

## THE FINANCIAL CRISIS: Is This a REPEAT OF THE 80'S FOR AGRICULTURE?

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The current financial crisis in the capital markets combined with recession fears are having a significant impact on the entire global economy. Agriculture is not immune from the effects of this crisis – grain prices declined by almost 50% from July to October of 2008. The almost \$4.00 decline in corn prices during a 4 month period of time is unprecedented in both speed and magnitude. Farmers and agribusiness managers are clearly unnerved by this rapid deterioration and are asking: “Is This a Repeat of the 1980's for Agriculture?” The best way to answer that question is to compare some of the financial fundamentals and metrics for today's agriculture to that of the 1980s.

### A Different Interest Rate and Inflation Situation

Interest rates in the early 1980s were at much higher levels than today, and rose much more rapidly during a relatively short period of time than is expected to occur in the future. In the mid to late 1970s interest rates were 7% to 10% for much of the long and short-term debt borrowed by the agricultural sector, but the rate of inflation was at similar if not higher levels so that the real rate of interest was very low and at times negative for the agricultural sector.

As one would expect, very low real rates of interest encouraged increased use of borrowed funds, and debt loads increased significantly during the 1970s and early 80s for individual farm firms and for the industry. One common strategy was “leveraged inflation investing” in which wealth could be dramatically increased by borrowing money at low interest rates and investing in assets (land) which were increasing at the higher inflation rates. Unfortunately, some lenders also based loan justifications on balance sheet equity rather than on repayment capacity.

A combination of deregulation of the interest rate markets and a change in Federal Reserve monetary policy in the early 1980s, implemented in large part to stem rising inflation expectations, resulted in a dramatically rapid rise in interest rates. The prime rate which had averaged about 7% in 1977 rose to 11.5% by the close of 1978, to 15.3% by the end of 1979 and peaked in 1980 and 1981 above 20%.

This rise in interest rates was unprecedented in terms of magnitude and speed of change, and much of the increasing debt was borrowed on variable rate terms. Consequently, as the cost of funds and interest rates increased, the interest rate on these debt obligations was adjusted upward. Rapidly rising interest rates combined with higher debt obligations was one of the dimensions of the perfect storm that created the financial crisis for agriculture in the 1980s. Many of those who had chosen leveraged inflation investing saw their net worth vanish as asset values (land) fell. The excessive financial leverage of the 1970s also forced more land onto the market further depressing land values.

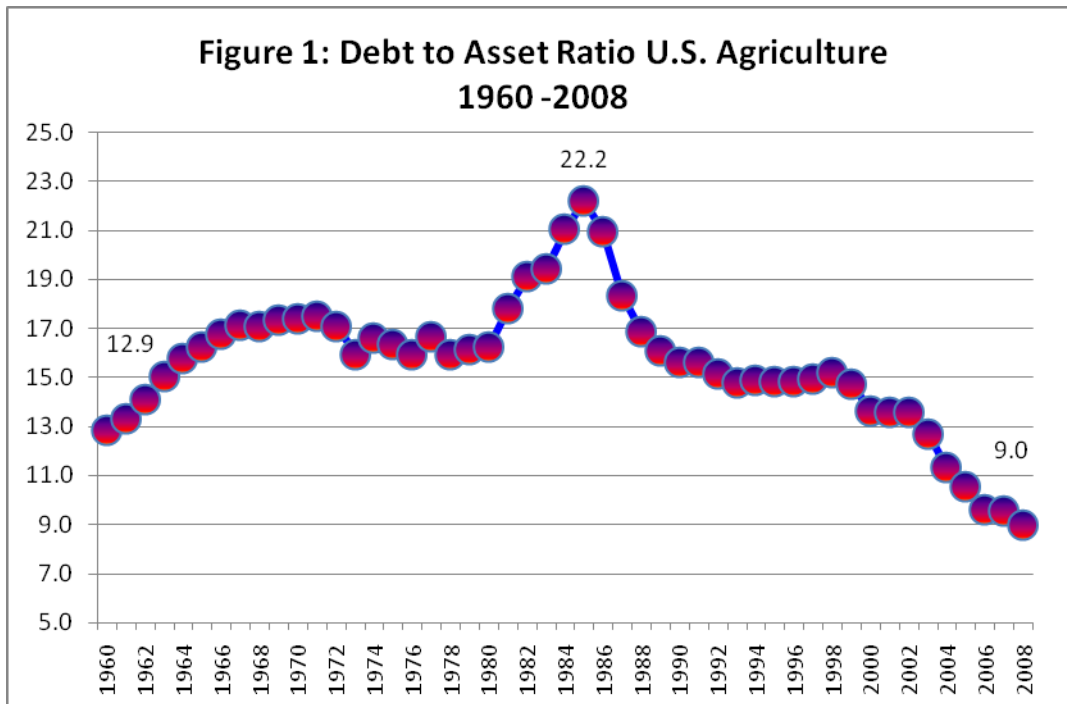
In contrast to the 1980s, interest rates today for the majority of agricultural loans are at much lower levels, with the prime rate at just 4.5%. Although interest rates may increase some over time, the rate of increase is not expected to be nearly as dramatic in order of magnitude or speed as that of the 1980s. Furthermore, it appears that a significant proportion of the term debt used to finance land and machinery and equipment is now on a

