Lenders such as this bank will soon be able to sell farm real estate mortgages to Farmer Mac. Photo courtesy Economic Research Service.

Farm Finance: The New Issues

by Michael Boehlje and Glenn Pederson

The agricultural financial crisis of the 1980s demonstrates the need for imaginative and new approaches to financing production agriculture. Changes that allow and encourage non-operators to hold greater amounts of equity in farm real estate and equipment, and foster more leasing of land, livestock, and equipment assets would shift risks to non-operators and potentially make the sector more resilient to the effects of unanticipated declines in returns.

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The financial crisis is not over for some farm and agribusiness firms. However, it is time to think about four sets of issues that have been highlighted by the financial crisis of the 1980s:

- The need for diversified financing.
- Potential changes in arrangements for agricultural debt.
- Opportunities for more and different individual and institutional investors to become equity owners of farm assets.
- Innovations in the leasing of agricultural assets by farm operators.

The Need for Diversified Financing

The experience of the 1980s (as did the 1930s) points out the risks associated with agriculture's narrow financial base. For years, farmers and ranchers have considered only two basic sources of funds as legitimate for financing farming: internally-generated equity and debt. Leasing land or machinery and equipment was used as a way to start farming, but most farmers consider leased assets unacceptable as part of their permanent financial structure. External, off-farm investor equity is even more suspect as a way to capitalize farming operations. Consequently, farmers, unable to expand their farms with past savings or an inheritance, typically borrow the money, rather than arrange leases or attract outside equity capital.

The result has been a narrow capital base with relatively high debt/income ratios given the risks associated with land and farm equipment ownership. Farmers receive most of the

financial reward, but they also assume most of the financial risk. If the farmer loses money, the lender still expects repayment of principal and interest. This compares with an outside investor who would typically share potential losses in exchange for sharing in the financial rewards (such as distribution of profits and appreciation of farm assets).

Equity capital losses (such as the drop in land prices during the past 5-7 years) should encourage many farmers to re-evaluate equity-sharing agreements, where risks of losses and opportunities for rewards are shared among equity holders. For example, some farmers may find it advantageous to work out limited partnership arrangements or investment contracts with individual investors through finance intermediaries.

Changes in Debt Arrangements

Along with the need to diversify financing there are opportunities to use new approaches for handling debt. Three important issues dominating agricultural debt markets relate to initiation of new instruments, changes in debtor/creditor rights, and new institutions to make farm loans.

New Instruments. New financing instruments and arrangements allow lenders to use shared appreciation mortgages or guaranteed buy-back arrangements. These innovations reduce costs and risks for the borrower and are useful to lenders as merchandising techniques when disposing of properties acquired when borrowers default.

To date, shared appreciation mortgages (SAMs) have been used primarily in nonfarm residential and commercial real estate markets. However, they have also been written by some lenders on new and restructured farm real estate loans. A SAM has a clause stipulating that the lender and borrower participate in market value increases of the real estate over the life of the loan. A SAM may carry lender concessions like a lower contract rate of interest (which may also be fixed for a designated period) in anticipation of the lender sharing in future capital gains.

For example, if the market rate of interest on a 30-year mortgage without a SAM provision is 12 percent, a farmer might negotiate for a 9 percent interest rate with a 7-year, 50/50 SAM. If land values increase by 20 percent over the 7-year life of the SAM, the lender receives 10 percent (.5 x .2) of the initial sale price from the borrower either in the form of cash or through a reamortization and adjustment of the mortgage balance. The settlement amounts to half of the difference between the initial purchase price and the final sale price (or appraised value) being allocated to the borrower and half to the lender.

A guaranteed buy-back arrangement on farmland gives the buyer (borrower) the right to sell the property back to the seller (lender) at the initial appraised value or sale price anytime until the agreement expires. One could think of the guaranteed buy-back of farmland as similar to a put in an options market. The guaranteed buy-back feature protects the asset buyer against falling asset prices. The lender stands ready to purchase the property, providing both liquidity and insurance against any potential capital loss to the borrower. During 1987, for example, the St. Paul Federal Land Bank sold farmland (acquired through settlements of nonperforming loans) with a 5-year buy-back guarantee to qualified buyers. The bank agreed to buy the farmland back at the original sale price at any time during the 5-year period.

