## Paper No. 24

Conference on Rural Finance Research

San Diego, California July 28 - August 1, 1977

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

## by

Emanuel Melichar<br>Senior Economist Division of Research and Statistics $\therefore$ Board of Governors of the Federal Reserve System Washington, D.C. 20551

August 1, 1977

Conference Sponsors
The Agricultural Development Council The American Agricultural Economics Association The Ohio State University

# Some Current Aspects of Agricultural Finance and Banking 

 in the United StatesEmanuel Melichar*<br>Board of Governors of the Federal Reserve System

For the past 20 years or so, farm credit markets and mechanisms in the United States have been cited to others as models deserving of admiration in their entirety and worthy of enulation with respect to many of their major femtures. Within the United States, analysts comanting on overall current devalopments have during this period generally concluded that "credit-worthy" operators of commerciallyviable farms could obtain "adequate" financing at "reasonable" rates and other terns--presumably as judged by comparison with loan standards, amounts, and terms for other businesses and consumers. In discuasion of factors responsible for such general satisfaction with the major portion of farm credit syatems, the diversity and operating techniques of lending institutions have received, and continue to receive, the most attention.

The loan demands of comercial farmers, it is noted, are met through a variety of channels which include individual lenders-who are primarily sellers of farms-and also commercial, cooperative, and government institutions. Well over half of the 14,000 comercial banks-both large and small-make significant amounts of farm loans. A small number of life insurance companies--which, however, includes several of the very large companies--provide farm mortgage loans. The cooperative credit system taps central money markets for funds to make both operating and mortgage loans. Govemment crop torage loans are available to producers of several major crope. Farmers affected by general physical disasters such as droughts, storm, and floods are typically declared aligible for omergency loans from or guaranteed by the Federal government. Since 1974, livestock producers who suffer severe financial losses resulting from market factors have also been eligible for Federally-guarantoed loans. Farmers with relatively small or unproductive unite who experience difficulty in obtaining loans from the comercial and cooperative lending institutions are eligible for direct loans from the Federal government, and also for Federally-guaranteed loans. The Federal government also provides guarantees for rurel housing loans.

While generally satisfied with the adequacy and operation of these farm credit mechanisms as a whole, borrowers, lenders, and analysts have during this period been concerned about numerous specific aspects of the system. Analysts have been uncertain, for instance, whether certain groups of farmers-much as expanding farmers, beginning farmors, or marginal operators-were obtaining econonically or socially desirable amounts or term of credit. Analysts almo found that certain types of farm loan demands were favored by many luaders, and that repayment terms commenly used for some types of loans wace less than optimum. It has also been apparent that some lending institutions-primarily the small rural banke-were having problams in coping with increasing individual and/or total farm loan demands. These and many other problens of similarily linited scope received considerable attention from both research workers and crodit market participants.

There is, however, another integral aspect to the overall "succeas" of U.S. farm credit mechanisms, and that is the very favorable loan repayment record that has generally prevailed since the beginning of World War II. This record is, in retrospect, a primary factor underiying the hecalded responsiveness of U.S. farm cradit institutions to farm loan domands. The lack of severe farm loan repaynent problens in the 1950's. during what mas considered to be a post-boon ere, made a profound impression on lenders and farm finance researchers. This favorable experience led then first to accept greater relative use of debt financing, and in short order to aotivaly ancourage more highly leveraged financial positions as a means of increasing the growth rate of the income and wealth of individual farmorm. If, because of recent exceeses, widespread debt repaynent difficultice should reappear, this fundamental problen would temporarily overshadow the other credit market concerns that I have noted. I have therefore chosen this topic as the primary focus of this paper.

In its 200-jear hiatory, U.S. agriculture has experienced a number of boem-bust sequences that dominate its financial history. Jones and Durand, in their major study of farm mortgage lending, noted that four major farm investment and land-price booms preoeded Vorld Var II-ethose associated with the Arerican Revolution, the War of 1812 and the worldwide crop fallures of that decade, the American Civil Mar, and World War I. Fach boom was
followed by about two decades of farm financial experience that they characterized as severe farm mortgage debt distreas.

