William McD. Herr's Farm Land Prices

After almost 30 uninterrupted years of rising farm land prices, the dam burst. A crack was first noticed in 1981 but was not viewed as serious. After all, similar cracks of one or two percent occurred in 1950 and 1953 but within a year were sealed.

This time, however, the rate of discharge grew wider and deeper. At present the average level of farm land prices in the U.S. is about 30 percent below the high watermark reached in 1981 and has drained economic and personal vitality from the farm sector for more than 6 years.

Some Land Facts

This is the second worse catastrophe to hit the farm real estate market. Only the one which began in 1920 was longer,—13 years—and deeper, nearly 60 percent from peak to trough.

Another fact is even more ominous. The two largest annual declines in U.S. farm land prices on record occurred in 1932 and 1933—at the end of the 13 year period of decline. Some maintain that a similar "sell-off," which frequently culminates bear markets in commodities and stocks, must occur before this decline in land values will end.

Others indicate that the downward pressure will end when farm land cash flows. That is, when net earnings from farm land equals annual finance costs (principal and interest) associated with buying land. And indeed there are reports that such levels have been reached in some areas. But just as these hopeful signs develop, a new outpouring of grain production in the U.S. and abroad keeps commodity supplies at burdensome levels, stifles foreign demand, and weakens market prices. These conditions threaten to reduce farm land earnings further and thereby send land prices even lower.

In order to gain some notion of when land prices will stabilize or increase, it is necessary to understand land value theory and principles and how participants in the land market apply these principles in their decisions to buy or sell land.

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Land Value Theory

The value of an asset is determined by its net earnings. The validity of this statement can be deduced by analogy. For example, a deposit of $1000 in a savings account which pays 6 percent annually will yield $60 of income per year in perpetuity. Therefore, if a piece of farm land will provide $60 of income per year, and the interest rate is 6 percent, then land is worth $1000, or so theory suggests.

However, we all know that farm land prices and returns to land do not reflect this relationship exactly. The question is, why is this the case? Many years ago Frank Knight wrote: "... principles alone do not make it possible to predict the course of real events ... They must be filled in with data ... as well as qualified to allow for various departures from the behavior pattern of economic rationality."

Land Value Realities

The first consideration is, "What constitutes net returns to farm land?" Certainly, the check received when cotton is sold is part of the returns, so are government payments. And the cash-expenses to grow the crop is a cost. The owner's labor and management is a "cost" too, but the worth that farm land owners put on their labor and management varies widely and is undoubtedly related to their alternative opportunities. While unmeasured, the psychic income that goes with owning farm land is part of the returns many take into account, when they bid at a farm land auction.

The second consideration is, "What is the appropriate interest rate to use?" Some argue, and I think they are correct, that many farm land owners are willing to accept returns on their land that are less than they will accept from their bank accounts. Historically, many accepted a 3 or 4 percent annual return because they also saw land appreciate at say an annual rate of 5 percent per year. Thus, their investment was earning 8-9 percent.

Conceptually, the interest rate should reflect the returns which could be earned on alternative investments with characteristics similar to farm land—i.e., similar appreciation potential, liquidity and risk. Compared to some earlier decades, investment in farm land currently seems to have less appreciation potential. It has become less liquid and more risky, causing investors to raise their discount rate.

Thus, farm land prices reflect the changing rank of farm land among investment alternatives of farm land buyers. In the 1970s many placed farm land at or near the top of their lists of desirable investments. In the 1980s its rank has been lowered. This is very much akin to the downgrading of corporate securities from, say, triple A to single A or lower.

A Huge Dose of Expectations

Of course, it is not just current returns and current interest rates that affect farm land prices. Prices at any point of time reflect expectations as well as current conditions. Expected changes in returns and interest rates affect bids for farm land as does expected changes in the price of farm land itself.

For example, assume an individual has a 20 year planning horizon, expects the 1987 net return of $60 to continue at that level for the period and the interest rate is 6 percent. Under these circumstances one would be willing to bid $690 for land. However, our bid price would be greatly different if we expected the per acre return to grow every year by 3 percent, or if we expected it to successively decline by 3 percent for 20 years. This range of expectations would cause our bid price to range from as high as $875 to a low of $555 per acre.

Examples of the importance of understanding the expectations of market participants abound. Currently an expensive farm program helps hold net returns to farm real estate at a higher level than would occur in a free market. In fact as much as one third of the sector's net return is geared to government programs.

Some questions are obvious: Can that level of support continue in an environment of record budget defi-

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cits and Gramm-Rudman? If deficits are not brought under control will a new era of inflation and higher interest rates occur? And then there are expectations with respect to technology, information processing, world agricultural output, population and income growth rates, foreign demand and . . . ad infinitum.

Often overlooked, however is how changes in the rates of change affect current values of farm land. Let's return to our example of farm land that was expected to earn $60 per acre when the planning horizon was 20 years and the interest rate was 6 percent. Theory suggested a value of near $690.

Now suppose that the $60 return was expected to increase 3 percent per year. That means that the return would be about $78 in year 10 and $105 in year 20. With a 6 percent interest rate these expectations translate into a current bid price of near $875. In year 10 these same expectations—increase growing by 3 percent per year, interest rate 6 percent and the planning horizon 20 years—translate into a bid price at that time of about $1175 per acre.

But suppose, in year 10 it becomes evident that the returns are not going to increase any more. Instead, the expectation is that returns will not decline but remain at $78 per year per acre for the next 20 years. Then the bid price would be almost $900 per acre. So in this scenario the land price drops from $1175 to $900 per acre even though returns do not drop. The difference is the changed expectations with respect to the future.

Whether it is a professor trying to understand land prices or a potential seller or buyer of land; expected returns, and expected interest rates enter into our calculations. Thus an already complex situation becomes further complicated when changes in expectations are involved. However, if we are to understand land prices we are challenged to understand and anticipate forces that affect expectations.

This is not idle speculation. Knowledge of current facts and awareness of theory are important to understanding changes in land prices and in making choices to buy or sell farm land. But especially important are the expectations for the future. Because in reality these are what determine farm land prices.