

## Do Record Farmland Prices Portend Another Steep Downturn for Agriculture and Farm Banks?

The agricultural crisis of the early 1980s remains a vivid memory for many in the farming community. Hundreds of farm banks failed during that period, and thousands of families lost their farms. Several factors came together to create the crisis; however, the massive run-up in farmland prices in the late 1970s, followed by the sharp decline in land prices between 1981 and 1992, significantly contributed to the adverse effects on farmers and their lenders. Today, farmland values are rising at a pace reminiscent of the 1970s, raising concerns that another agricultural crisis may occur if land prices decline. This article briefly discusses some of the reasons for the recent farmland price increases and analyzes their potential effect on FDIC-insured institutions.

### Farmland Booms Preceded Hardships for Farmers and Their Lenders

Two significant boom-bust cycles in farmland prices occurred in the 20th century: one in the first two decades of the century and the other in the 1970s. In the first instance, strong population growth, improvement in railroads and shipping that allowed the opening of export markets, and increased productivity through the rapid adoption of tractor power all contributed to rising farm incomes.<sup>1</sup> By 1920, crop prices had more than doubled in only five years, and high farmland prices followed.<sup>2</sup>

Farmland values were similarly inflated by skyrocketing farm income in the 1970s. Strong export demand—due in part to rising incomes and growing populations in importing countries, and a weak U.S. dollar—fueled rapid increases in farm incomes during this period.<sup>3</sup> In addition, negative real interest rates caused by high inflation spurred massive borrowing for farmland purchases.

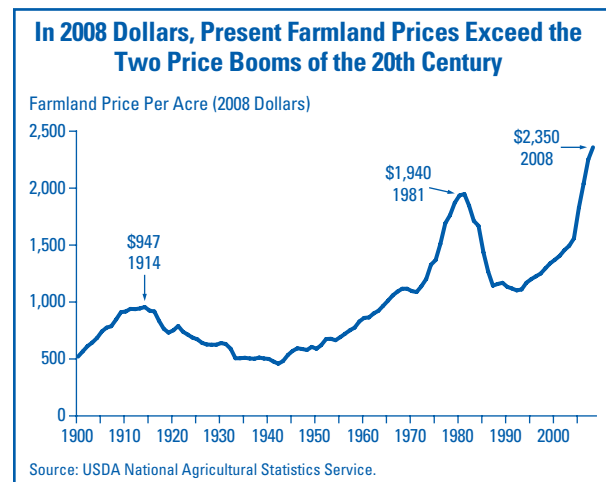
In both instances, strong export demand and growing income levels convinced farmers they were experiencing

a new era in agriculture that would continue indefinitely. However, the unprecedented demand for U.S. farm commodities proved only temporary. In the 1920s, the end of World War I precipitated the decline in export demand, while in the 1970s, falling demand was due to greater global competition and a stronger dollar.<sup>4</sup> In addition, more restrictive monetary policy reduced the annual inflation rate from more than 13 percent in 1980 to less than 2 percent in 1986, further dampening farmland prices.<sup>5</sup> The distress led to thousands of farm bankruptcies, hundreds of farm bank failures, and a sustained decline in farmland prices.<sup>6</sup>

### Farmland Values Have Escalated Sharply, Reaching New Peaks

Farmland values have risen dramatically across the United States during the past several years. Between 1993 and 2003, inflation-adjusted farmland prices were quite stable, increasing by 3.0 percent per year (see Chart 1). Since 2004, however, prices have jumped by

Chart 1



<sup>1</sup> R. Douglas Hurt, *American Agriculture—A Brief History*, rev. ed. (West Lafayette, IN: Purdue University Press, 2002), p. 221.

<sup>2</sup> Willard Cochrane, *The Development of Agriculture—A Historical Perspective* (Minneapolis: University of Minnesota Press, 1993), p. 100.

