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Debt, Income and Farm Financial Stress

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Farmers have significantly increased their debt levels in recent years. Since 2004, real farm debt has risen nearly 5 percent annually, the fastest increase since the prelude to the 1980s farm debt crisis. Today's rising debt raises questions about whether U.S. farm operations will face financial stress in the future.

Farm financial stress can be defined as the inability to meet debt service payments, including principal and interest. The primary determinants of financial stress are the level of debt, its cost or interest rate, and the amount of farm income available to service the debt. Low interest rates and high income improve debt repayment, while higher interest rates and lower income do the opposite. In recent years, low interest rates and robust farm income have kept financial stress from spiking for the average farm operation. Still, some agricultural enterprises have seen incomes fall, leaving some producers with elevated levels of financial stress.

This article examines the concentration of debt and farm financial stress across U.S. producers. The article also considers how financial stress would be affected by an abrupt surge in interest rates or a drop in farm income. If farm financial conditions were to deteriorate rapidly, no producer would be immune to rising financial stress. However, the producers most susceptible to rising stress

would primarily be those with limited income, primarily among livestock producers and operators younger than 35 years old.

Who has farm debt?

Since 2004, farm operations have accumulated debt at a pace similar to that of the 1970s. Unlike the 1970s, though, the recent run-up in farm debt is concentrated in real estate and among a small group of producers. These producers vary relative to farm size, enterprise, and age of owner.

The recent rise in farm debt—especially real estate debt—resembles the growth of debt in the 1970s. From 1974 to 1980, total farm debt rose about 6 percent annually, with equal gains in both real estate and non-real estate debt. From 2003 to 2009, total farm debt increased just short of 5 percent per year. However, recent debt gains are more concentrated in farm real estate. From 2003 to 2009, farm real estate debt rose more than 6 percent per year, compared to less than 3 percent per year for non-real estate debt. One reason for the larger rise in real estate debt is that real farmland values surged 40 percent during the same time period.¹

Much of today's farm debt is also concentrated among fewer producers. According to the most recently available data, only about 30 percent of producers in 2008 reported

farm debt.² In contrast, soon after the 1980s farm debt crisis, more than 60 percent of producers still had some debt.

The recent rise in debt has been concentrated among large farming operations with more than \$1 million in sales. From 2004 to 2008, total real farm debt, as measured in constant 2005 dollars, doubled for large farming operations, rising to \$60 billion (Chart 1). These large farms, which accounted for 5 percent of all farms, saw their share of total farm debt rise from 15 to 30 percent. In contrast, the total amount of debt held by smaller farm operations (sales of less than \$1 million) held steady at roughly \$160 billion, while their share of farm debt dropped from 85 to 70 percent.

Rising debt has also varied by producer type. From 2004 to 2008, as the price of farmland reached historical highs, total farm debt held by crop producers jumped 30 percent, and real estate debt surged more than 35 percent. By 2008, crop producers held about half of total farm debt. In contrast, from 2004 to 2008 the other half of U.S. farm debt, held by livestock producers, rose just 5 percent.

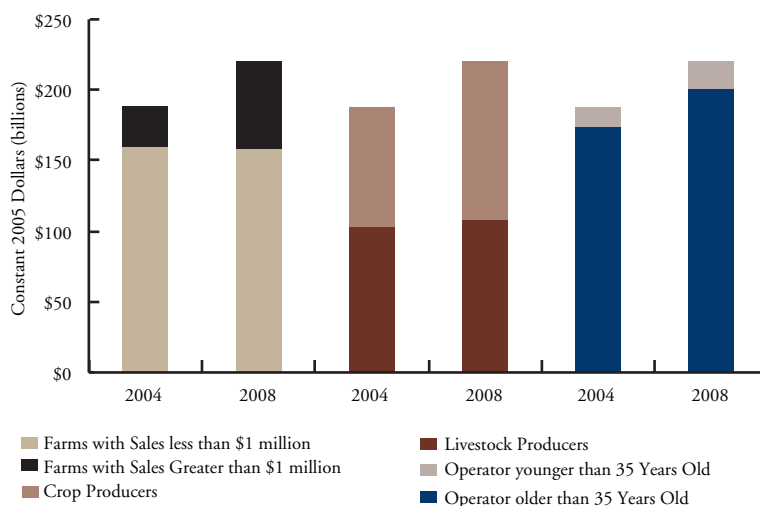
Finally, debt levels have also varied by the age of farm owners. While young farmers (under the age of 35) only held about 10 percent of farm debt in 2008, their debt levels have risen sharply. From 2004 to 2008, their farm debt rose 40 percent, with much of the rise related to the significant capital investments necessary to begin farming.

