Some Current Aspects of Agricultural Finance and Banking in the United States

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For the past twenty years or so, farm credit markets and mechanisms in the United States have been recommended to others as models worthy of emulation. Analysts commenting on overall current developments have generally concluded that "credit-worthy" operators of commercially viable farms could obtain "adequate" financing at "reasonable" rates and other terms. It is true that many specific aspects of the system were continually being questioned and reexamined—whether groups such as expanding farmers, beginning farmers, or marginal operators were obtaining economically or socially desirable amounts or terms of credit; whether optimum terms were being used for machinery and other types of loans; and whether certain lenders such as small rural banks could cope with increasing individual and/or total farm loan demands (Melichar 1975). But these concerns represented "fine-tuning" of a system with which most borrowers, lenders, and analysts were generally pleased (Brake and Melichar).

In discussing the successful performance of U.S. farm credit markets, analysts generally emphasize the diversity of lenders meeting various farm loan demands and the suitability of lending terms and techniques. Another integral aspect, however, is the very favorable farm loan repayment record that has generally prevailed since the beginning of World War II and which certainly underlies the heralded responsiveness of lenders to farm loan demands. The lack of severe farm loan repayment problems in the 1950s, during what was regarded as a postboom era, made a profound impression on lenders and on research workers in farm finance. This favorable experience led them first to accept greater relative use of debt financing and in short order to actively encourage more highly leveraged financial positions as a means of increasing the growth rate of the income and wealth of individual farmers. This paper examines the possibility that the coincidence of these attitudes with the boom in farm capital expenditures and land prices that began in 1972 may culminate in the reappearance of problems that U.S. farm credit markets have not faced for nearly four decades.

In its 200 year history, U.S. agriculture has experienced a number of boom-bust sequences that dominate its financial history. Jones and Durand note that four major farm investment and land-price booms preceded World War II, with each followed by about two decades of severe farm mortgage debt distress. The boom of World War I was triggered when operators' real net farm income jumped by 48% between 1916 and 1917. In spite of subsequent annual declines that by 1920 had pushed such income below its 1916 level, capital expenditures and land prices rose substantially until 1920. The boom ended when farm income virtually collapsed in 1921 and remained relatively depressed during that decade. The national index of farm land prices fell during each year of the 1920s, registering a total decline of 33% by 1929. The effect on farm lenders was correspondingly grave. For example, nearly 6,000 commercial banks failed during the period 1920–29, most of them in rural states. As is well known, the onset of the Great Depression further aggravated these farm financial difficulties.

After this period of financial adversity, the farming sector experienced another boom during 1941–52. This boom was followed by widespread financial problems that were characterized as a "cost-price squeeze" but not by general debt-repayment distress. The primary

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The analyses and conclusions presented are solely those of the author and do not necessarily reflect the views of the Board of Governors or of other members of its staff.

new factor thought responsible for this result was the government price support program for major crops, which limited the decline in net farm income. Financial innovations such as amortization and longer maturities of farm mortgage loans, federal insurance of bank deposits, and federal lending programs were also considered to have been helpful.

Yet another boom began in 1972. With the aforementioned programs and arrangements still in place, most farm credit market participants and analysts appear to have implicitly adopted a sanguine view of the postboom future, in which experience more adverse than that of the 1950s is regarded as improbable. A hallmark of this view is that farm land prices are not likely to fall significantly, if at all. Apparently, any postboom financial distress is expected to be mild or of short duration.

This view may be, in part, still another legacy of the experience of the 1950s; thus, it may be useful to take note of the many differences between the financial situation then and now. First, however, some major uncertainties should also be noted. For instance, at the end of the earlier boom it turned out that farm land prices were consistent, on average, with the level at which the federal government was initially willing to support the prices of major crops. The postboom fall in the national index of land prices was limited to a slight decline in a single year, 1953. The degree of compatibility directly after this boom remains to be revealed. Recall, also, that analysts in the 1960s agreed that the combination of decreasing unit costs of production and stable, supported output prices was the chief factor responsible for the upward trend in land prices after 1953 (Brake and Melichar, p. 442). A high rate of technological advance and relatively stable prices of inputs such as fertilizer and fuel contributed much to the steady reduction of unit costs. At present, the near-term return of such favorable trends seems doubtful.

