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Will Farm Profits Shift in 2013?

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Despite a severe drought, profits in the U.S. farm sector soared in 2012. Beginning in late June, U.S. crops and pastures wilted under one of the worst droughts in history. Although total farm incomes remained high, the drought exacerbated a widening gulf in profitability between the crop and livestock sectors. Crop producers enjoyed strong profits as crop insurance payments and high crop prices offset shrinking yields. In contrast, livestock enterprises, including poultry and dairy, saw profits evaporate with crippling feed costs.

Income disparity between the two sectors shifted farm balance sheets, lending, and investment activity. With rising crop incomes, farmland values soared higher, boosting farm wealth, particularly for the crop sector. Surging feed costs caused a jump in short-term lending activity, particularly for livestock enterprises and regions heavily impacted by drought. Capital investments were also skewed, expanding more swiftly in regions less affected by drought.

Yet the pendulum of farm profits may be about to swing. Futures markets point to lower crop prices by the end of 2013. While crop profits might shrink, lower crop prices could decrease feed costs and improve livestock finances. If, and how quickly, the pendulum swings will depend on the weather. Given tight global supplies, though, volatile prices could persist.

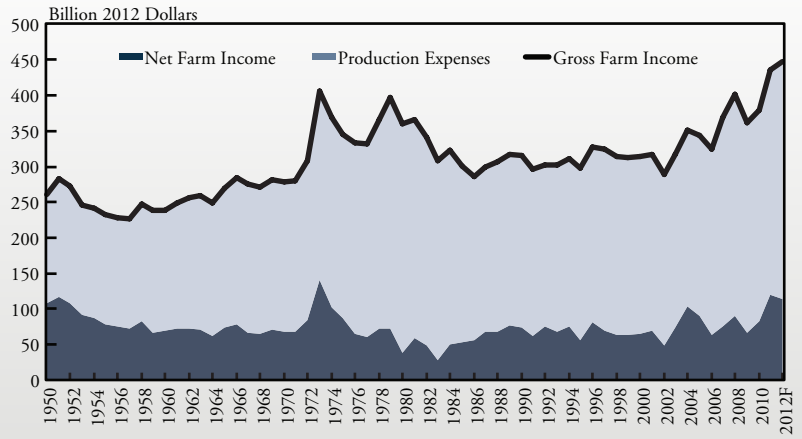
Farm Profits

The drought affected U.S. farm profits significantly in 2012. Although farm profits remained high, profit opportunities were highly varied. For crop farmers, crop insurance and high crop prices largely offset rising input costs and yield losses. Livestock operations, however, faced significant losses due to surging feed costs.[1] Although dry weather affected most of the United States, a few areas avoided the drought's fury and saw incomes rise.

The recent wave of booming farm profits continued in 2012. In November, the U.S. Department of Agriculture (USDA) projected 2012 U.S. net farm income would reach $114 billion, the third-highest level on record, and more than 50 percent above the average of the previous decade (Chart 1). Net farm income dipped 5 percent below last year's mark, though, as production expenses rose faster than gross revenues. Despite low crop yields, high prices pushed gross farm income 2.8 percent higher in 2012. Production expenses rose more sharply, 5.7 percent above 2011 levels, as the drought caused input costs to soar.[2]

Underpinned by strong export demand, U.S. crop revenues remained high despite drought-ravaged crop yields. U.S. crop exports, led by soybean exports to China, remained strong in 2012 even as domestic crop supplies dwindled. The drought cut corn yields more than 25 percent below May projections, and soybean yields fell

Chart 1
Farm Income and Production Expenses



Source: USDA

roughly 10 percent. With steady demand, falling yields caused corn prices to surge more than 30 percent, and soybean prices jumped 23 percent. With a spring harvest that preceded the drought, winter wheat returns provided an additional boost in 2012. Revenue from fruit, nut, and vegetable crops also remained steady compared to a year ago.