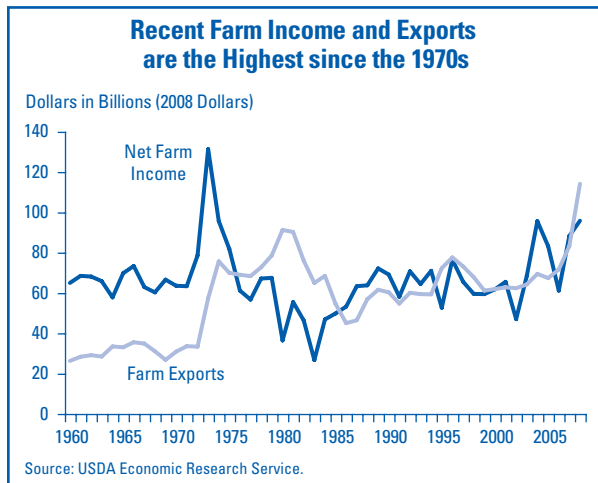
<sup>3</sup> John Anderlik and Jeff Walser, "Agricultural Sector Under Stress: The 1980s and Today," *FDIC Regional Outlook*, third quarter (1999), p. 18.

<sup>4</sup> Hurt, p. 221. U.S. farm exports fell by more than half between 1980 and 1986. Anderlik and Walser, p. 22.

<sup>5</sup> Anderlik and Walser, p. 21. After increasing 80 percent in inflation-adjusted terms from 1971 to 1981, farmland values rapidly declined to near their pre-1970s level.

<sup>6</sup> Anderlik and Walser, p. 18. There were 297 farm bank failures between 1977 and 1993.

Chart 2



an average of 11 percent annually.<sup>7</sup> At \$2,350 per acre, average farmland values are more than 20 percent higher than their historic peak of \$1,940 recorded in 1981.

While it would be difficult to quantify the causes of higher farmland prices on a local level, several factors are driving them on a regional and national scale. Foremost among these is strong farm income, primarily in corn-, soybean-, and wheat-producing regions. Other contributing factors include the spillover effects of the national housing boom, especially on the coasts, and a low interest-rate environment.

Farmers have experienced strong farm income in three of the past four years (see Chart 2). In 2008, forecasted net farm income is \$95.7 billion, second only to the record \$131.3 billion (after adjusting for inflation) set in 1973. Export demand for all U.S. agricultural products during the past four years has also been strong, with 2008 exports forecast to be the highest on record.<sup>8</sup>

While strong export demand is bolstering commodity prices, significant domestic demand for corn-based ethanol is pushing corn and soybean prices even higher. The corn ethanol industry, which was virtually dormant for more than two decades following the energy crisis of the

1970s, has mushroomed since 2000. Record-breaking oil prices and federal legislation supportive of the industry have contributed to the growth of ethanol as a lower-cost fuel alternative. The proportion of the U.S. corn crop used by the ethanol industry grew from 11 percent in the 2002 crop year to nearly 33 percent in 2008.<sup>9</sup> The result has been extremely high corn prices, which have spilled over into higher soybean prices as farmers have converted millions of acres of soybean plantings into corn. Consequently, land prices in the nation's largest corn- and soybean-producing states have increased rapidly (see Table 1).

The housing boom during the first half of this decade has also contributed to rising farmland values, especially on the coasts (see Table 1). Earlier this decade, developers bought or acquired options for tens of thousands of acres of farmland for the incipient housing boom, providing a significant nonagricultural source of demand for farmland. **Florida**, for example, where housing development was very strong, ranked first among the states in farmland price growth from 2004 to 2007, averaging 30.5 percent annually.<sup>10</sup>

Further, the recent escalation in farmland values occurred during a period of low long-term mortgage rates. In this environment, financing became much cheaper, resulting in lower capitalization rates and higher property values. In addition, this period saw the global devaluation of the U.S. dollar that increased global demand for U.S. agricultural exports.<sup>11</sup>

### Several Factors Could Derail the Recent Run-Up in Farmland Values

The two U.S. farmland price booms of the 20th century grew on expectations that strong farm income and exports would continue indefinitely, which raises the question, Will the drivers of today's high farmland values prove more enduring? The basic assumption behind growing or high farmland values is that farm income will also grow or remain high; these expectations are then capitalized into farmland values. If agricultural export demand remains strong, keeping crop

<sup>7</sup> All farmland prices discussed in this article have been inflation-adjusted to the equivalent in 2008 dollars.

<sup>8</sup> U.S. Department of Agriculture (USDA) Economic Research Service, Net Farm Income Forecast, <http://www.ers.usda.gov/Briefing/FarmIncome/nationalestimates.htm>; Farm Income: Data Files Net Value Added (With Net Farm Income), 1910–2007, <http://www.ers.usda.gov/Data/FarmIncome/FinfidmuXls.htm>; and Value of U.S. Agricultural Trade by Fiscal Year, <http://www.ers.usda.gov/Data/FATUS/DATA/XMS1935fy.xls>.