fixed rate rather than variable rate financing, which means that even if market interest rates increase, the interest rate on current fixed rate debt obligations will not be adjusted to these higher rates.

The importance of interest rates and interest cost in understanding the differences between the 1980s and today's financial condition of the agricultural sector is critical. In the 1980s, interest expense was also a major drain on farm incomes and cash flow. A frequently used measure of financial stress was that if interest expense exceeded 25% of gross revenue, the firm would suffer severe financial stress and most likely would need to make significant adjustments including the sale of assets or renegotiation of debt obligations. Interest expense for the industry in 2007 and 2008 averages only 4.2% of gross revenue compared to an average of 13.4% in the four years from 1981 through 1984, and there are significantly fewer firms that have interest expense exceeding 25% of gross revenues today than in the 1980s.

Little Inflation Investing and Low Debt Today

An important consideration in assessing the financial health and the resiliency of any industry or firm to respond to financial stress is the leverage position or the proportion of the assets in that firm or industry that are financed with debt compared to the proportion financed with equity. Figure 1 shows the current level of debt is extremely low relative to assets. In fact the debt to asset ratio shown here is the strongest financial position dating back at least to 1960. Note that during the farm financial crisis of the 1980s, farmers were using substantially more borrowed funds to finance their business than they are today. In fact, the debt to asset ratio for the industry peaked at 22.2% percent in 1985; more than double that of recent years. The debt to asset ratio for the industry currently stands at 9%, so for each \$100 of assets, debt represents only \$9 and equity holders (mainly farmers as well as land owners and other investors) are providing \$91 of the capital for the industry. It is worth noting that near the end of the boom in 1980, the debt to equity position was 16.2%. Today, as we enter a potential period of decline, the sector has a very strong equity position as reflected by the 9% debt to equity ratio. Therefore for the sector in total, debt is not likely to be a major problem in coming years, at least nothing like the 1980s.



While the sector is financially strong, there certainly are individual farms that have higher leverage positions, but in general there are fewer farm firms that are as highly leveraged as they were in the 1980s and the industry as a whole is much less dependent on debt.

Low debt or leverage positions mean the industry and individual firms are more financially resilient – they aren't as vulnerable either to rising interest rates or to debt service obligations that would take an increasing proportion of declining incomes when prices decline or costs increase. This does not mean that individual farmers will not face financial stress with lower incomes, but the expectation would be for many fewer defaults, since farmers are not as heavily dependent on debt for financing their businesses.

#### Better Liquidity, So Far!

An additional financial metric used to assess the financial strength or resiliency of a firm is liquidity – the amount of the asset base of the firm that can be converted to cash relatively easily and without significant losses. A common method of measuring liquidity is the current ratio – current assets divided by current liabilities. This measure provides an indication of the ability to readily convert assets into cash in the normal course of business through for example selling inventory – thus having sufficient proceeds to pay debt obligations that are due within the year.

For Illinois grain farms, the current ratio was 2.42 in 2007 a very strong current situation. Of course that has likely deteriorated with much lower agricultural prices.