Despite higher crop prices, crop profits were limited by higher costs. USDA reported that near double-digit gains in seed costs and rising cash rents pushed planting costs higher. As summer progressed, increasing energy costs raised fuel and irrigation costs. While gross crop revenue rose 4 percent in 2012, net crop profits held at last year's historical highs.

Similar to crop sector revenue, gross livestock revenue rose above year-ago levels. Strong global demand for animal proteins and smaller meat supplies following last year's drought in the southern plains, combined with herd liquidations this summer, kept prices at historical highs. U.S. cattle prices were nearly 40 percent higher than the average from 2005 to 2010, and hog and poultry prices were higher as well. However, livestock prices dipped over the summer as the drought forced producers to cull herds and flocks, temporarily oversupplying markets. The additional sales were projected to lift gross livestock revenues 1.8 percent in 2012.

High feed costs, however, outstripped revenue gains and slashed livestock profits. After spiking 20 percent in 2011, feed costs jumped another 18 percent in 2012. Soaring feed costs forced cattle and hog producers to liquidate herds at a faster rate than expected. In addition, dried-up pastures forced calves into feedlots earlier than planned. The liquidations weighed on cattle and hog prices throughout the second half of 2012, exacerbating losses.

The dairy sector also endured steep losses in 2012, adding to recent declines. Soaring feed costs raised dairy operating costs above milk prices. California, which accounts for nearly 20 percent of U.S. dairy products, was hit particularly hard as the state's feed costs were even higher due to additional transportation costs of Midwest grains. Profit margins began to improve by the end of the year as steady global demand and slower production pushed national milk prices more than 30 percent above summer price levels. Still, these revenue gains were unable to cover total production costs.

U.S. farm incomes also varied geographically, with some regions escaping the drought that blanketed nearly half the nation. In contrast to the Corn Belt and the Central Plains, parts of the Southeast and the Northern Plains experienced substantially milder drought conditions. In a third quarter survey of farm credit conditions, the Federal Reserve Bank of Minneapolis reported that incomes rose above year-ago levels, with additional gains expected in the fourth quarter. Conversely, the Federal Reserve Banks of Kansas City and St. Louis both reported that third

quarter farm incomes dipped below year-ago levels, and bankers in these districts expected further declines during the fourth quarter of 2012.

Farm Balance Sheet

Historically high farm incomes spurred additional gains in farmland values, bolstering farm wealth in 2012. Farmland values continued to climb despite the drought. The drought diverted spending from investment to operating expenses, reversing the downward trend of short-term lending activity in the third quarter. Overall debt concern was relatively subdued, however, amid record low interest rates.

Surging farmland values strengthened farm balance sheets in 2012. In 2011, farmland values soared nationwide, fueled by stronger gains in the Corn Belt and in the Northern Plains. Federal Reserve surveys indicated additional gains in 2012. For example, non-irrigated cropland values rose by more than 30 percent from year-ago levels in Nebraska and in the Dakotas during the third quarter (Map). Irrigated cropland experienced similar gains with relatively strong appreciation in ranchland as well. Booming farm real estate prices boosted farm assets almost 5 percent in 2012, and farm real estate now constitutes more than 85 percent of total assets, compared with 75 percent on average during the previous four decades (Chart 2).