Several other innovations are being introduced. For example, some lenders are providing their farm borrowers with packaged credit, an appropriate mix of short-, intermediate,

Table 1.—Relationship between loan term and interest rate*

Initial loan term (years)	9%	10%	11%	12%	13%
	Years to repay				
5	4.8	5.0	5.1	5.3	5.5
6	5.7	6.0	6.2	6.5	6.8
7	6.6	7.0	7.3	7.7	8.2
8	7.5	8.0	8.4	9.0	9.6
9	8.4	9.0	9.6	10.3	11.3
10	9.3	10.0	10.8	11.8	13.1
11	10.1	11.0	12.0	13.3	15.2
12	11.0	12.0	13.2	15.0	17.7
13	11.8	13.0	14.5	16.8	21.0
14	12.6	14.0	15.9	19.0	25.8
15	13.3	15.0	17.3	21.5	36.7

*The original loan is assumed to carry a $20,000 balance, a 10 percent interest rate, and be repaid in constant annual amounts.

Table 2.—Farm loan market shares

Lender	1980	1983	1986
	Percent of total loan volume outstanding		
Banks	23	24	26
FCS	32	34	29
LICs	7	6	6
FmHA	10	11	15
Individuals & Others	28	26	23
	Loan Volume Outstanding ($ Billion)		
Total *	$165	$192	$157

*Total excludes Commodity Credit Corporation loans and farm household debt.

Table 3.—Farm loan volume growth rates between 1980 and 1986

Lender	1980-86	1983-86
	*Percent per year**	
Banks	1.5	(4.2)
FCS	(2.6)**	(12.2)
LICs	(2.7)	(4.9)
FmHA	5.5	3.6
Individuals and Others	(3.7)	(10.1)
Total	(0.8)	(6.8)

*Growth rates represent the compound annual rates at which outstanding loan volume increased (decreased) between the two years indicated.
**Numbers in parentheses are negative value.

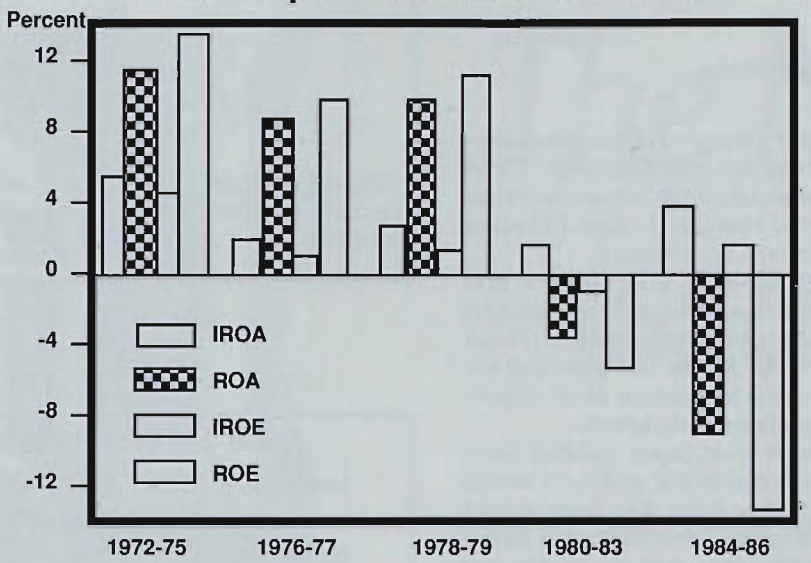
and long-term financing. Lenders are also selectively providing long-term financing of real estate with a fixed interest rate for a specific time period (shorter than the term of the loan). In addition, it will soon be possible for lenders to sell farm real estate mortgages to the Federal Agricultural Mortgage Corporation (Farmer Mac) that is being established pursuant to the Agricultural Credit Act of 1987.

