

Chicago Fed Letter

Farm income's impact on the Midwest economy

by David B. Oppedahl, senior business economist

While farm income has long been an important driver of midwestern economic activity, the influence of the agricultural sector had been waning until the boom in crop prices of 2004–13. More recently, a reversal in crop prices, along with other factors, has led incomes from crop farming to decline. Against this backdrop, the Federal Reserve Bank of Chicago held a conference on November 17, 2014, to examine the role of farm income in the Midwest economy.

During the first four years following the Great Recession (which ended in mid-2009), farmers and ranchers generated

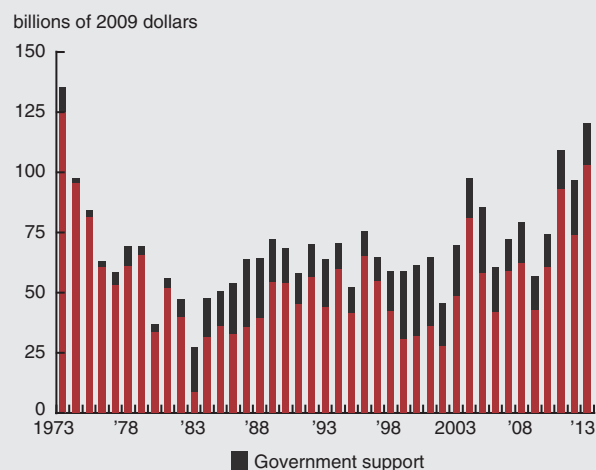
the highest levels of real agricultural income since 1973 (see figure 1), which contrasted sharply with the uneven fortunes of the broader economy over this span. Yet, since mid-2013, the incomes of crop producers have decreased, while those of livestock producers have increased, as crop (and feed) prices have fallen dramatically, mostly as a result of record or near-record harvests. Hence, risk management remains as critical as ever, as

crop producers contend with a downturn in farm income following several years of prosperity.¹ Experts from academia, policy institutions, banking, and the farming industry gathered at the 2014 conference to examine these and other farm income trends, plus their interplay with the regional economy.

The goals of the conference were to understand key components of farm income; assess the primary economic drivers of the agricultural sector; explore farm income's linkages to agricultural lending; review government policies that affect farm income; and discuss the influence of farm income on the midwestern economy.

Charles L. Evans, president and CEO of the Federal Reserve Bank of Chicago, kicked off the conference by highlighting key factors and issues that pertain to farm income and midwestern economic activity. Evans noted that agriculture continues to be a vital building block for the Midwest economy; the farm sector produces raw materials for food and biofuels manufacturing while stimulating demand for farm equipment, trucks, and more. Income produced by agricultural operations is a key component of personal income in rural areas, supporting businesses on the Main Streets of rural towns. However, farm earnings have not kept pace with overall regional economic growth. According to Evans, the output from farming as a percentage of overall output for the five states of the Seventh Federal Reserve District² had dropped from just over 3% in the 1970s to under 1% in the early 2000s; but this share began increasing moderately

1. Real net farm income, 1973–2013



Sources: Author's calculations based on data from the U.S. Department of Agriculture, Economic Research Service and Office of the Chief Economist, adjusted by the Personal Consumption Expenditures Price Index from the U.S. Bureau of Economic Analysis from Haver Analytics.

from 2007 onward, as crop prices, for the most part, climbed higher. Even though agriculture makes up a smaller share of the Seventh District's economy, some parts of the region depend heavily on income from farming. In 2012, 11% of metropolitan counties and 36% of rural counties in the Seventh District had net cash farm income that was

Moreover, Long Thompson said, agriculture weathered the Great Recession better than many other industries—which allowed the farm sector to experience a lower share of problem loans than other sectors. The provision of financing is crucial to the success of the farm industry and rural communities: The Farm Credit System (FCS) provides

and agricultural supply businesses is likely to continue, reinforcing the trend of farm income supporting fewer and fewer families. Under these circumstances, rural communities with fairly easy access to metropolitan areas (and more sources of off-farm income), high-performing schools, high-speed Internet connectivity, and strong leadership should fare better than those without.