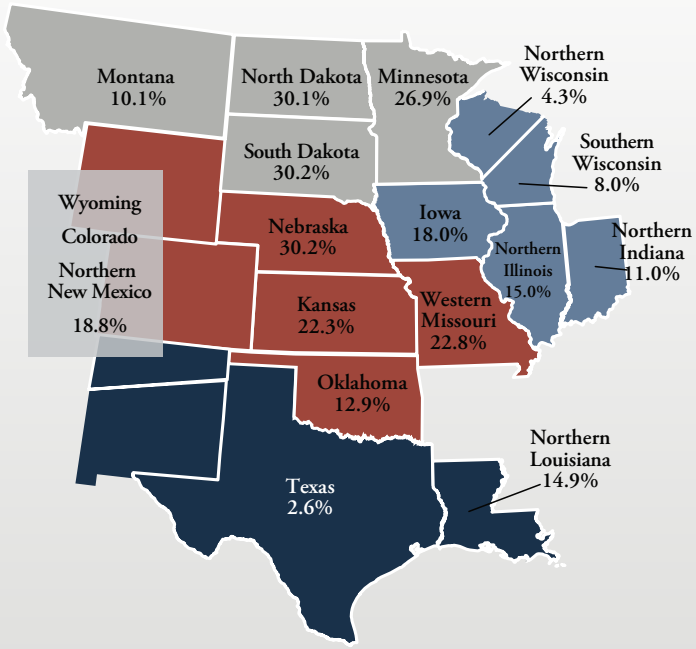
Despite the wealth benefits of rising farmland values, the sharp run-up in real estate prices is raising questions about the sustainability of current price levels. In recent years, farmland prices have accelerated faster than cash rental rates. As a result, land value-to-rent ratios, which are similar to price-to-earnings ratios for stocks, have soared far higher than historical norms. A return to historical averages will emerge from either lower land values or higher cash rents.

Soaring farmland values have reduced farm leverage ratios and boosted farm wealth. USDA projected the deleveraging trend in U.S. agriculture to persist, with the farm debt-to-equity ratio falling 11.7 percent in 2012, and a similar decline in debt-to-assets.[3] Rising farm assets, primarily land values, outpaced a moderate rise in farm debt, boosting farm equity by 6.8 percent.

Similar to farm income, farm wealth varied across the crop and livestock sectors. During 2011, crop producers enjoyed stronger wealth gains, highlighted by equity levels rising more than 10 percent for general grain producers and 28 percent for corn producers.[4] In contrast, equity levels in the poultry and dairy sectors fell in

Map 1
Value of Non-Irrigated Cropland Third Quarter 2012

Percent change from prior year



Source: Federal Reserve District Surveys (Chicago, Minneapolis, Kansas City, Dallas)

2011. Given the disparity in 2012 incomes across the crop and livestock sectors, the crop sector was likely to have experienced stronger equity gains compared with the weakening livestock sector.

Although the average farm operation has low levels of debt, some farmers possess significant debt. Compared with the 1970s farm boom, today's farm debt ratios are sharply lower. The current debt-to-equity ratio of 11.7 percent is far lower than the 1970s level of 20 percent. Debt-to-asset ratios have fallen in a similar fashion. However, research suggests that today's farm debt is more concentrated. For example, in 2010 almost 6 percent of Kansas farm enterprises had debt-to-asset ratios greater than 70 percent, triple the levels in 1979.[5,6]

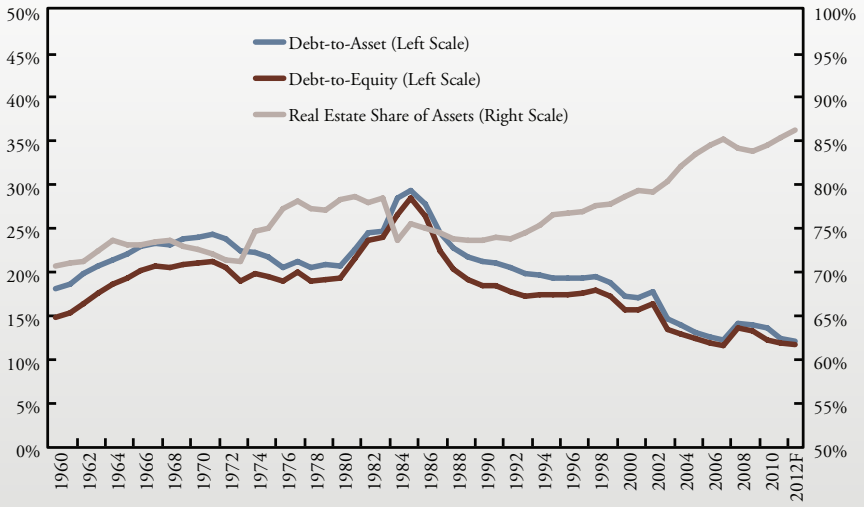
Farm lending trends shifted during the second half of the year. The drought and escalating feed prices sparked a flurry of short-term lending activity. During the third quarter, non-real-estate loans for feeder livestock and feed costs soared. In addition, bankers in the Federal Reserve Banks of Kansas City and Chicago Districts reported stronger operating loan demand, compared with weaker operating loan demand in the Minneapolis District, where farm incomes remained strong due to less intense drought conditions (Chart 3).