Another new debt instrument which merits investigation would require fixed annual payments but provide a variable term loan to adjust for changing interest rates. The variable term loan lets the lender "pass through" changes in interest cost to the borrower without significantly increasing repayment risk.

Table 1 illustrates the relationship between changes in the loan interest rate and the term of hypothetical amortized loans, assuming the total annual loan payment is held constant. We assume a $20,000 loan with an initial interest rate of 10 percent for loan maturities from 5 to 10 years. If interest rates increased by 2 percentage points (to 12 percent), the lender could increase the loan yield by raising the loan rate to 12 percent (a straight pass through). Alternatively, the lender could obtain a 12 percent yield by increasing the loan maturity from 5.0 to 5.3 years and leaving the loan rate at 10 percent. In the latter case the borrower's annual payment would remain constant and credit risk would not be increased.

Table 1 also illustrates the range of loan maturities and interest rate changes for which a flexible-term loan option might be considered feasible by lenders. For example, let's assume that up to a 30 percent increase (from 10 to 13 percent) in the loan interest rate is considered possible. Then loans with original maturities up to 9 years could, alternatively, have the maturity extended by 30 percent (up to 12 years) instead, and be potential candidates for maturity adjustments rather than rate (annual payment) adjustments. Of course, adopting a combined flexible-term, flexible-rate loan policy could extend the usefulness of this approach beyond the 10 year maturity range. It would reduce variability of annual payments and thus reduce repayment risk.

Annual Average Rates of Return for Farm Operators and Landlords



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Debtor/Creditor Rights. Recent legislative changes in debtor/creditor rights have changed the balance of property rights of borrowers and lenders. Changes in Chapter 12 bankruptcy rules, mandatory mediation in selected states, increased exemptions under state bankruptcy laws and increasing difficulty for lenders to obtain deficiency judgments have all tipped the scales. (A deficiency judgment is a legal action taken by a lender to obtain additional payment from the debtor if cash proceeds from liquidating the collateral are insufficient to repay the debt obligation).

Lenders say the recent legislative changes have left them with fewer rights and more limited options (than they previously had) when borrowers default. However, the long term implications of these changes in debtor/creditor rights are unclear. One consequence may be reduced credit availability for marginal customers. Another consequence may be higher lender transaction costs, higher interest rates because of increased risk, and greater required documentation of financial performance (balance sheets, financing agreements, security agreements, etc.). The resource allocation and income distribution consequences of these changes in debtor/creditor rights also raise a number of important policy issues that should be investigated.

New Institutions. The volume of agricultural debt and the institutions making farm loans are changing. Aggregate farm debt (excluding farm household debt and CCC loans) began shrinking in 1984. By the end of 1986, loan volume was nearly 20 percent below the 1983 peak. During 1983-1986, the rate of decline in bank loan volume (-4.2 percent) was significantly less than the decline in the Farm Credit System's loan volume (-12.2 percent) as reported in Table 3. Several reasons have been cited for the decline including reduced farm profitability, government commodity programs, lender charge-offs of nonperforming farm debt and high real interest rates.

A critical dimension of the debt picture is changes in loan quality. These changes in quality are not revealed by loan volume statistics. While deterioration in farm real estate loan quality was a major factor in the decline of the Farm Credit System, real estate loans at commercial banks have increased.

Competition among farm lenders to attract and retain strong farm borrowers takes many forms, and competition from nontraditional farm lenders is an increasingly important stimulus for innovation. Potential new entrants currently evaluating the agricultural credit market include:

- The savings and loan industry with packages of structured short-, intermediate- and long-term debt combined with equity financing through limited partnerships and other legal instruments.
- Input supply firms that will not only package credit with product sales, but may add a finance subsidiary as a profit center within the corporate structure.

Credit unions looking for portfolio diversification.

- International financial institutions (including Rabobank based in the Netherlands, Credit Agricole based in France and Barclays based in Great Britain).

It is not yet possible to anticipate the influence of these new players on the institutional structure of agricultural credit markets.