Farm financial stress

Farm financial stress arises when producers lack sufficient income to service their debt at current interest rates. Since 2004, the farm sector has enjoyed some banner profits, with real net farm income exceeding the historical average by more than 7 percent. Profits have been highly variable, though, with most accruing to large farming operations. Thus, large operations had ample income to service their sizable debt loads. On the other hand, livestock producers and operators younger than 35 have missed out on these stronger profits, creating financial stress for many of them.

Farm financial stress can be measured using a debt

CHART 1
TOTAL REAL FARM DEBT FOR PRODUCERS REPORTING DEBT
2004-2008



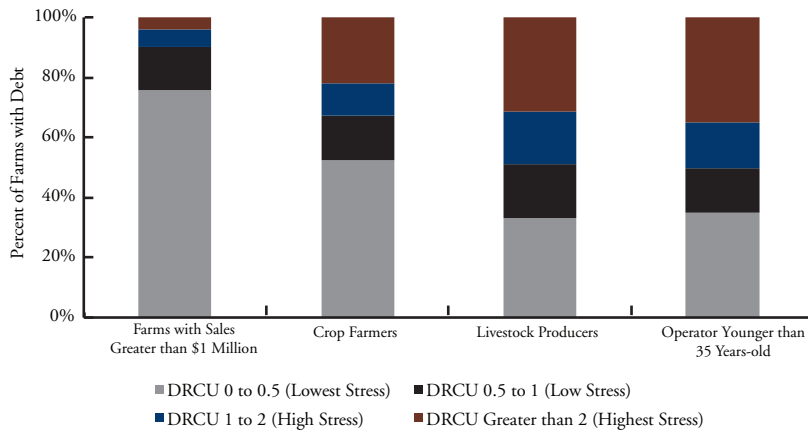
Source: 2004 and 2008 ARMS

repayment capacity utilization (DRCU) ratio, which takes into account all three determinants of stress: debt, income, and interest rates. Specifically, the DRCU is defined as outstanding farm debt divided by how much debt the farmer can afford to repay with net farm income at current interest rates.³ Thus, a DRCU of 1 indicates net farm income is sufficient to service outstanding debt. A DRCU of less than 1 reflects that income is more than sufficient to handle debt—and thus financial stress is low. For example, producers with a DRCU of 0.5 could afford to service twice as much farm debt. As the DRCU moves higher, financial stress rises. Farmers with DRCUs above 1 would be unable to service all debt using net farm income alone. Farmers with DRCUs above 2 would be under extreme financial stress because their debt would be double the amount they could afford.

In 2008, most U.S. farm operators with farm debt had low levels of financial stress. The majority of these producers had a DRCU below 1. In fact, more than 40 percent had a DRCU below 0.5, reflecting low levels of stress. Still, about 25 percent had a DRCU above 2, indicating severe financial stress.

Larger farming operations, those with \$1 million or more in sales, typically had low levels of financial stress. More than 75 percent of large farming operations carrying debt had DRCUs below 0.5, and less than 5 percent had DRCUs above 2 (Chart 2). Although larger farming operations often

CHART 2
DEBT REPAYMENT CAPACITY UTILIZATION (DRCU) RATIOS
FOR FARMS WITH DEBT



Source: 2008 ARMS data on farm debt and net farm income

carry substantial debt loads, their ample incomes are 10 times the average income for all producers carrying debt, allowing them to service their debt.

The majority of crop producers with farm debt were also able to service their debt. Surging commodity prices in 2008 boosted crop incomes about 20 percent. Despite a sharp rise in their debt loads, nearly 70 percent of crop producers carrying debt had a DRCU of less than 1. Still, roughly 20 percent had a DRCU above 2.

In contrast, livestock producers' financial stress rose significantly with falling net incomes. In 2008, weak livestock prices and rising feed costs contributed to declining net incomes of livestock producers. As a result, nearly a third of all livestock producers faced severe financial stress, with DRCUs rising above 2.

Young farmers also suffered mounting levels of financial stress due to falling incomes in 2008. Nearly a third of all young farmers had a DRCU greater than 2. Many young farmers fell into this severely stressed category because from 2007 to 2008 their average net farm income declined 12 percent.

How vulnerable are producers to financial shocks?