<sup>9</sup> USDA World Agricultural Outlook Board, *World Agricultural Demand and Supply Estimates*, December 10, 2004, p. 10, and October 10, 2008, p. 10.

<sup>10</sup> USDA National Agricultural Statistical Service, *Farmland Value and Cash Rents Reports*, various.

<sup>11</sup> Craig Elwell, *Weak Dollar, Strong Dollar: Causes and Consequences*, Congressional Research Service Report, June 13, 2005, pp. 13 and 17; Nora Brooks and Ernest Carter, *Outlook for U.S. Agricultural Trade*, Economic Research Service, USDA, August 28, 2008, p. 2.

Table 1

Sharp Increases in Real Farmland Values Continue in Corn-Producing States							
Top 5 Corn Producers	Average Annual Growth Rate (Percent)			Selected Coastal States	Average Annual Growth Rate (Percent)		
	10-year 1993–2003	3-year 2004–2007	1-year 2007–2008		10-year 1993–2003	3-year 2004–2007	1-year 2007–2008
Iowa	2.7	12.1	13.3	California	2.5	12.9	4.3
Illinois	2.1	14.8	11.2	Florida	1.1	30.5	(3.3)
Indiana	3.8	9.6	7.1	Georgia	4.3	20.4	(3.7)
Minnesota	3.3	12.1	7.4				
Nebraska	1.7	10.7	14.3	United States	3.0	13.1	4.8

Source: USDA National Agricultural Statistics Service.

prices high, and prices for inputs (such as seed, fertilizer, and fuel) stay within a reasonable range, then the current values for farmland can be supported.<sup>12</sup>

However, if farm incomes return to historical levels, either through declining demand or because of higher farm operating costs, then farmland values may be pressured downward to reflect lower capitalized returns to the land. Concerns about a global recession could cause U.S. farm exports, which are currently 70 percent above the most recent ten-year average, to return to more normal levels.<sup>13</sup> As mentioned earlier, falling export demand was a contributing factor in both of the U.S. farmland busts of the past century.

Threats to the fragile corn ethanol industry also may derail the optimistic price future for corn and ultimately affect land values. In the near term, high oil price volatility and declining ethanol prices resulting from rapid escalation in ethanol production have squeezed industry profit margins.<sup>14</sup> As a result, a number of corn ethanol plants have closed, while plans for construction and expansion projects have been abandoned or delayed.<sup>15</sup> In the long term, political and technological risks could also negatively affect the corn ethanol industry. Already, there is growing opposition to U.S. government support of a 45-cent-per-gallon subsidy for blending corn ethanol into gasoline and a 54-cent-per-gallon tariff against cheaper, Brazilian sugar-based ethanol.<sup>16</sup> Moreover, the

development of advanced biofuels, such as cellulosic ethanol, could displace much of the corn ethanol industry, though it is uncertain when this technology will be commercially viable. However, a growing number of experimental production plants have begun operation or are under construction.

The recent retreat in the residential real estate market coupled with tighter credit conditions may also weigh on farmland values. The dramatic slowdown in residential construction has caused demand for raw development land to evaporate, putting downward pressure on farmland values in areas that had rapid housing price growth. For example, as shown in Table 1, the real annual farmland price growth rate in **California**, **Florida**, and **Georgia** ranged from -3.7 percent to 4.3 percent in 2008, well below the 2004 to 2007 growth rates. Further, liquidity and credit quality problems in the financial sector have caused tightening of lending standards overall, and therefore the extent to which credit availability was driving farmland prices higher likely has stalled or reversed.

### Farm Banks Have Declined in Number and Market Share, but Have Higher Risk Profiles Than Before the Early 1980s Agricultural Crisis

Given the similarities between the recent escalation in farmland prices and the land price booms of the 20th century, it is worthwhile to examine the current condition of farm banks. Specifically, how are these banks positioned at this point in the agricultural cycle compared with the late 1970s?

A significant difference is that today, there are fewer farm banks nationally than there were in the 1970s. In addition, today's farm banks hold a much smaller share of agricultural loans, as agricultural lending has become more diffused throughout the banking system during

<sup>12</sup> Jason Henderson, "Will Farmland Values Keep Booming?" Federal Reserve Bank of Kansas City, *Economic Review*, second quarter (2008), pp. 88 and 92.