In addition to these uncertainties, there are several major differences between the current financial situation and that of the early 1950s. The boom that followed World War II was unique in that, for a number of reasons, it did not develop the financial excesses present in earlier booms and perhaps in the current one as well. First, the period of relatively favorable real farm income that fueled the boom was of extraordinary length. Operators' real net farm income rose by 79% between 1940 and 1942, maintained that level for seven years (1942–48), and then held at a level only about a fourth lower for another four years (1949–52). Operators' real net farm income rose by 103% between 1971 and 1973 to trigger the current boom, but, in sharp contrast, it has since fallen significantly in each succeeding year and by 1976 was back at approximately the 1971 level (Melichar and Sayre 1976).

Because of the longer period of relatively high income and also because machinery and construction materials were relatively scarce during the first half of the earlier boom, farmers' liquid financial assets (currency, bank deposits, and U.S. savings bonds) had by the end of the boom risen to a level of 8.5% of total assets, more than twice the present level of 3.5% (Melichar and Sayre 1976). Rural commercial banks were also very liquid at the end of the previous boom, in contrast to their present tight situation, which will be detailed later.

Finally, and perhaps most importantly, debt played a limited role in financing the earlier boom. To begin with, total outstanding debt declined through 1945. Outstanding debt then doubled between 1946 and 1953, but the absolute increase was small compared with the large capital flows of that period. In this respect, the earlier experience was a highly untypical boom.

It is characteristic of most booms that euphoric projections of future income streams are widely accepted by participants, both borrowers and lenders. But during and immediately after World War II, most participants expected a rapid retreat to prewar levels of commodity prices and income. In addition, they (and farm finance analysts as well) were highly cautious toward use of debt as a result of the disastrous experience of preceding decades. These expectations and attitudes inhibited both capital spending and the development of highly leveraged financial positions. In the postboom era of the 1950s, therefore, there were comparatively few financial excesses to unwind. The farming sector entered the period with relatively large credit reserves—especially after the level of land prices proved sustainable—and with a major lender group, the rural commercial banks, in a good position to accommodate loan renewals and new loan demands.

The current boom and its financing present significant contrasts with this earlier experience, which may be explored with the aid of tables 1 and 2. A sharp increase in each of the

Table 1. Capital, Credit, and Income Flows (Annual Average, Billions of Dollars)

Item	1950–54	1955–59	1960–64	1965–69	1970–71	1972	1973–75
Capital flow	7.6	7.2	8.6	11.9	13.6	18.6	24.6
Real estate purchases	2.3	2.8	3.3	4.4	5.0	8.5	10.3
Capital formation	5.3	4.4	5.3	7.5	8.6	10.1	14.3
Machinery	3.1	2.8	3.2	4.6	4.9	5.7	8.3
Livestock	0.5	0.1	0.3	0.1	0.6	0.4	0.4
Stored crops	0.1	0.2	—	0.3	0.1	0.4	1.2
Financial assets	0.1	−0.1	—	0.4	0.6	1.2	0.7
Buildings	1.5	1.4	1.8	2.2	2.4	2.4	3.7
Financing of capital flow	7.6	7.2	8.6	11.9	13.6	18.6	24.6
Debt (net increase in debt)	0.9	1.6	2.3	3.0	3.3	6.7	9.0
Internal	6.6	5.6	6.2	8.9	10.4	11.9	15.6
Cash flow	18.5	16.5	17.6	20.9	23.6	30.0	44.3
Addenda							
Capital consumption	3.2	3.9	4.6	5.8	7.1	7.9	10.7
Flows excluding capital consumption							
Net capital flow	4.4	3.3	4.0	6.1	6.5	10.7	13.9
Net capital formation	2.1	0.5	0.7	1.7	1.5	2.2	3.6
Net income	15.3	12.6	13.0	15.1	16.5	22.2	33.6
Net internal financing	3.4	1.7	1.6	3.1	3.3	4.0	4.3

Sources: Melichar and Sayre 1976. Earlier articles by the author define and discuss each series (Melichar 1971, 1973).

major components of capital flow occurred during 1972 and 1973 (table 1). Levels reached in 1973 were roughly maintained through 1974 and 1975. Farm cash flow (gross income minus production expenses other than capital consumption) also rose through 1973 and then leveled out. In tables 1 and 2, the first six years of this decade are split into three periods that reflect this overall pattern.