In drought-stricken regions, the struggle to pay for rising input costs also contributed to lower loan repayment rates. During the third quarter of 2012, repayment rates fell dramatically in the Kansas City, St. Louis, and Chicago Federal Reserve Districts, but generally remained above year-ago levels. Some bankers expressed concerns that high crop prices would cut repayment rates in industries such as the livestock and ethanol sectors, where crops are a significant input cost.

As short-term lending needs mounted, bankers in drought-affected regions noted a fall in capital spending. The Federal Reserve Banks of Kansas City and St. Louis reported sharp declines in third quarter capital purchases. Although bankers indicated a drop in capital spending, the Agricultural Equipment Manufacturers association reported steady gains in tractor sales, which jumped nearly 30 percent above year-ago levels in October. Although commercial banks reported stronger operating loan demand and weaker capital spending, farmers may be utilizing vendor financing for capital investments in machinery and equipment.

Farmers were able to borrow at exceptionally low rates as further monetary easing by the Federal Reserve pushed interest rates to record lows. Monetary policy remained highly accommodative with additional large-scale asset purchase programs (quantitative easing) announced in the second half of 2012. Both fixed and

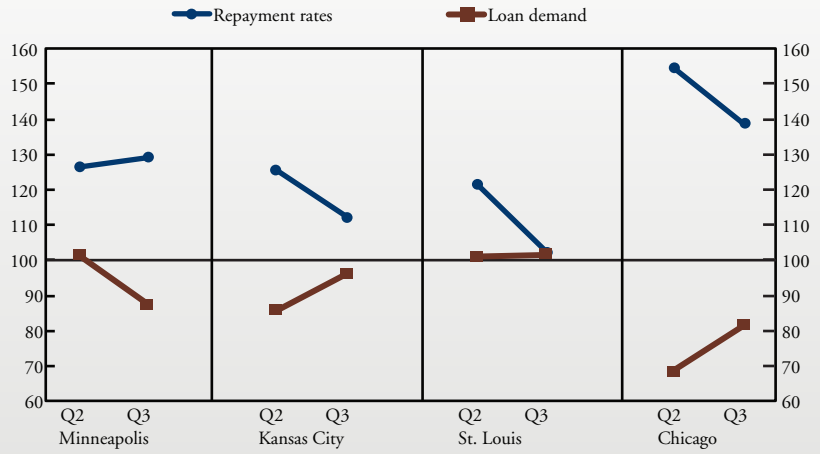
Chart 2
U.S. Farm Debt and Real Estate Assets



Source: USDA

Note: Figures for 2012 are forecasts.

Chart 3
Federal Reserve 2012 Diffusion Indexes by District and Quarter



Source: Federal Reserve District Surveys

Note: Bankers responded to each item by indicating whether conditions during the current quarter were higher than, lower than, or the same as in the year-earlier period. The index numbers are computed by subtracting the percent of bankers who responded "lower" from the percentage who responded "higher" and adding 100.

variable interest rates on farm loans declined further, with average fixed term interest rates for real estate loans and variable rates for operating loans ranging from 4.9 to 5.5 percent in the third quarter.