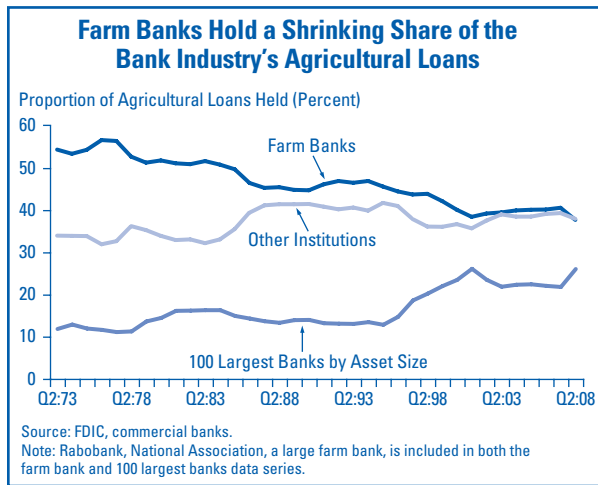
<sup>13</sup> Value of U.S. Agricultural Trade by Fiscal Year, <http://www.ers.usda.gov/Data/FATUS/DATA/XMS1935fy.xls>.

<sup>14</sup> Jacqui Fatka, "Biofuel Capacity Outpaces Demand," *Feedstuffs* 80, no. 45 (2008), p. 3.

<sup>15</sup> Chris Blank, "Biofuels Plants Hit Economic Road Block," *Associated Press State and Local Wire*, October 9, 2008.

<sup>16</sup> "U.S. Congress Extends Ethanol Subsidy and Tariff," *Chemical News & Intelligence*, May 15, 2008; "A Renewed Push for Ethanol, Without the Corn," *New York Times*, April 17, 2007.

Chart 3

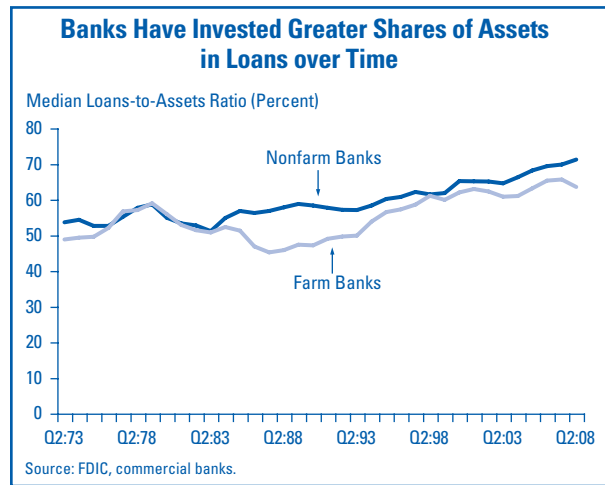


the past three decades. At the outset of the 1980s agricultural crisis, 4,515 banks, nearly one-third of all U.S. commercial banks, specialized in agricultural lending.<sup>17</sup> These banks represented more than half of the industry's farm operating and real estate loans (see Chart 3). Farm banks now represent only 22 percent of all commercial banks in the United States and account for just 38 percent of all agricultural loans. Also, large banks have an increased share of the nation's agricultural loans, and traditional farm banks have expanded into nonagricultural loans. While 99 of the 100 largest commercial banks are not farm banks, they hold 26 percent of the banking industry's agricultural loans. These institutions have diversified loan portfolios, and agricultural loans represent a relatively small proportion of their capital. Because of their diversified holdings, large banks are not as vulnerable to agricultural downturns.

Despite the diffusion of agricultural risk across banks of various types and sizes, 1,579 farm banks were operating nationally as of June 30, 2008. These banks were primarily headquartered in the wheat-, corn- and soybean-growing areas in the middle of the country. Overall, these banks are relatively healthy thanks to strong farm incomes during the past several years. Indeed, as of mid-year 2008, farm banks reported historically low farm loan delinquencies, nearly nonexistent farm loan net charge-offs, and high levels of capital and reserves. However, the one negative aspect of farm bank performance is earnings, particularly net interest margin (NIM) performance. In 2007, the median annual NIM

<sup>17</sup> For purposes of this article, a farm bank is a commercial bank with a volume of farm loans, including loans secured by farmland, exceeding 25 percent of its total loan portfolio.