Capital flows are financed either through

Table 2. Relationships among Capital, Credit, and Income Flows (Annual Average, Percentage)

Analytical Ratio	1950–54	1955–59	1960–64	1965–69	1970–71	1972	1973–75
A. Relative burden of capital flows							
Capital flow/cash flow	41	44	49	57	58	62	55
Real estate purchases/cash flow	12	17	19	21	21	28	23
Capital formation/cash flow	29	27	30	36	36	34	32
Net capital flow/net income	29	26	31	40	39	48	41
Real estate purchases/net income	15	22	25	29	30	38	31
Net capital formation/net income	14	4	5	11	9	10	11
B. Relative allocation of income flows to financing of capital flows							
Internal financing/cash flow	36	34	35	42	44	40	35
Net internal financing/net income	22	13	12	21	20	18	13
C. Relative repayment burden presented by debt financing							
Debt financing/cash flow	5	10	13	14	14	22	20
Debt financing/net income	6	13	18	20	20	30	27
D. Relative role of debt in financing of capital flows							
Debt financing/capital flow	12	23	27	25	24	36	37
Debt financing/capital formation	17	36	43	40	38	66	63
Debt financing/net capital flow	20	48	58	49	51	62	66
Debt financing/net capital formation	43	320	329	176	220	305	250

borrowing, measured by the net increase in outstanding debt, or from internal resources (calculated residually as capital flow less the increase in debt). Internal financing continues to be the major source of funds, but debt financing has increased sharply. In studying capital flows and their financing from internal and external sources, Tostlebe found it useful to observe the behavior and level of several ratios that express meaningful relationships among these series. Four categories of such ratios are presented in table 2, each responsive to a specific analytical question.[1] The ratios in part A of table 2 indicate the relative burden that the capital flow imposes on the cash flow of the farming sector (cash flow is also used for consumption and nonfarm investment). The relative burden increased significantly during the early and mid-1960s but has not risen since above the levels reached in 1965–67—a pattern that reflects the behavior of its capital formation component.

Part B shows the proportion of cash flow allocated to financing of capital flow. Surprisingly, in view of the huge cash flow of 1973, the proportion of cash flow allocated to internal financing both then and in the next two years was no higher than in the 1950s and early 1960s and lower than in the five years preceding 1973. Ratios in part C represent an attempt to derive an indication of the relative debt repayment burden presented by ongoing increases in debt. These indicators reached new high levels after 1971. Cash flow will have to rise in the future to keep this indicated increase in relative repayment burden from materializing. If, as in the 1950s, cash flow fails to rise, repayment of past borrowings is more likely to be burdensome.

It is evident that the farming sector has in recent years allocated less of its income stream to financing of capital flows and that it has employed increased debt financing relative to that income stream. In the 1950s such a shift occurred under the pressure of falling income, but in 1973 and 1974 a further shift occurred in the face of relatively high aggregate cash flow and income. One explanation is that these aggregate series may reflect a concentration of increased debt among a relatively small proportion of farmers, primarily among those who significantly expanded their operations. If future income should fail to meet their expectations, financial "excesses" may be revealed among this group.

Ratios in part D of table 2 simply show the percentage of capital flow or capital formation that can be regarded as financed by the increase in debt. The relative role of debt in financing capital formation during 1972–75 (64%) is the highest since that found by Tostlebe for 1915–19 (76%) and in particular far exceeds that during even the final stage of the last boom (28% in 1950–52).

In short, the current capital spending and land price boom has been debt financed to an extent not experienced since 1920. Thus, some apprehension about the near-term finances of the farming sector appears justified. Research and policy attention to means of dealing with financial stress seems in order.

All major lender groups have participated in financing the boom, but some have been more active than others and have increased their share of total outstanding farm debt. The cooperative farm credit system increased its share from 23% in 1970 to 31% in 1977, and over the same period the share held by commercial banks rose from 28% to 30%.