Some materials presented at the conference are available at <https://www.chicagofed.org/events/2014/agriculture-conference>.

greater than 10% of total personal income, said Evans. Agriculture can play a larger role in the Seventh District's economy through the "manufacturing" of new products using agricultural feedstocks (e.g., advanced biofuels), Evans argued. Additionally, agricultural exports have grown dramatically in recent decades, increasingly enhancing the profitability of Midwest farmers and ranchers. Finally, given the significant volumes of agricultural loans made in the Seventh District, Evans observed that healthy farm incomes are important to many financial institutions based in the Midwest.

Farm income's economic influence

In her keynote presentation, Jill Long Thompson, board chair and CEO of the Farm Credit Administration (FCA), spoke further on some of the themes laid out by Evans. She argued that agriculture is even more critical for rural economies today than in past decades. To make this point, she noted that population loss—a major threat to the health of rural areas—can be traced to the decline of manufacturing jobs; this reduction underscores the importance of jobs related to agriculture for rural communities. In particular, Long Thompson noted, food processing has experienced a fairly recent resurgence, which is tied to increasing international demand for U.S. farm goods (based on world population growth and rising living standards). Agriculture's trade surplus should help keep the farm sector strong while boosting the overall national and midwestern economies.

almost half of the country's farm real estate credit and about a third of its non-real-estate lending for the agricultural sector, helping to create and sustain jobs in rural regions (including those related to the increasingly popular local foods movement). Under the supervision of the FCA, the FCS was in excellent shape during the first half of 2014, she noted; yet preparations have been made for the projected volatility stemming chiefly from falling farm incomes after bumper harvests and the associated sharp drops in crop prices. In closing, Long Thompson said by ensuring the safety and soundness of the FCS, the FCA contributes to the prosperity of the farm sector and rural communities.

Abram Tubbs (Ohnward Bank and Trust) discussed how banks providing agricultural financing can assist midwestern agricultural producers and rural communities as they face a downturn in farm income. Lenders should be part of the solution during tough economic times, helping borrowers plan ahead and partner with government resource agencies, such as the Farm Service Agency³ of the U.S. Department of Agriculture (USDA), said Tubbs. Moreover, good communication and transparency between lenders and borrowers should be maintained, especially as crop prices and farm incomes fall, because they allow banks to properly assess agricultural producers' assets and debts and possibly increase producers' working capital through debt refinancing (recently at historically low interest rates). Tubbs said that the consolidation of farm operations

Steven C. Deller (University of Wisconsin–Madison) shared the results of his research on the relationship between farming and the well-being of rural communities. He said that through his research, he sought to determine whether a healthy farm sector contributed to a healthy rural economy or vice versa (given the prevalence of farm families earning off-farm income). Moreover, he said his work sought to answer this closely related question: Have the consolidation of farm operations into large farms and the increase in absentee owners of farmland been detrimental to rural economies as farm profits and income are drained away, as some theorize? Deller said that by using growth models of population, per capita income, and employment, he found statistically significant relationships between the size of the farm economy and rural economic growth, most of which suggested a positive linkage. Deller reported supplemental analysis showing that a higher dependency on agriculture within a rural economy was associated with greater economic well-being and better public health outcomes. In addition, counties with larger farms (measured by median acreage) tended to have higher economic growth rates and greater levels of well-being. For the period of Deller's analysis (2000–12), the stronger economic performance of the agricultural sector relative to the overall economy could have provided a source of stability that buffered rural economies from the worst of the downturn, he observed.

Another research approach, presented by Mark Partridge (Ohio State University), looked at the possible consequences for rural areas should the farm sector experience a recession, particularly after the recent boom in crop prices that pushed farmland values to record levels.