While some producers are more financially stressed than others, none are immune to the

prospects of rising stress. Elevated financial stress could result from higher interest rates or falling net incomes. This section analyzes how a set of financial shocks—an abrupt surge in interest rates, a sharp decline in income, or a combination of both—would affect the level of financial stress among agricultural producers.⁴

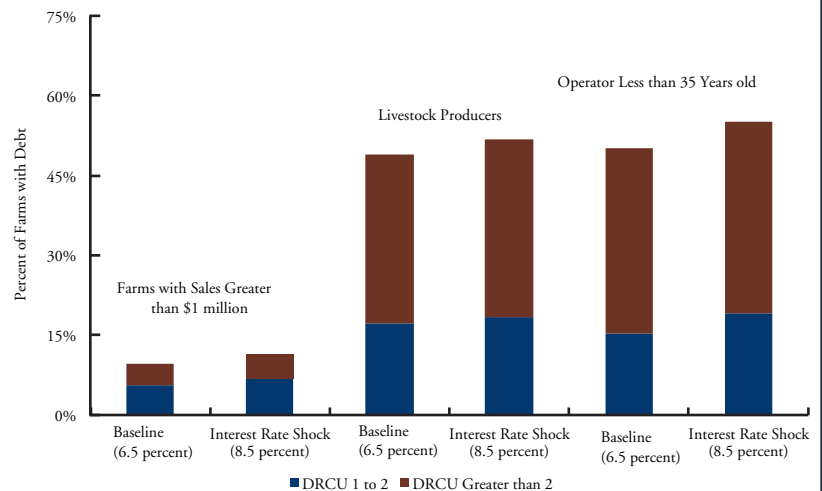
Rising interest rates would strain the ability of farmers to service their debt. Currently, farm interest rates are at historical lows, averaging 6.5 percent across operating and real estate debt and thus limiting farm financial stress.⁵ But if interest rates were to suddenly return to their 2007 average of 8.5

percent, how high would financial stress rise?

Large farms (sales of more than \$1 million) would experience little additional financial stress from the two-percentage-point rise in interest rates (Chart 3). The percentage of large farms with DRCUs above 1 would rise from 10 to 11 percent. The ample farm incomes of large farms would be more than enough to cover the increased interest cost.

Similarly, an interest rate hike to 8.5 percent would have a limited effect on livestock producers with debt. The number of livestock producers with DRCUs above 1 would rise from 49 to 52 percent. Little movement would occur

CHART 3
EFFECT INTEREST RATES RISING TO 8.5 PERCENT ON
REPAYMENT CAPACITY UTILIZATION (DRCU) RATIO RANGES



Source: 2008 ARMS data on farm debt and farm income

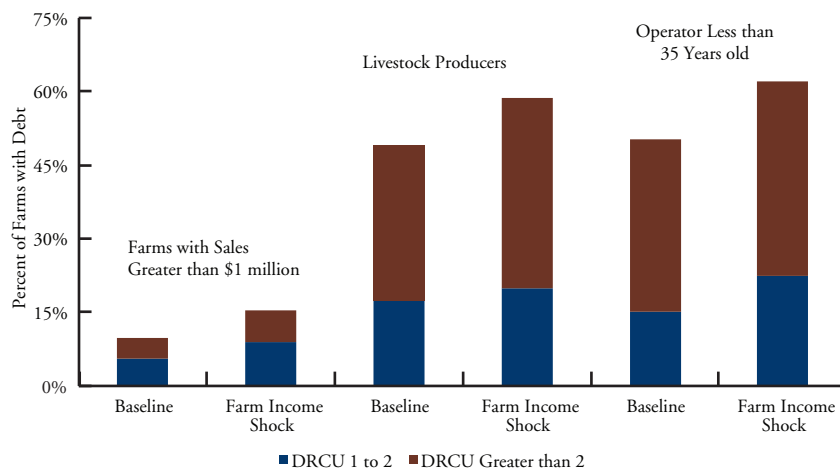
due in part to the months of losses and rising debt levels that have already put so many livestock producers into the high-stress categories.

Young operators, however, could feel greater financial stress in the event of an interest rate shock. The percentage of young operators with DRCUs exceeding 1 would rise from 50 to 55 percent. Their sensitivity to rising interest rates is likely due to their lower incomes. On average, young operators' income was one-third less than the average income of all producers with debt.

Declining farm incomes might also exacerbate financial stress. It is not unusual for annual net farm income to plunge 30 percent as it did in 2002, 2006, and 2009. Applying a one-year, 30 percent drop in income across today's producers indicates livestock producers and young farmers would be more likely to move into the highest-stressed category (Chart 4).

Few large farms would become highly stressed by

CHART 4
EFFECT OF FARM INCOMES FALLING 30 PERCENT ON DEBT REPAYMENT CAPACITY UTILIZATION (DRCU) RATIO RANGES



Source: 2008 ARMS data on farm debt and net farm income

falling incomes. A 30 percent drop in farm income would push the percentage of large farms with DRCUs above 1 from 10 to 15 percent. Again, higher farm incomes give most large farmers a debt repayment margin to weather such a drop in farm income.

Falling incomes alone could significantly increase financial stress for many livestock producers. Following a

severe income loss, the percentage of livestock producers with DRCUs above 1 would rise from 49 to 59 percent. The number of livestock producers under extreme financial stress (a DRCU above 2) would increase from 32 to 39 percent.