Chart 4



for farm banks fell below 4 percent for the first time since 1977.

Despite their relatively healthy condition, farm banks have increased their risk profile considerably since the 1980s. Among the reasons for the increased risk are elevated loans-to-assets (LTA) ratios, increased exposure to several types of nonagricultural loans, and lower balance sheet liquidity.

The most striking structural change in farm bank lending in the past 20 years is in the ratio of loans to assets. LTA ratios among farm banks are much higher today than they were in 1980 (see Chart 4). Farm banks now hold a median 64 percent of total assets in loans, up from 55 percent in 1980. This trend is not unique to farm banks, but instead reflects a similar trend in the broader banking industry, as banks have countered declining NIMs by increasing the concentration of loans on their balance sheets.<sup>18</sup>

What makes this trend worrisome is that according to research in the FDIC study *History of the Eighties—Lessons for the Future*, LTA ratios were much more highly correlated with bank failures than equity levels, growth rates, or earnings performance.<sup>19</sup> Even though

<sup>18</sup> Richard D. Cofer, Jr., and John Anderlik, "Declining Net Interest Margins and Rising Loan-to-Asset Ratios—A Disturbing Paradox," *FDIC Regional Outlook*, fourth quarter (2000).

<sup>19</sup> FDIC, *History of the Eighties—Lessons for the Future* (Washington, 1997), p. 281. Researchers examined eight bank performance variables, including loan volume, asset and loan growth, and various earnings measures, and found that a bank's loans-to-assets ratio was the best predictor of failure. When ranked according to their loans-to-assets ratio, the top one-fifth of farm banks was five times more likely to fail than other farm banks.

their capital levels are considerably higher, many farm banks now have more loans in relation to capital than they did in 1980. In addition, because overall farm loan portfolios have grown little in relation to asset levels, higher LTA levels indicate growth in nonagricultural loan portfolios. In fact, farm banks have greatly increased holdings of construction and development (C&D) loans and residential real estate loans since 1980. The downturn in the housing market and the weakening economy have caused deterioration in these credit portfolios. Since June 2006, just as the housing market downturn began in earnest, farm loan portfolio delinquencies have declined while the median delinquency ratio for nonfarm loans has increased to 2.7 percent from 2.2 percent. Nearly 25 percent of farm banks reported nonagricultural loan delinquencies of 5 percent or more as of June 30, 2008.

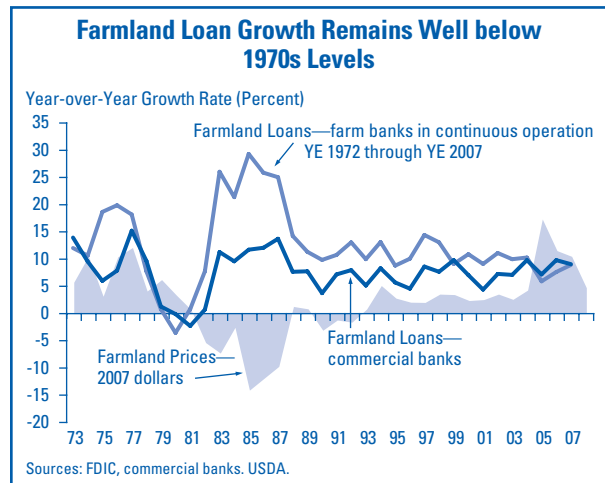
Finally, farm banks today exhibit lower balance sheet liquidity than they did in 1980. The median farm bank holds liquid assets of 33 percent of total assets, down from 42 percent in 1980. As a result of lower asset-based liquidity sources, bankers are relying increasingly on other funding sources, including Federal Home Loan Bank advances, correspondent borrowing lines, and brokered and wholesale deposits.

### How Susceptible Are Farm Banks to a Downturn in Farmland Prices?

There is little consensus among agricultural economists as to the sustainability of high farm incomes and farmland prices. However, it is safe to predict that any significant, overall decline in farmland values is likely to be preceded by a decline in net farm income. This combination would cause farmers to have less income with which to pay their loans and lower collateral values securing these loans. This would be true in any environment, but would likely be magnified given the current boom in net farm income and farmland prices.