Financial Conditions Outlook

Although crop profits continued to outpace livestock profits in 2012, the pendulum may be about to swing. Futures markets suggest that crop prices could soften through 2013, limiting crop revenues. In contrast, weak crop prices could help boost livestock profits by trimming feed costs. A shift in farm income could reshape farm lending and investment behavior.

After several years of strong prices, crop farmers' revenues may shrink next year. Futures markets suggest that corn and soybean prices could fall by 10 to 15 percent by next fall, with the potential for further declines depending on planting intentions. In 2012, global crop plantings rose sharply and U.S. farmers planted a record number of acres to corn. Some analysts speculate that 2013 U.S. corn planting could rise even higher. During the next year, if weather conditions improve, stronger-than-expected crop plantings and better yields could lead to bumper crops and lower crop prices.

Furthermore, crop production costs are expected to rise slightly in 2013.[7] Although fertilizer and fuel costs are not currently projected to increase, there are risks that prices could jump if abnormally low water levels on the Mississippi River eventually lead to temporary closures. With lower revenues and potentially higher costs, crop-sector incomes could be noticeably lower than the 30-year highs observed each of the past two years. For example, in May 2012 USDA projected average revenues of $764 per acre of corn, which was revised upward to $905 per acre in December. If 2013 unfolds as 2012 was projected to unfold during planting season, crop incomes could fall significantly.

Lower crop prices and higher livestock prices may bring relief to the livestock sector. Crop prices have fallen from their record highs this summer, which should help ease pressure on feed costs. If corn and soybean prices soften as futures markets suggest, feed costs could decline and help support livestock profits.

In addition, futures markets also suggest livestock prices will remain high and potentially rise in 2013. Herd liquidation during the past two years has tightened domestic meat supplies and with fewer animals available for slaughter, prices are rising. For example, fed cattle futures prices are trading at about a 7 percent premium to cash prices. Lean hog futures are trading at nearly a 20 percent premium. USDA forecasts for poultry products point to similar rises toward

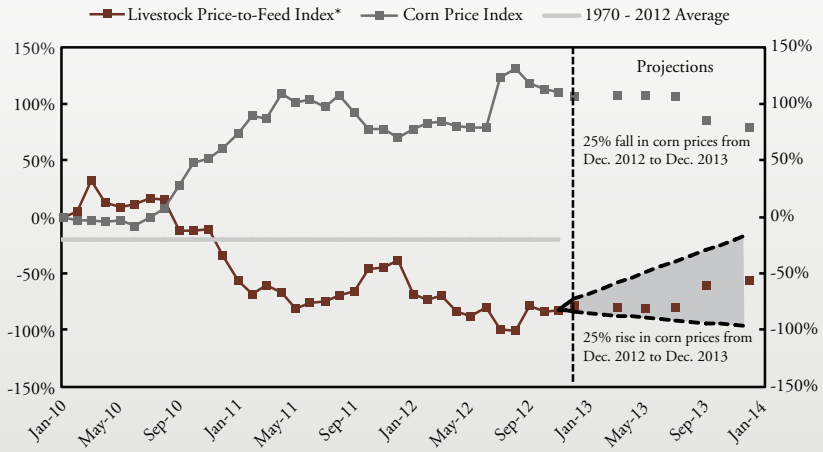
the end of 2013.

Given current expectations, price-to-feed ratios for the livestock sector illustrate the potential for stronger livestock profits in 2013. After dipping to their lowest level in two decades, price-to-feed ratios have begun to rise (Chart 4). Futures prices for corn suggest that corn prices could decline to $6.30 per bushel.[8] As a result, livestock price-to-feed ratios could return to levels comparable to late 2010 by the end of 2013. If corn prices fall an additional 25 percent below current expectations to $4.70 per bushel, the price-to-feed ratio index could rise above its historical average. Moreover, even if corn prices surge to $7.90 per bushel or 25 percent above current expectations, it is unlikely that the price-to-feed ratios would return to their low observed this past summer.