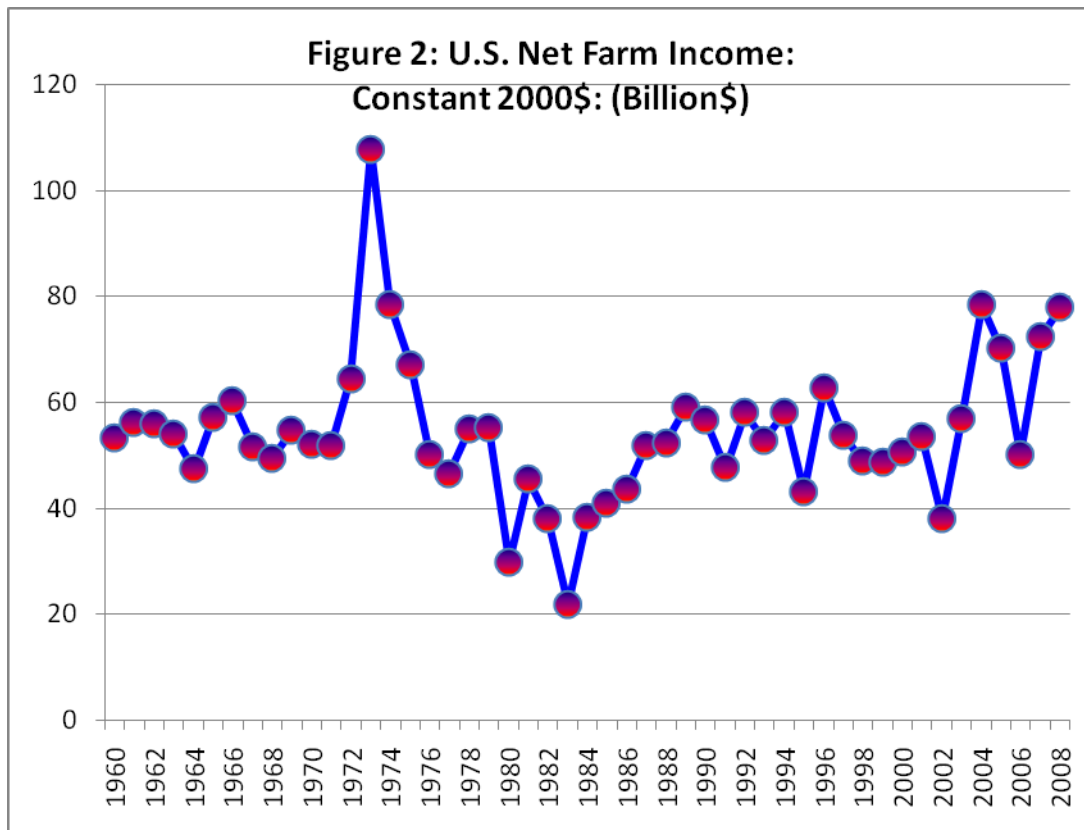
Another measure of the short term liquidity is working capital – current assets minus current liabilities – which in essence is an absolute measure of the funds that are available beyond current commitments to buffer the firm from short term declines in income or other cash flow pressures. Working capital is often described as the first defense against financial stress – a business with a strong working capital (or current ratio) position is better able to absorb the financial consequences of lower incomes. In summary, the liquidity position of farmers as measured by both the current ratio and working capital metrics is significantly better today than it was during the 1980s farm financial stress period, indicating more financial resiliency and ability to weather the storm without severe financial consequences.

#### Strong Incomes Before Downturn Help Cushion the Blow

An additional important difference between the agricultural sector of today and that of the 1980s is the income generated in the 3-5 years before a downturn. Although many identify the financial stress of the 1980s as the 1983 through 87 periods, the financial problems for the industry really began in the late 70s and early 80s when farm incomes declined because of both lower farm prices and higher costs – particularly interest cost.

This is illustrated in Figure 2 which shows inflation adjusted U.S. net farm income, but in constant 2000 dollars. Taking inflation out of the numbers allows a better (but not perfect) comparison over numerous decades. Starting with the decade of the 1960s real net farm income averaged \$54 billion per year. The four income surge years in the 1970s were 1972, 1973 (peak), 1974 and 1975 (average of \$79.5 billion). Then for the four years 1976 through 1979, real incomes averaged \$51.8 billion per year, surprisingly below the average of the 1960s. Incomes then headed into dismal territory for the years 1980 through 1986 when they averaged about \$37 billion (1983 bottom at \$21.9 billion).

The low farm incomes during the late 1970s and the early 1980s were symptomatic of financial trouble, but rising land values until 1981 masked the impending financial problems. The farming sector was experiencing low incomes and cash flow problems well before the farm financial crisis of the mid-1980s. In essence the ability to borrow against appreciating asset values delayed recognition of creeping financial problems being created by low incomes and cash flow difficulty. Borrowing against asset appreciation compounded financial weakness by adding to the debt load and costs of servicing debt at a time of weak incomes. Unfortunately, this sounds eerily similar to the recent financial crisis in the housing market. As with the sub-prime mortgage crisis, this delay in responding to the impending financial breakdown actually contributed to the eventual severity of the financial crisis.