According to Partridge, the direct effects of a severe downturn in the agricultural sector today would not be as pronounced as those during the farm crisis of the 1980s (see, e.g., the drops in farm income in figure 1), since rural areas are less dependent on farming compared with a generation ago.⁴ Since the 1980s, the share of total jobs attributed to farming has fallen roughly by half (both overall and for nonmetropolitan areas). While the Seventh District's exposure to farm activity mirrors that of the nation, some of its rural areas remain more susceptible to a downturn, noted Partridge. Despite the recent drops in crop prices, Partridge stated that the possibility of a crash in farmland values followed by systemic banking problems is quite remote. The boom in farmland values of recent years was supported by market fundamentals, including high farm commodity prices, rising cash rents for farmland, and low long-term interest rates. Moreover, the balance sheets of farm households remain in excellent shape overall, as illustrated by debt-to-asset ratios that are half the size of those seen during the farm struggles of the 1980s.

Chris Hurt (Purdue University) highlighted the recent divergent paths of farm income: falling for crop farms, but rising for livestock operations. Because of the drop-off in corn and soybean prices over the past year and a half, feed costs declined from the levels that had reduced livestock producers' income in 2006–13. The output of meat and dairy products was reduced during this period of narrowing profit margins for livestock operations (which were squeezed even further by drought in some areas). In response to lower supplies and a recovery in demand, prices for cattle, hogs, chickens, and turkeys have moved much higher lately, said Hurt. Rising profits have induced livestock producers to expand their output, although cattle numbers take longer to rebuild than stocks of other animals. These recent developments have restored agricultural production value to its historical balance—about half from crops and half from livestock. Among Seventh District states, only Wisconsin (at 65%) had over half its farm production value from animals

in 2012; Illinois and Indiana had over two-thirds of their farm production value from crops. Purdue's forecasts for Indiana showed about a 30% decline in net income from crop farming in 2014 and another 35% decline in 2015; in contrast, net income from livestock farming was predicted to set a record in 2014, before easing in 2015, Hurt shared. This new era of higher incomes for livestock enterprises should be bolstered by rising domestic consumption and growing exports of U.S. food products. Given the specialization of most farms, some rural communities will experience greater pressures from the fall in crop incomes, while others will benefit from the rise in livestock incomes.

Farm solvency

Todd Kuethe (University of Illinois at Urbana–Champaign) explained the process of farm income estimation used by the Economic Research Service of the USDA, with input from other USDA agencies. Then, he compared the USDA's approach with those of the farm management associations of Illinois and Kansas, concluding each had its own merits. Next, Kuethe said that using data from Illinois's farm management association, he examined the solvency of the state's farm operations, categorizing them as “favorable” if net farm income was positive and their debt-to-asset ratio was at or below 40%; “marginal” if either farm income was negative or their debt-to-asset ratio was above 40% (but not both); and “vulnerable” if farm income was negative and their debt-to-asset ratio was above 40%. In 2013, 82.5% of the 884 Illinois farms in the sample were classified as favorable and just 2.4% were classified as vulnerable. Between 2003 and 2013, there had been an upward trend in favorable ratings, in line with the surge in crop prices. Yet, 10.5% of all farms experienced at least one episode of falling into the vulnerable category during the sample period, with each episode lasting an average of 1.6 years. Kuethe said his analysis showed that an average farm in the sample would be in the marginal category for 1.2 years on account of negative income and for 2.4 years on account of the debt-to-asset ratio rising

above 40% during a 30-year period (representing the length of a farm loan). Kuethe's key insight for 2015 was that crop farm operations would need to conserve their cash flow, given that crop insurance guarantees are down and lower farm income is expected in the coming years.

Public policies affecting farm income

The farm safety net was the focus of remarks by Joe Glauber, chief economist for the USDA. Government payments (both direct subsidies and crop insurance indemnities) have remained an important part of the farm sector's income, even as market-derived farm income has risen in recent years. The number of acres covered by crop insurance has grown significantly, and so have the liabilities of the crop insurance program, which is subsidized and overseen by the USDA. The substantial payouts during recent droughts (especially the one in 2012) underscore the importance and value of crop insurance. Agricultural producers are paying premiums for coverage that has generally increased over time. The total value of crop insurance premiums has tended to exceed the total value of indemnities

Charles L. Evans, *President*; Daniel G. Sullivan, *Executive Vice President and Director of Research*; Spencer Krane, *Senior Vice President and Economic Advisor*; David Marshall, *Senior Vice President, financial markets group*; Daniel Aaronson, *Vice President, microeconomic policy research*; Jonas D. M. Fisher, *Vice President, macroeconomic policy research*; Richard Heckinger, *Vice President, markets team*; Anna L. Paulson, *Vice President, finance team*; William A. Testa, *Vice President, regional programs, and Economics Editor*; Helen O'D. Koshy and Han Y. Choi, *Editors*; Rita Molloy and Julia Baker, *Production Editors*; Sheila A. Mangler, *Editorial Assistant*.

