 2012, approximately 240 agricultural finance and business leaders at the Federal Reserve Bank of Kansas City's symposium, "Is This Farm Boom Different?" examined whether agriculture can escape its historical cycles of boom and bust. After reviewing the fundamental drivers of past farm cycles, participants explored the prospects for sustained farm prosperity and the key risks emerging in the farm sector. While the future path of farmland values is uncertain, farm leverage accentuates shifts in farm profits and land values. Similar to past farm booms, farm leverage ratios are near historical lows, although debt is more concentrated in a handful of farm enterprises. If farmers accumulate debt and fail

to manage emerging risks, U.S. agriculture may not be immune to another boom/bust cycle.

### *Reflections of the Past*

In many respects, today's farm boom is strikingly similar to past farm cycles. Former Secretary of Agriculture and U.S. Trade Representative Clayton Yeutter took conference participants on a stroll through agriculture's history and emphasized that agriculture's boom and bust cycles are often triggered by events outside of agriculture. For example, farm booms during the 1910s and 1940s were associated with increasing demand during world wars. Shifting trade policies following World War II culminated in the Russian grain deal that sparked the 1970s farm boom. At the same time, low interest rates during the 1910s and 1970s also supported the capitalization of rising farm incomes into farmland values.

These historical similarities were echoed by William Hudson, founding principal of ProExporter. Looking back to the mid-1800s, Hudson outlined how politically driven demand episodes sparked previous farm income booms. Three such episodes have shifted today's agricultural commodity demand: the rapid expansion of Brazilian sugarcane production, U.S. ethanol production, and Chinese



imports of corn and soybeans. These demand sources use the land required to produce 18.5 billion bushels of corn, roughly 1.5 times the annual U.S. corn production. In addition, grain used for U.S. ethanol production and Chinese imports accounted for a 28 percent increase in world crop production during the past decade.

Similar to past farm booms, surging demand has driven crop prices, farm profits and land values to record highs. Hudson reported that U.S. net returns to corn and soybean production surged between 2010 and 2012, topping \$30 billion per year, well above the 1970s farm boom. Rising incomes have translated into the strongest U.S. farmland value gains since the 1970s farm boom. For example, over the past decade, Iowa's farmland values rose more than 10 percent annually after adjusting for inflation compared to 8.3 percent during the 1970s. Chris Erickson, managing director at HighQuest Partners, showed that farmland values are also rising globally as population gains surge and per capita farmland acres fall.

With surging incomes, farm operators are often still the winning bidders at U.S. land auctions. Historically, farmers have been the primary buyers of farm land during farm booms, despite increased interest from nonfarm investors. According to Jim

Farrell, president and CEO of Farmers National Company, active farmers remain the dominant buyer, accounting for 70 to 75 percent of all sales. Still,

at Purdue University reported that double-digit farmland value gains are outpacing the rate of return to farm operators, which slowed to almost 4

*“Rising incomes have translated into the strongest U.S. farmland value gains since the 1970s farm boom.”*

nonfarm investors remain active in land markets and currently own land. Some of the most bullish are new investors who typically have little knowledge of agriculture but are looking for higher returns on investments.

***Are Current Farmland Values Sustainable?***

Skyrocketing farmland values have raised questions about the sustainability of current market prices. Some have questioned whether a “bubble” has emerged in farm real estate markets. While infrequent, dramatic shifts in farmland prices often reflect shifting market expectations. As a result, “bubbles” only emerge when asset values diverge from expected present values of cash flows.

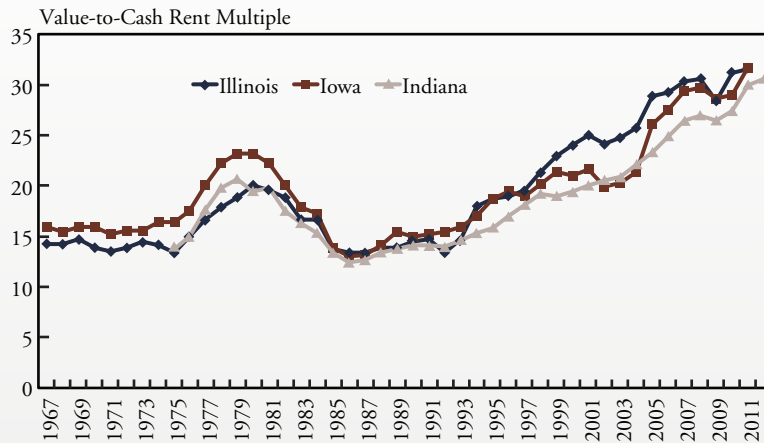
Unfortunately, farmland values are rising faster than farm incomes, heightening concerns about a farmland bubble. Brent Gloy, director for the Center of Commercial Agriculture