To contrast today's situation, real net farm income has averaged about \$63 billion a year for the past five years 2004 through 2008 (and that is reducing 2008 income by \$20 billion from the August 2008 USDA estimate that is shown in the figure).

Without a doubt, these recent strong incomes were earned primarily by grain/crop farmers, while livestock producers had much lower incomes and even significant losses during much of 2007 and the first half of 2008.

Even for those farmers who generated high incomes during the years prior to 2008, there is the issue of what was done with that income. Some of it was used to purchase additional machinery and equipment as evidenced by strong sales reported by machinery manufacturers. The asset value of machinery has increased by \$7.6 billion since 2004. Some of it was also used to expand the business and/or buy additional land as reflected in higher land prices with the primary purchasers of farm land being farmers. Some of it might have been used for higher family living expenditures. The value of financial assets held by farmers has increased by nearly \$17 billion from 2004. Some of this may have increased cash reserves, but it is more likely that many diversified investments away from the farm toward IRA's and other retirement investments. To the extent these moved toward the stock market, those values may already be considerably eroded.

But the increased current ratio and higher working capital positions of farm operations during the last few years compared to earlier periods this decade suggest that at least some of this additional income was maintained as a financial reserve and not spent on capital equipment purchases or withdrawn from the business. Thus, in contrast to the farm financial stress of the 1980s, grain farmers in particular are much better positioned to handle a prospective financial downturn than they were in that earlier period.

#### Leveraged Land Purchases Worsened The 80s Crash

A final important difference between the period leading up to the farm financial stress of the mid 1980s and today is the difference in the amount of debt used in the financing real estate purchases. During the late 1970s and very early 1980s, with rapidly rising farm real estate values and very low or negative real rates of interest, farm land buyers were incited to not just buy real estate, but to finance a large portion of their real estate

purchases with debt. To respond to competitive conditions and maintain or grow their loan volume, lenders were willing to finance an increasing proportion of the land value (to increase the loan to value ratio) by taking security on appreciating land currently owned by the borrower to “shore-up” the collateral/security position on new purchases of farm land.

Thus, a number of farm land purchases were “100% debt financed” because the lender was willing to take a collateral security interest in property currently owned by the farmer – property that had significantly appreciated in value over the previous 3-5 years. In essence, lenders were primarily collateral focused in much of their lending policy rather than cash flow/earnings focused. When income and debt servicing problems surfaced, lenders demanded payment or foreclosed on the property because of borrower defaults and the dramatic downturn in asset values began.

Farmers who had highly leveraged their purchases were “forced” to sell land irrespective of market conditions, and/or lenders foreclosed and sold the acquired property to service the debt obligation. A significant proportion of the downturn in land values of the 1980s was in essence an excess amount of farmland offered to the market in a period of time when potential buyers had little appetite or limited funds to purchase those assets. Again, the similarity to the current residential housing crisis is apparent.

#### Land Hasn't Had an Inflation Surge Like the 1970s, Yet!

Asset values, especially land has appreciated sharply again this time. However, this time there has not yet been the years of inflation investing that helped build the speculative bubble in land values. Looking back to the 1970s, in the four years when incomes boomed from 1972 through 1975, Indiana land values increased about 77%. However, as inflation investing became the norm after 1975, land values between 1975 and 1981 went up another 165%. So far in the two years since land values began their double digit increases, Indiana land values are up only 34% and only 57% in the past four years. The point here is that we have not had the burst of inflationary investing that sent land values so far out of equilibrium by the very early 1980s. This may mean that the adjustment of land values to the downside in the next few years, if needed, may not have to be as severe.