Chicago Fed Letter is published by the Economic Research Department of the Federal Reserve Bank of Chicago. The views expressed are the authors' and do not necessarily reflect the views of the Federal Reserve Bank of Chicago or the Federal Reserve System.

© 2015 Federal Reserve Bank of Chicago
Chicago Fed Letter articles may be reproduced in whole or in part, provided the articles are not reproduced or distributed for commercial gain and provided the source is appropriately credited. Prior written permission must be obtained for any other reproduction, distribution, republication, or creation of derivative works of *Chicago Fed Letter* articles. To request permission, please contact Helen Koshy, senior editor, at 312-322-5830 or email Helen.Koshy@chi.frb.org. *Chicago Fed Letter* and other Bank publications are available at <https://www.chicagofed.org>.

ISSN 0895-0164

since the mid-2000s, with 2012 being an exception. Much of the farm safety net is legislated through the Agricultural Act of 2014, Glauber said. Although nutrition programs have been allocated 80% of this farm bill's \$489 billion in funding, farm commodity, crop insurance, and conservation programs were projected to receive 5%, 8%, and 6% of the funding, respectively, over the 2014–18 period. These programs offer an array of choices for managing various risks faced by agricultural producers (including those related to adverse weather conditions and sudden drops in prices for their goods below certain predetermined levels). The current farm bill's approach relies upon insurance as the primary means by which to protect against agricultural risks and to support farm incomes.

Mary Ahearn (*Choices* magazine) discussed the financial well-being of farm households and the public policies affecting their income. The largest farms (those with sales of \$1 million or more) gained a greater share of the total value of agricultural production in recent decades, she noted. So, not surprisingly, households with smaller farms relied more on off-farm income than income generated by farming (which was negative for them, on average). Nearly

two-thirds of all farm households had an operator, a spouse, or both earning income outside of the farm. Since around 2000, the typical farm household has had more financial security than the typical U.S. household—which implies that policy should be more focused on the needs of specific types of farmers, according to Ahearn. Given these trends in the farm sector, farm policy has been shifted toward better addressing the needs of beginning and socially disadvantaged farmers (e.g., women and minorities), as well as farms producing diversified goods and those that sell their goods locally. Specialized programs have been enacted to assist the development of small farms' direct marketing/sales, farmers markets, and supply chains for regional food systems (all of which support the local foods movement). In closing, Ahearn emphasized that while agricultural research and development (R&D) has historically delivered large returns on investment, there has been a decline in public R&D spending, which must be reversed to foster the long-term competitiveness of U.S. agriculture.

Conclusion

Farm incomes in the Midwest have risen in the past decade, though farming's share of total income has eroded over

the long term. Still, agriculture remains highly important to many rural economies, and they have prospered of late alongside rising farm commodity prices and buoyant farmland values. Given the volatility inherent in farming, public policies such as those subsidizing crop insurance have provided valuable protections for agricultural incomes. Moreover, agricultural lenders have helped farm operations take advantage of the opportunities presented to them by an increasingly global economy.

¹ Several types of risks for agricultural producers and lenders and the risk-management tools available to them were discussed at the Chicago Fed's 2013 Agriculture Conference; a summary of that conference is available at <https://www.chicagofed.org/publications/chicago-fed-letter/2014/january-318b>.

² The Seventh Federal Reserve District comprises all of Iowa and most of Illinois, Indiana, Michigan, and Wisconsin. The numbers cited by Evans are for the entirety of these five midwestern states.

³ www.fsa.usda.gov/FSA/.

⁴ For more background on the crisis, see <https://www.chicagofed.org/publications/economic-perspectives/1985/november-december-benjamin>.