Shifting profitability in crop and livestock sectors could alter farm lending and investments. If feed costs decline and livestock profits improve, short-term operating loan demand from the livestock sector could dwindle. Conversely, higher input costs and lower crop revenues could spur operating loan demand for crop producers. In addition, as farm booms mature, farm capital spending levels have tended to remain strong as farmers use debt instead of cash to finance capital investments.

Current projections of farm profits hinge on weather. Although current futures markets suggest lower crop prices in 2013, extremely low soil moisture levels and the potential for the drought to affect crop development in 2013 raise the possibility that crop prices might remain high or spike again. A persistent drought could generate circumstances similar to 2012, with crop insurance payments and high crop prices underpinning crop profits, while livestock producers endure losses generated from higher feed costs. On the other hand, crop prices could plummet if weather patterns return to more normal conditions, producing record yields on a record number of planted acres. In that case, crop farmers might find themselves admiring the profits of livestock producers.

Chart 4
Index of Price-to-Feed Ratios and Corn Prices



Source: Commodity Research Bureau, Chicago Board of Trade, and author's calculations from USDA data

** The index is calculated by averaging price-to-feed indexes for broilers, hogs, market eggs, milk, steers, and turkeys using USDA data. The index is normalized to 0% as of January, 2010. Projections are calculated by regressing this index on monthly cash corn prices beginning in 1970 and using corn futures prices for future observations. The shaded region represents a 25% deviation of December corn futures prices above and below their current level.*

Conclusion

U.S. agriculture may be approaching a turning point. Over the past two years, high crop prices have produced record-high crop incomes, while livestock producers have struggled to earn a profit due to high feed costs. Surging crop prices spurred record-high farmland values, which allowed crop farmers to maintain healthy incomes and balance sheets while livestock

operators endured steep losses and equity deterioration. Futures markets suggest that the wide disparity in profitability across crop and livestock sectors may be reversed if lower crop prices trim crop revenues, but cut feed costs in the year ahead.

Weather appears to be the biggest risk to current farm income projections. If normal weather patterns return, crop prices could tumble, benefiting livestock operators at the expense of crop producers. If rainfall does not come soon, however, the drought and its effects on crop prices and livestock incomes could persist well into 2013. Given tight supplies, agricultural markets will remain volatile and farm profitability will turn on U.S. weather patterns.

ENDNOTES

[1]Throughout this article, livestock is broadly defined to include cattle, hogs, dairy, and poultry.

[2]United States Department of Agriculture. Income statement for the U.S. farm sector. November 27, 2012. Available at http://www.ers.usda.gov/data-products/farm-income-and-wealth-statistics.aspx

[3]United States Department of Agriculture. Balance sheet of the farming sector. November 27, 2012. Available at http://www.ers.usda.gov/data-products/farm-income-and-wealth-statistics.aspx

[4]United States Department of Agriculture. Agricultural Resource Management Survey Data. Available at http://www.ers.usda.gov/data-products/arms-farm-financial-and-crop-production-practices.aspx

[5]Featherstone, A. "Who Leveraged the Farm," 2012. Agricultural Symposium, Federal Reserve Bank of Kansas City. July 17.

[6]Data from Kansas Farm Management shows that the share of Kansas farmers with a debt-to-asset ratio 40 percent was 19.4 percent in 1979 versus 25.6 percent in 2010. The share of farmers with a debt-to-asset ratio 70 percent was 1.3 percent in 1979 and 5.9 percent in 2010.

[7]United States Department of Agriculture. Economic Research Service. Cost of Production Forecasts. Available at http://www.ers.usda.gov/data-products/commodity-costs-and-returns.aspx

[8]Futures prices were obtained from the Chicago Mercantile Exchange on December 10, 2012.