Each of these two groups has certain advantages and disadvantages, vis-à-vis the other, with respect to ability to cope with a period of financial distress in agriculture. For instance, the cooperative system, in contrast to most banks, has all of its loans in agriculture, but they are nationally diversified, whereas the loans of most banks are concentrated in a small region. Banks' sources of funds, consisting at rural banks mostly of local deposits, may suffer with reductions in farm income, while the cooperative system's sources would be largely unaffected by that event. On the other hand, extensive farm loan problems would eventually affect the cooperative system's ability to raise funds and would also increase their cost, whereas, with their deposit insurance and their more diversified portfolio, the supply of funds at many banks might be relatively unaffected by similar farm loan experience.

After considering such factors, it appears that the lending institution most vulnerable in the event of adverse farm loan experience is the small rural bank that is heavily involved in

[1] The ratios shown on a "net" basis represent an alternative but parallel approach, in which capital consumption (depreciation allowances and accidental damage) has been subtracted both from cash flow and from the capital formation component of capital flow (see the addenda to table 1). This approach implicitly assumes that the funds designated in the national accounts as capital consumption allowances are used to pay for an equal amount of capital expenditures. Thus, one focuses on net capital formation and net capital flow and examines how these flows are financed from net income and the net increase in debt.

Table 3. Insured Commercial Banks by Relative Involvement in Farm Lending, 31 December 1976

Item	All Banks	Farm Loans as Percentage of Total Loans at Bank: Under 5	5–24	25–49	50+
Banks					
Number	14,397	5,650	3,760	2,874	2,113
Percentage of total	100	39	26	20	15
Farm loans					
Billions of dollars	30	4	9	9	8
Percentage of total	100	14	30	30	26
Average per bank (million $)	2.1	0.7	2.4	3.1	3.6
As percentage of total loans	6	1	12	35	64
Total loans as percentage of					
Assets	53	53	54	54	54
Deposits	65	66	62	60	60
Deposits					
Billions of dollars	825	635	127	43	20
Percentage of total	100	77	15	5	2
Average per bank (million $)	57	112	34	15	9
Capital and surplus per bank (million $)	5.4	10.7	2.9	1.3	0.9

farm lending and at which farm income trends significantly affect deposit growth. Data in table 3 indicate that perhaps one-third of all commercial banks are currently in this category (last two columns of the table) and that such banks account for over one-half of all farm loans at commercial banks.

The most vulnerable group isolated in table 3, in the last column, is that comprised of the 2,100 banks with more than half (an average of 64%) of their loans in farming. While 15% of the nation's banks are in this group, and it accounts for 26% of all farm loans outstanding at banks, these generally small institutions hold only $20 billion, or 2.4%, of the nation's bank deposits. This sum is less than the deposits at each of the nation's three largest banks. Obviously, should adverse farm financial experience develop, it may prove desirable or necessary to give this group of banks attention and assistance very disproportionate to its relative importance in the nation's banking system and financial markets.

Given the inherently risky situation faced by these undiversified banks, it is disturbing to find in table 4 that their relative liquidity has very recently been drastically reduced, on average, from that maintained since the late 1960s. This development has resulted from the adverse impact of falling farm income on deposit growth and on loan repayment, as well as from new farm loan demands resulting both from falling income and from the need to finance increased stocks of grain (Melichar 1977). These trends are continuing as of mid-1977 (Melichar and Sayre 1977). Clearly, if the farming sector is now entering a postboom period, the small rural banks are in a far different situation than the one characterized by their highly liquid positions of the early 1950s. Again, research and policy attention might

Table 4. Average Loan/Deposit Ratios at Insured Commercial Banks by Relative Involvement in Farm Lending (%)

31 December	All Banks	Farm Loans as Percentage of Total Loans at Bank: Under 5	5–24	25–49	50+
1960	52	53	52	44	43
1961	51	52	51	43	43
1962	54	55	53	45	45
1963	58	59	57	47	47
1964	58	60	55	48	48
1965	61	63	56	50	49
1966	62	64	60	52	52
1967	60	61	56	52	53
1968	61	62	57	52	51
1969	66	68	60	53	53
1970	62	63	58	53	56
1971	61	62	58	53	54
1972	63	65	59	53	52
1973	67	70	61	55	52
1974	68	70	61	56	53
1975	64	66	60	57	55
1976	65	66	62	60	60

well be directed to the potential financial stress and its amelioration.

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Reprinted from
AMERICAN JOURNAL OF AGRICULTURAL ECONOMICS
Vol. 59, No. 5, December 1977