

# Common Ground Comparing Texas and Midwest Cropland

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**N**et farm income (NFI) and cropland values throughout the United States have increased substantially in the last decade, especially in the Midwest. NFI in Iowa has expanded from about \$2 million in the mid-1990s to over \$9 million in 2011 in real terms. Cropland prices in Iowa have increased over 200 percent in the last ten years as a result. These increases are largely attributable to increases in crop prices, yield per acre, and demand.

The Texas Panhandle and South Plains Region (Region 1), have seen similar increases in rural cropland prices (Figure 1). From the beginning of 2005 to the peak in 2013, Region 1 cropland values increased 118 percent. Since then, prices have remained relatively stable while Midwest land prices have decreased close to 10 percent from their peak.

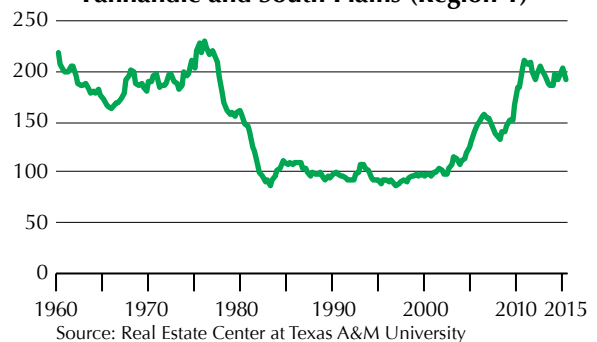
## Farm Sector Cycles

There have been three major farm business sector boom-and-bust cycles in the last century: 1910–40, 1940–60,

### The Takeaway

The Midwest has seen substantial increases in farmland values. As crop prices decline and profit margins tighten, the growth in land values may be coming to an end.

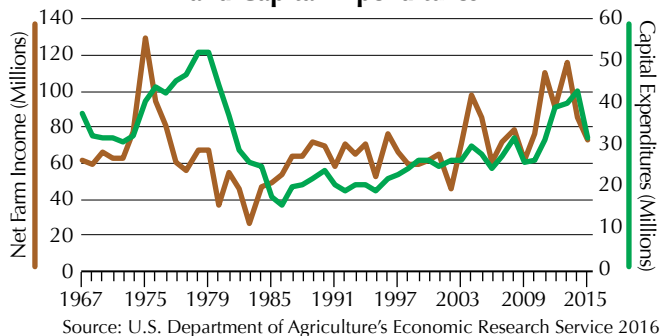
**Figure 1. Texas Rural Land Prices  
Panhandle and South Plains (Region 1)**



and 1970–80. The recent growth in the farm business sector has a number of similarities to the boom periods of the three previous cycles. The 1970–80 cycle, the most recent and major one, ended in NFI and cropland prices crashing. This crash was largely attributable to overleveraging. The repercussions manifested as 2.3 farm bankruptcies per 1,000 farms per year; nearly 70 agricultural commercial banks failing per year; and massive declines in revenue for suppliers, leading many to close operations. As a result, the government was forced to intervene with supplemental appropriations and assistance programs to restrict agriculture production and boost prices and NFI.

A general pattern has emerged in these cycles. Initially, NFI grows, usually due to increases in trade, exports, and prices. The surge in cash flow induces producers to deleverage, increasing their wealth positions. The increase in wealth induces expansion and modernization of operations. As NFI reverses, capital expenditures continue to grow despite negative signals from the market. The relationship between historical U.S. NFI and capital expenditures is shown in Figure 2. Eventually producers are forced to restructure their newly created debt positions.

**Figure 2. National Net Farm Income and Capital Expenditures**



Some question whether the recent boom in the farm business sector will have an outcome similar to the previous cycles. Texas in general has not been subject to the same factors that have affected the recent boom. The Midwest rural economy is dominated by row crop production, while less than 18 percent of Texas land is used for cropland. Region 1's rural economy is most similar to the Midwest's farm economy with close to 50 percent of the land used for dry or irrigated crop production. This region is most likely to endure stress from the recent downturn in commodity prices and contraction in NFI.

The majority of Texas rural land—close to 65 percent—is used for pastureland. Texas also has substantial non-

farm income whereas Midwestern states do not. Hunting, fishing, and other tourism activities are prevalent in Texas.

## Financial Leverage Ratios

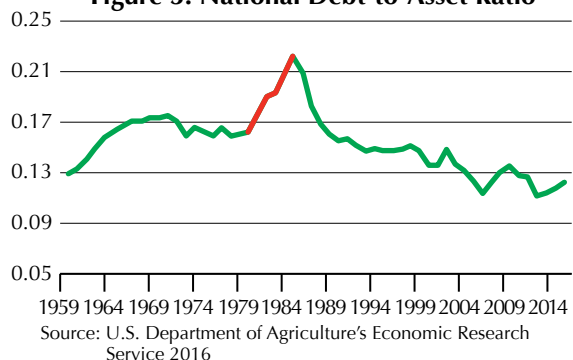
A common and popular distinction made between today and the 1980s is the lower debt positions of the overall farm business sector. From 2000 to 2005, national debt levels remained stable, and accumulation was minimal. During that time, the average yearly debt accumulation for the nation was about 1.5 percent. In the latter part of the decade, debt levels increased about 9 percent, largely because of the boom in ethanol production. In the past several years, debt levels have continued to rise, increasing 8 percent in 2014.