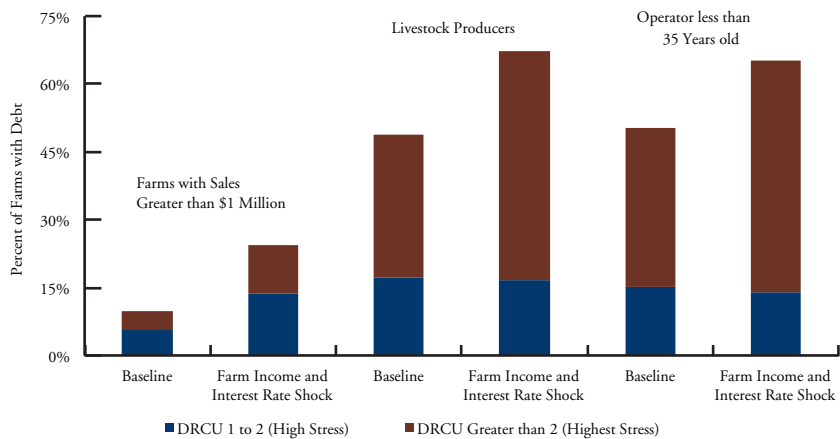
Young farmers are also susceptible to rising financial stress from falling farm incomes. With a 30 percent decline in farm incomes, the number of young farmers facing a DRCU above 1 would rise from 50 to 62 percent. Of these producers, nearly half could see their DRCU exceed 2. Young farmers are more sensitive to falling incomes because their average income is well below the average of all farmers.

A combination of sharply higher interest rates and a steep income decline would lead to greater impacts on farm financial stress. The last such period occurred in the 1980s, when farm interest rates doubled from 1976 to 1981, reaching a peak of 18 percent in 1981, and farm incomes declined by 30 percent.

Under this scenario, the number of financially stressed farms would jump significantly. The percentage of large farming operations facing DRCUs greater than 1 would more than double, rising from 10 to 24 percent (Chart 5). Yet, the greatest stresses would emerge for livestock producers and young operators—farming operations with the weakest net farm incomes. Under record-high interest rates and sharply falling incomes, the number of livestock producers with DRCUs above 1 would soar from 49 to 67 percent, and the number of young operators with DRCUs above 1 would rise from 50 to 65 percent.

Moreover, this acute financial shock would lead to a steep rise in the percentage of farms under severe stress. The number of severely stressed large farmers—those with DRCUs greater than 2—would nearly triple, rising from 4 to 11 percent. Livestock producers and young farmers would again experience the most severe financial stress because their weak net farm incomes would not be

CHART 5
EFFECT OF FARM INCOMES FALLING 30 PERCENT AND INTEREST
RATES RISING TO 18 PERCENT ON DEBT REPAYMENT CAPACITY
UTILIZATION (DRCU) RATIO RANGES



Source: 2008 ARMS data on farm debt and net farm income

enough to absorb the shock. The percentage of producers with DRCUs above 2 would rise from 32 to 51 percent for livestock producers and from 35 to 51 percent for young operators.⁶

Conclusions

Over the past year, historically low interest rates and rising incomes have allowed farmers to service elevated debt levels that are concentrated among a few farm types. This analysis shows, however, that a financial shock—an increase in farm interest rates, a decline in farm income, or both—could increase financial stress quickly, especially among livestock producers and young operators. A surge in financial stress among livestock producers, who hold half of all farm debt, would be of particular concern to agricultural lenders.

ENDNOTES

- ¹Calculation based on National Agricultural Statistics Service land survey.
- ²Calculations based on the most recent Agricultural Resource Management Survey (ARMS) data (2008), which is available from the United States Department of Agriculture’s National Agricultural Statistics Service and the Economic Research Service.
- ³This analysis uses the most recent 2008 Agricultural Resource Management Survey (ARMS) data from the U.S. Department of Agriculture (USDA) to calculate individual farm DRCUs, assuming an interest rate of 6.5 percent. The following assumptions and calculations are taken from the Economic Research Service of the USDA and can be found at http://www.ers.usda.gov/Briefing/farmincome/glossary/def_drcu.htm. Key assumptions are the maximum loan payment is based on a minimum debt service coverage ratio of 1.25, the average non-real estate interest rate is assumed to be 6.5 percent, and the repayment term is 7 years.
- ⁴The analysis only considers the effect of a one-period shock on the DRCU. A shock lasting for multiple periods was not analyzed.
- ⁵All interest rates are based on data from the Federal Reserve Bank of Kansas City’s Survey of Agricultural Credit Conditions.
- ⁶This analysis only explores the impact of a one-year interest rate and income shock. A sustained period of record-high interest rates and low farm incomes would be expected to have a greater impact on farm financial stress for all producers.