New Equity Owners Needed

The drop in farm real estate values in recent years has eroded a significant proportion of the farm equity held by farm owner-operators and other farm landowners. Total equity in farm real estate increased from $338 billion to $686 billion from December 1975 to December 1981. By the end of 1986 this equity had dropped to $422 billion. These changes in farm real estate values (and in turn equity) imply changes in rates of return for farm owner-operators and other landowners. Negative total returns on production assets (ROA) during 1980-86 reflect both low income returns on total assets (IROA) and large capital losses due to declining asset values (Figure 1).

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To illustrate, the average annual income return on equity (IROE) ranged from -0.3 percent (1980-83) to 1.7 percent (1984-86). Even during the 1972-75 "boom," the average income return on equity was only 4.6 percent. By comparison the income return on assets during 1976-1979 was slightly over 2 percent, and the income return on equity was only slightly over 1 percent. When income returns to equity capital are coupled with the capital gain (or loss) component, the combined average total return on equity capital (ROE) of operators and landlords was sharply negative throughout 1980-86.

Rebuilding equity capital through internally generated earnings will be difficult for many farms and agribusiness firms.

There are three major issues related to rebuilding the equity capital base.

First, rebuilding equity capital through internally generated earnings will be difficult for many farms (as reflected in Figure 1) and agribusiness firms—including many of the regional and local input supply and product processing cooperatives. Now may be a logical time for some farmers and agribusinesses to sell investment packages for some of their more profitable enterprises. A possibility would be for farm landowners to sell limited partnership interests in farmland to outside investors. Another possibility would be for cooperatives and corporations to sell stock in their profitable agribusiness subsidiaries in regional and national stock markets.

Second, this may be a good time to assess the role of private and public sector venture capital arrangements. These innovations would potentially stimulate movement of equity funds into selected components of the farm and agribusiness sector. The Greater Minnesota Corporation is a public-private venture capital partnership with the objective of providing financial capital to new rural businesses that are developing new products for new markets.

Third, a look at the future of new entrants into agriculture may prompt us to consider the New Zealand example. In New Zealand, a savings subsidy program operates in which the government matches the amount that a prospective farmer voluntarily saves to acquire agricultural assets. This program would potentially encourage equity accumulation and reduce the financial risk of new entrants. It is different from the U.S. financing approach (subsidized interest rates and lenient credit terms) which encourages excessive leverage and results in high financial risk.

The argument here is not for additional investment capital in agriculture that increases the size of the productive plant. Rather, as the equity base for agriculture is rebuilt debt (as a proportion of total capital) should continue to shrink to reduce the financial risk now faced by highly leveraged producers in the sector.

More Leasing Needed

A final area that needs more analysis is the role of leasing in agriculture. Leasing has always been a more common approach to "financing" the control of farm real estate compared to other capital assets. Yet, even leased real estate has typically been seen by farmers as a temporary measure to be used only until funds are available to buy the land. However, leased assets (real estate or nonreal estate) might play a permanent part in many farm businesses. In contrast to farming, much of the equipment and machinery used in nonagricultural production/manufacturing is leased. Why not in agriculture? We can only speculate that federal tax laws, as well as other characteristics in the leasing market have played a role.

The rental market for farmland is shaped by property laws, custom, and public policy. Traditional arrangements give farm tenants few property rights—typically only one-year leases, no compensation for improvements, etc. Tenants have little control over a large part of their resource base. It's no wonder they have a strong economic incentive to become owner-operators.

Changes in the balance of tenant-landlord property rights, including the potential for longer term leases and compensation to the tenant for improvements, could make renting farmland more attractive to farmers.

An increase in tenancy may improve the agricultural sector's financial resiliency.

An increase in tenancy may improve the agricultural sector's financial resiliency in two important ways. First, control of resources through shorter term leasing, rather than long term ownership contracts, potentially reduces the financial commitments associated with debt-financed real estate acquisitions. Second, a broader land ownership pattern expands the number of investors who absorb losses. C