#### The Future: So What Comes Next?

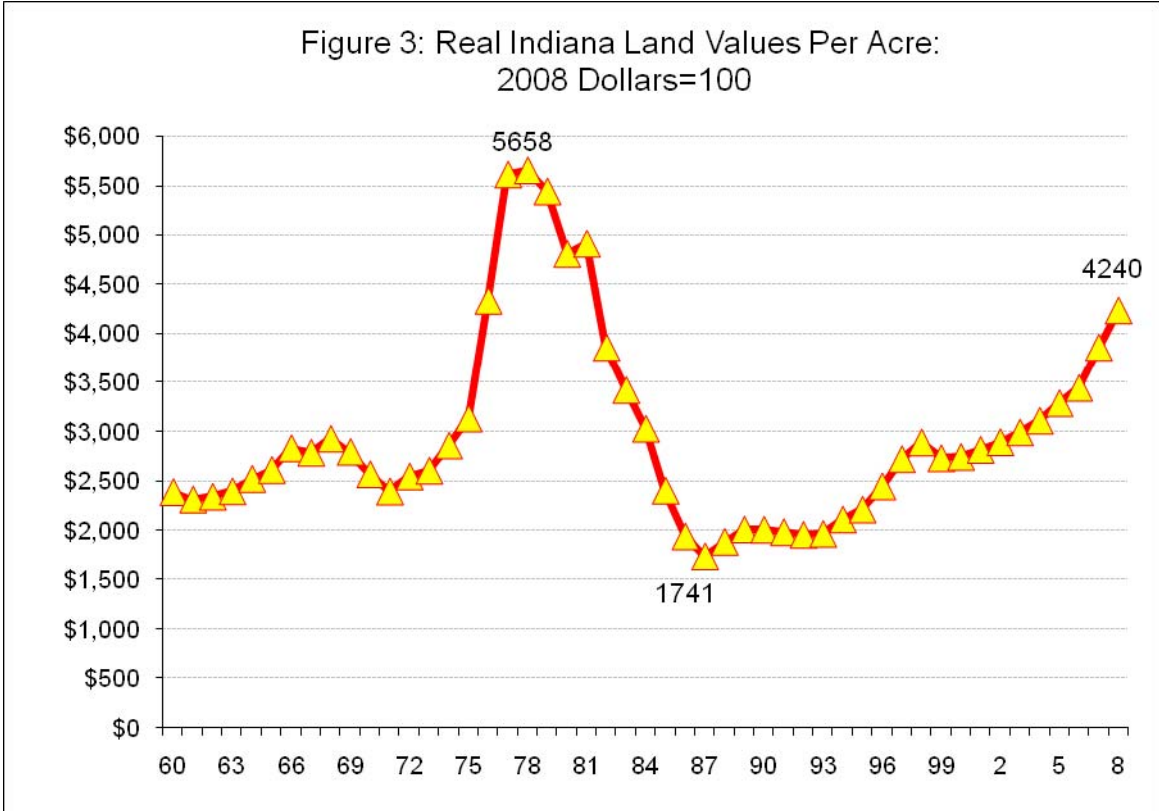
Lenders as well as farmers learned the lessons of the 1980s and have been much more cautious in recent years in terms of debt utilization, and in financing land purchases in particular. As noted earlier, the debt load relative to assets in the agricultural sector has been declining in recent years. In fact agriculture is at record low levels of debt relative to assets at least in modern times. In the current period higher real interest rates have discouraged the use of debt to finance capital expenditures including farmland purchases. Lenders have been much more cautious in their lending policies and have maintained lower loan to value requirements as part of their underwriting standards. So, land values have, so far, avoided the super overheating of the late 1970s and very early 1980s.

Many of the land purchases in recent years have been made with cash down payments of 50% or greater, and lenders have continued to maintain lending standards of only 60 to 70% of the value of a land purchase. So in the next few years, in contrast to the 1980s, even with lower prices and incomes for the agricultural sector, substantially fewer debt servicing and default problems are likely to occur, because of lower proportions of debt utilized and because of a lower proportion of highly leveraged farm operations.

Fewer potential defaults and repayment problems will result in fewer potential sales of farmland into a market that has limited buyers because of financial uncertainty in the industry. Thus, there is less chance of a self-fulfilling downward cascading slide in farmland values as experienced in the 1980s for farmland, or as is currently being experienced in the residential housing market.

This evaluation should not be interpreted as suggesting that farmland and farm asset values cannot go down. They can and they will if returns to crop production erode badly. It is also likely that there will be deterioration in the equity and wealth positions of farmers. But the prospects of the forced sale of land and other farm assets compounding the asset depreciation problem are much smaller than in the 1980s. This and the record strong current financial position of agriculture greatly reduces the odds of widespread financial deterioration threatening the solvency of a larger number of farming operations as occurred in the 1980s.

It is not the intent of this article to predict how the agricultural economy will evolve in the next few years. But we are saying that the financial events that made the 1980s so difficult for agriculture are less likely this time. In downturns, the magnitude of the drop is partially related to the magnitude of the surge that preceded it. From a positive view we can say that the recent surge, at least measured by land values, has not been as large this time, so the downward adjustment may not have to be as large, as shown by inflation adjusted Indiana land values in Figure 3. However, in a more negative tone, the current world economic crisis is a serious threat that could result in world recession and loss of demand for agricultural goods. Unfortunately, the magnitude and duration of any downturn is still to be determined.



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