However, there is one dramatic difference in farm loan underwriting compared with the late 1970s. It does *not* appear that collateral-based lending—relying on farmland values rather than farm cash flow to determine loan repayment ability—is nearly as widespread as it was leading up to the last agricultural crisis. Many banks that failed during the 1980s relied too heavily on collateral-based lending, which put farm loans at risk when land prices declined. Subsequently, both bankers and regulators have recognized the prudence of cash-flow-based lending. In outreach meetings with the FDIC and other federal regulators, farm bankers have consistently

Chart 5



said that they have held the line on lending on farmland and required solid cash flow numbers. Thus, according to these lenders, many of the highest-priced farmland sales have been cash sales or have otherwise not involved bank financing. A look at recent farmland loan growth suggests that farm bankers have been careful to avoid overlending for farm real estate; although farmland values have been escalating rapidly since 2003, farmland loan growth at farm banks actually declined during that time (see Chart 5).

Still, farm banks have increased their risk profiles, primarily by increasing nonagricultural loan portfolios. This has left them more susceptible to nonagricultural risks, such as the macroeconomic weaknesses that have affected residential, C&D, and consumer loan portfolios.

Moreover, some farm banks have significantly higher risk profiles. As of June 30, 2008, 190 farm banks (about 12 percent of the total) held loan portfolios in excess of 80 percent of their assets, compared with just 14 farm banks in June 1980. Not only do these banks exhibit higher credit risk tolerance, but they also have other high-risk characteristics. As Table 2 shows, these banks hold less capital and smaller loan loss reserves to balance greater risk taking. Indeed, these banks hold one dollar of capital for every eight dollars of loans, while the typical farm bank holds one dollar of capital for every five dollars of loans. In addition, high-LTA farm banks operate with far less balance sheet liquidity than the typical farm bank. Farm banks with high LTA ratios also have a greater share of loans concentrated in C&D lending than the typical farm bank and have nearly three times as much capital exposure. Agricultural loan delinquencies at these banks remain very low, in line



Table 2

<b>Farm Banks with High Loans-to-Assets Ratios Exhibit Other Higher-Risk Profiles as Well</b>		
	<b>Farm Banks with High LTA Ratios<sup>a</sup></b>	<b>All Farm Banks</b>
<b>As percentage of total assets</b>	<b>Median Values (Percent)<sup>b</sup></b>	
Capital and loan loss reserves	10.2	11.2
Total loans	84.2	63.5
All agricultural loans	34.4	25.4
Farmland-secured loans	15.4	11.3
Construction & development (C&D) loans	2.2	0.9
Commercial business loans	12.0	8.1
Liquid assets	11.6	32.6
<b>As percentage of total capital and reserves</b>		
Total loans	831.7	562.3
All agricultural loans	336.3	227.7
C&D loans	20.4	7.8
<b>Loan delinquency ratios</b>		
Agricultural loans	0.5	0.3
All other loans	2.8	2.7
C&D loans	5.6	2.5
Commercial business loans	1.8	1.5
<b>Annualized growth rates 2004 to 2008</b>		
Total assets	7.5	4.4
All agricultural loans	10.1	5.6
Farmland-secured loans	10.5	6.1
Source: FDIC, all farm banks.		
<sup>a</sup> Farm banks with loans-to-assets (LTA) ratios exceeding 80 percent.		
<sup>b</sup> Reported C&D loan delinquency ratios are 75th percentile values, not medians. Both groups report median values of 0.0 percent.		

with the industry; however, their C&D loan delinquencies are more than double the industry average.

## Conclusion

While it is not clear whether today's high farmland values represent the first act of a boom-bust cycle or a new era in farming, bankers must continually assess risk in relation to economic events. History has shown that rapid spikes in farm income and farmland values are followed by significant declines. Recent economic evidence may portend a retreat from record farm incomes and farmland values. The national housing downturn already has led to a decline in real farmland prices in coastal states, and increasing risks in the corn ethanol industry could deflate farmland prices in the nation's crop-producing states.

Although the number of farm banks has declined, along with their share of the agricultural lending market, these lenders still account for one-fifth of the nation's commercial banks and hold sizeable agricultural

loan portfolios. These institutions are susceptible not only to swings in farm incomes and farmland values, but increasingly to nonagricultural factors as well. The not-so-distant experience of the early 1980s agricultural crisis stands as a reminder of the need for vigilance, especially during times of agricultural prosperity.

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