percent in 2011. In addition, farmland values in Iowa, Indiana and Illinois have risen faster than cash rents since 2005, increasing the value-to-cash rent ratios. Today, the value-to-rent ratios, which are similar to a price-to-earnings ratio on a stock, have reached a record high of 30 in these states, well above the historical highs of the 1970s (Chart 1).

Surging value-to-rent ratios, however, could be more reflective of the integration of agriculture into broader financial markets and lower capitalization rates than of farm income trends. Net present value theory indicates that asset values should equal the capitalized value of future farm income streams. Capitalization rates on farmland, which are the inverse of the value-to-rent ratio, tend to follow interest rate trends. Since the farm bust of the 1980s, the capitalization rates of farmland in Iowa, Illinois and Indiana



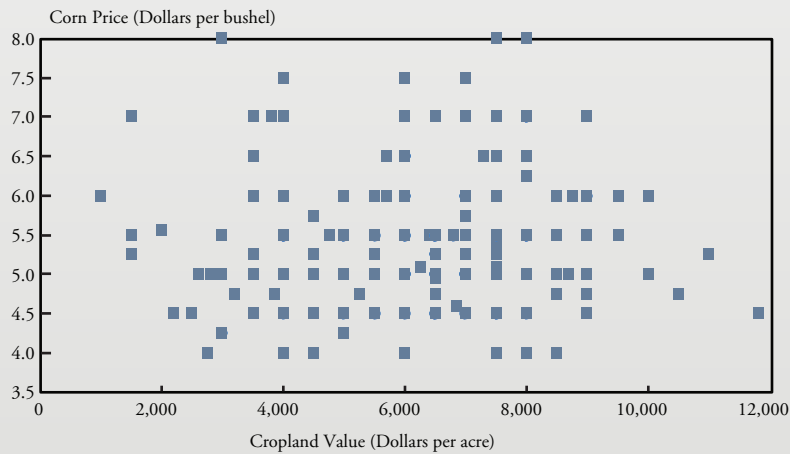
## Chart 1 Cropland Value to Rent Ratio



Source: Gloy (2012)

Note: Illinois and Iowa data compiled from USDA reports and Indiana data obtained from Purdue University.

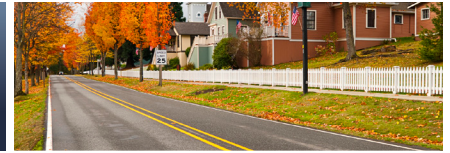
## Chart 2 Indiana Farmland Investor 2012 Expectations of Corn Price and Farmland Value in 5 years



Source: Gloy (2012)

have been declining with the 10-year U.S. treasury. As a result, high land prices and high value-to-rent ratios may be rational at today's cash rents given the current interest rate environment.

Analysis of current land values, cash rents and interest rates, however, does not address the role of expectations in farmland values. Farmland is typically a long-term investment and expectations of future income streams are thought to shape buyers' willingness to pay for farmland. A survey of Indiana farmland investors suggests a weaker relationship between expected farm incomes and land values. To assess expectations of future farm income streams and farmland values, Gloy surveyed Indiana farmland investors on crop prices, cash rents, and land values. According to the survey, roughly half of the respondents thought that farmland prices were in a bubble. Almost two-thirds thought that their estimate of value was less than the price of land being fetched at current land auctions. More than 80 percent of the respondents expected the value-to-rent ratio to remain higher than 20 over the next five years. Moreover, comparisons of investor expectations revealed no correlation between expected corn and farmland prices, raising some questions about whether fundamentals are driving current farmland markets (Chart 2).