The debt-to-asset ratio (DAR) is a statistic most commonly used to describe the financial health of the farm business sector. The DAR reached unsustainable levels during the 1980s and reached its peak in 1985 at 22 percent (Figure 3). In 2002, it reached 15 percent and declined to 12 percent in 2015. Analysts point to this as a major distinction between the 1980s and now and a reason why the recent boom will not end like the 1980s.

However, the DAR does not account for important structural changes that have occurred in the sector. Debt in the farm business sector today is more concentrated on a minority of producer balance sheets compared with the 1980s. Almost two-thirds of producers reported no outstanding term debt on their balance sheets in 2009 as opposed to nearly 60 percent of producers in 1986. Additionally, 55 percent of the outstanding debt was held by farms with multiple loans from multiple sources.

The profile of the debt holders of the outstanding term debt also plays a part in the development of risk. According to the 2012 census of agriculture, the average age of U.S. farmers was 58, and 78 percent of the producers had been on the farm for more than ten years.

**Figure 3. National Debt-to-Asset Ratio**

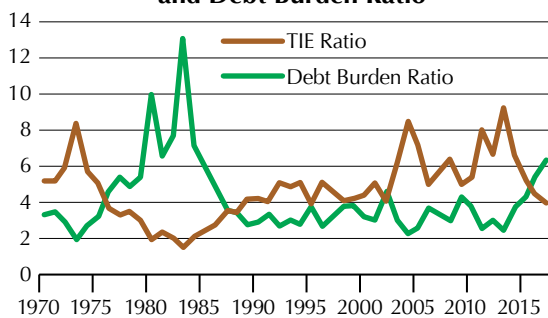


This suggests that those holding most of the outstanding term debt may be relatively new entrants making significant capital expenditures. Thus, the majority of the risk could be concentrated within a minority of the most vulnerable producers. These structural differences in debt profiles of the market compromise the comparison of the DAR over time.

The DAR is a single balance sheet statistic and considers both the liquid and nonliquid assets available to cover debt. Eighty percent of the farm business sector's assets are land values, which are nonliquid. Landowners may consider land sales to retire debt infeasible in times of stress as demand for land contracts. Asset values are also a function of market strength. When the market was stressed in the 1980s, the value of cropland (and therefore assets) declined rapidly. Therefore, ratios describing farm business sector's capacity to service current outstanding debt through asset liquidation may not truly represent the sector's financial health.

The debt burden ratio (DBR) and the times interest earned ratio (TIER) measure revenue or income relative to current debt obligations (Figure 4). The DBR is debt outstanding divided by NFI and is an indicator of the repayment capacity of an entity. The TIER, on the other hand, is calculated as revenue divided by interest expense and describes the borrower's ability to service their interest payments.

**Figure 4. National Times Interest Earned and Debt Burden Ratio**



Source: U.S. Department of Agriculture's Economic Research Service 2016

Lenders use a general threshold in determining an enterprise's access to credit. A DBR of four, or total debt outstanding not exceeding net income by a multiple of four, is most commonly used. The average DBR does not exceed that threshold for most of the historical period except from 1976 to 1986 (Figure 4). The DBR

surpassed that threshold of four and reached a peak of 13 in 1983 but did not substantially surpass that threshold again until 2015 when it reached 4.4. It has continued to rise, and the USDA has projected it will reach 6.3 in 2017.

The spread between the DBR and the TIER ratios can also indicate stress. In 1977, the two ratios reversed their relationship when the DBR became larger than the TIER. This relationship continued throughout the farm business sector downturn and reversed in the late 1980s as the sector began to recover. These ratios did not see a similar relationship reversal until 2016 when the DBR increased to 5.5 and the times interest earned decreased to 5.28. The USDA's projections for NFI in 2017 imply further widening of the spread.

The Panhandle and South Plains Region of Texas are most likely to be affected by the downturn in row crop commodity prices and NFI, but the rural land markets in this region may not be similarly affected like the Midwest. Recently, dairies in Region 1 have been buying cropland to grow their own feed. When crop prices reached record highs, dairies' margins decreased due to the increased input cost of their feed. As commodity prices decline and crop producers become strained, dairies are benefiting from the decrease in input costs. Dairies are taking the opportunity to buy cropland as a way to eliminate future feed cost risk. This alternative demand for cropland has likely supported the rural land markets. The Midwest does not have this immediate alternative demand. Using Iowa again as a representative state for the Midwest, cropland has declined 17.6 percent from 2013 to 2016. Region 1 cropland prices have only decreased 1.1 percent during the same period.

As the current boom for the national farm business sector comes to an end, what happens next is mere speculation. Many state market participants will avoid the tragedies of the 1980s. Yet further consideration beyond the common, aggregated, balance sheet indicator shows the sector may not be in the stable environment currently touted. The other indicators considered here look at ability to service debt which, in the end, determines stability. 📌

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