***What Do Market Fundamentals Suggest?***

The wide variation of corn and farmland value expectations reflects the uncertainty associated with future agricultural production and profits. Conference participants suggested that the continuation of historically high prices and profits was the most likely outcome for future farm incomes. However, the risks surrounding these projections are sizeable as major shifts

Still, crop profits would remain well above historical averages. Hudson said the total amount of money spent on land, cash rents or mortgage payments could continue to rise through 2020, suggesting ongoing support for higher farmland values.

Throughout the conference, participants noted the tremendous amount of risk, despite today's high farm incomes. In his opening comments, Yeutter noted several areas

pointed to North America (U.S. and Canada), South America and the Black Sea area as three export regions that could boost global crop production. If crop production continues to soar in South America and the Black Sea region as it has over the past decade, rising supplies could weigh on prices. Still, Sterling Liddell, vice president at Rabobank, indicated that volatility would remain the defining characteristic of agricultural markets as capacity constraints and resource scarcity (land, water, energy, capital, etc.) could lead to higher production costs and tighter margins.

Underlying the discussions was an implicit conversation regarding what might trigger a correction in farmland values. Michael Boehlje, distinguished professor at Purdue University, discussed which parts of the net present value model—incomes or interest rates—could initiate a decline in farmland values. Based on Kansas farm income statements and balance sheets, Allen Featherstone, professor at Kansas State University, thought that a drop in income would be the most likely catalyst. In contrast, a panel of farmland market participants indicated that higher interest rates would be the spark for lower farmland values. The challenge is that farm incomes and commodity prices tend to fall in higher interest

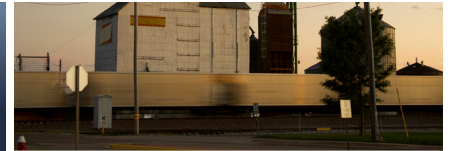
*“... the continuation of historically high prices and profits was the most likely outcome for future farm incomes. However, the risks surrounding these projections are sizeable ...”*

in agricultural demand and supply conditions, in addition to shifts in financial markets, could alter the agricultural landscape.

Hudson projected that crop prices and returns to U.S. corn and soybean production would pull back in coming years as global agricultural production expands. His analysis showed that corn prices would average approximately \$4.75 per bushel between 2015 and 2020 and net returns to corn and soybeans would fall to a third of today's record highs.

of risks, ranging from political (farm policy) and financial (interest rates) to economic (world economic growth). In addition, he identified three wildcards for agriculture—weather, energy policy and biotechnology—that could shape the fortunes of agriculture. Hudson discussed how shifts in U.S. ethanol policy that reduce the demand for corn or a slowdown in Chinese demand for agricultural commodities could lead to lower farm prices and farm profits.

On the supply side, Hudson



rate environments, making it difficult to disentangle the individual effects of these two triggers.

**Who's at Risk?**

In the past, highly-leveraged, indebted farm enterprises faced the most devastating consequences to shifting market fundamentals and corrections in agricultural markets. While debt and leverage can magnify profits, they also magnify losses during farm downturns. Similar to past farm booms, the average U.S. farm enterprise now has exceptional financial health. Yet, today's concentration of debt in some enterprises presents financial risk to U.S. agriculture on the scale of past farm cycles.

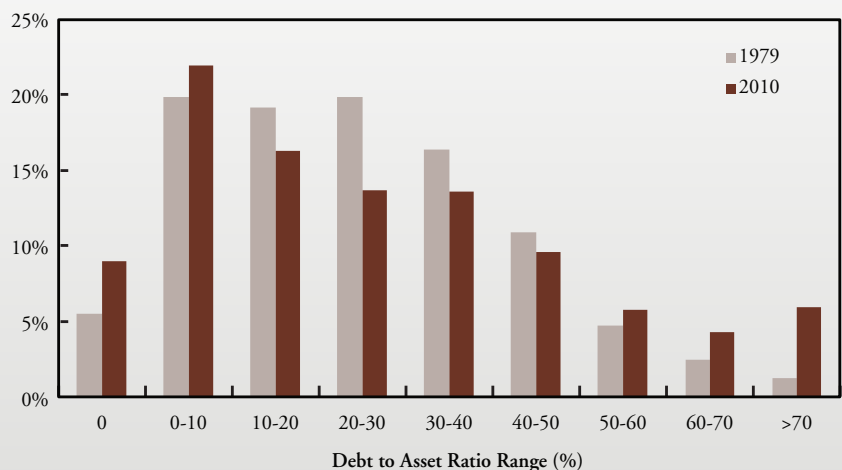
A panel of agricultural lenders highlighted the excellent financial standing of farm enterprises. Edward Cooper, senior vice president at Wells Fargo, reported that liquidity is at a 10-year high as agricultural enterprises retained earnings and limited capital projects in addition to boosting credit capacity and working capital. Darryl Oldvader, chief executive officer at FCSFinancial, also reported historically low farm debt and leverage, which was different from the 1980s. However, Oldvader indicated that debt was more concentrated in larger farming operations that have grown rapidly and livestock operations that are struggling with profitability in recent years.

While leverage in the average farm operation is at historical lows, the concentration of debt is a mounting concern. Using Kansas farm records, Featherstone reported a historically low probability of default for Kansas farm enterprises, similar to the 1970s farm boom. Yet, upon closer examination of Kansas farm enterprises' financial statistics, Featherstone indicated that debt is more concentrated today than in the 1970s. For example, in 2010, almost 6 percent of Kansas farms had debt-to-asset ratios greater than 70 compared to 1.6 percent in 1979 (Chart 3). The concentration of debt raises the financial risk in agriculture.

The financial structure of agricultural loans could help

enterprises manage risk and mitigate losses. Featherstone reported that half of outstanding debt is held in fixed term loans which will limit, but not prevent, cash flow issues. Don Reynolds, chief executive officer of Regional Missouri Bank, indicated that today's use of more sophisticated analysis would help agricultural enterprises manage elevated risks. Still, Yeutter was concerned that agribusinesses were not well positioned to deal with risk in agricultural markets. Although he recognized risk as an important element of the risk-return relationship in capitalist markets, Yeutter thought that agribusinesses need to improve risk analysis and implement better risk management strategies.

**Chart 3**  
**Distribution of Debt to Assets Ratio of Kansas Farm Management Association Farms, 1979 and 2010**



Source: Featherstone (2012)



To manage risk, Liddell indicated that global farm enterprises are likely to follow U.S. consolidation trends. In commodity markets, economies of scale often dominate and consolidation emerges to drive production costs lower. Using China's livestock production as an example, Liddell expected consolidation to be a defining characteristic of agricultural production systems in emerging markets. For example, in 2013, only 30 percent of China's hog production is expected to come from small backyard farms producing less than 50 hogs per year, down from 74 percent in 2001. In addition, by 2015, backyard farms are projected to account for only 7 percent of China's poultry production, down from 70 percent in 2000.

In looking at land markets, Tim Hopper at TIAA-CREF identified three ways farmland investors could manage risk. First, farmland investors should have a long-term focus when purchasing and financing farmland to build a buffer against short-term

volatility in agricultural markets. Second, diversification of farm land investments in other regions can balance weather and production risks. Third, and maybe most important, investors need to have larger amounts of equity in farmland purchases.

Current farmland values have quickly capitalized the expectation that high farm incomes and low interest rates will persist well into the future. Nevertheless, increased risk in agricultural markets raises the possibility of another farm downturn if demand falters, supplies surge and interest rates rise sharply, as they did in the 1980s.

Historically, debt has been the deciding factor in whether a farm boom turns into a farm bust. Agricultural market participants should recognize that leverage exacerbates both ensuing peaks and troughs of cycles. While average farm debt ratios are at their lowest levels since the 1970s, farm debt and leverage is more concentrated in a smaller number of larger farm

enterprises today. In addition, Boehlje indicated that some farmers have a classic imbalance in their balance sheets after they moved assets "below the line," and they have failed to properly structure debt by funding current assets with current liabilities and noncurrent assets with noncurrent liabilities. As a result, working capital, the first line of defense against financial distress, has disappeared for these farmers.

Still, the future of agriculture remains bright. Expanding world incomes, especially in developing nations, generates the demand for agricultural commodities that fuels farm booms. Despite these opportunities, broader market risk and price volatility are defining characteristics of agriculture. As Boehlje remarked, farm enterprises will need to be well capitalized to manage those "bumps in the road" to be a part of agriculture's future.

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