The aftermath of the World War I boom is the first such period that is fairly well documented by national financial series. The boom was triggered when operators' real net farm income jumped by 48 per cent between 1916 and 1917, and increases in capital expenditures and land prices continued to 1920 in spite of subsequent annual declines in real net farm income. The boom ended when farm income virtually collapsed in 1921 and remained ralatively depressed during that decade. The national index of farm land prices fell each year in spite of the general conomic prosperity of the 1920's, registering a total decline of 33 per cent between the 1920 peak and the advent of the Great Depression in 1929. The experience of farm lenders was correspondingly grave. In 1920, there were nearly 30,000 comercial banks in the U.S. Between 1920 and 1929, neariy topee benks suspended opecations, with a substantial majority of these bank failures occurring in rural states. The onset of the Great Depreasion further aggravated the farm financial difficulties. By the 1932 trough land prices, for instance, had fallen by a total of 59 per cent from their 1920 peak.

Since this last episode of severe financial adversity, the U.S. farming sector has experienced two more booms, that of 1941-1952 and the current boom which began in 1972. The first of these was followed by widespread farm financial problems that were characterized as a "cost-price squeese" on not incone, but not by the general debt-repayment distress that had followed previous booms. The primary new factor thought responsible for this result was the government price aupport progran for major crope, which linited the decline in net farm income. Some financial innovations such as amortization and longer maturities of farm mortgage loans, Federal insurance of bank deposits, and Fedoral lending programs were also considered to have been helpful factors, though in a more ilmited way.

With these new programs and arrangements atill in place, most farm credit market participants and analysts, at least in their public statements, appear to have implicitiy adopted a sanguine view of the post-boom future, in which experience more adverse than that of the 1950 's is regarded as highly improbable. (Some, in fact, have issued projections which can be shown to have assumed
that the capital boom would continue for at least another decade.) A hallmarik, as well as capsule summary, of this view is that farm land prices are not likely to fall significantly, if at all. Apparently, any post-boom financial distress is expected to be either mild or very short-term in nature. In questioning this view, which seens in part to be implicitly based on the experience of the 1950's, I will discuss in detail the differences between the present financial situation and that of the early 1950's. First, however, I want to take note of two major uncertainties that may also play a large role in deternining the financial nature of the period that lies ahead.

First, at the and of the earlier boom, it tumed out that farm land prices were consistent with the level at which the Federal government (or the public) was initially willing to support the prices of major crope. (The post-boom fall in the national index of land prices was limited to a slight decline of only a year's duration, in 1953.) The degree of compatibility directly after this boom remains to be revealed. There may well prove to be variations anong major crops or production areas in this respect.

Secend, relatively large and steady annual reductions in unit costs of producing major crops were achieved during the 1950's and 1960's. A high rate of technological advance and relativaly stable prices of inputs such as fertiliser and fuel contributed much to this result. At present, the near-tern return of such favorable trends seans doubtful. The potential impact of this difference on the post-boom trend in land prices may be large, when one recalls that the major analyses of farm land prices published in the 2960 's 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. In the absence of unit cost reductions, it is doubtful that the public will be willing to compensate by raising support prices to foster land price increases.

These uncertainties are well known, but their potential financial impact is less frequently discussed. I turn next to lesser known but existing differences in the financial situation now as compared with the early 1950's. The point of this comparison will be to demonstrate that the boom following World War II was unique in that, for a number of reasons, there did not
devalop the financial excesses present in earlier booms and in the current boom. The current financial position, as compared with that of the two preceding decades, will then be explored in detail.

The period of relatively favorable real farm income fueling the boom during and after World War II was extraordinarily long. Operators' real not farm income rose by 79 per cent between 1940 and 1942 , maintained that level for seven years ( $1942-1948$ ), and then held at a level only about a fourth lower for another four years (1949-1952). In sharp contrast, operators' real net farm income rose by 103 per cent between 1971 and 1973, but fell sharply in each succeeding year and by 1976 was back at approximately the 1971 level. The recent income experience thus bears a striking resemblence to that of 1916-1920, when the shaxp rise in real income between 1916 and 1917 was also followed by large annual declines that put income in 1920 (when land prices and machinery purchases peaked) below the 1916 level. (Since real net income next fell by another 40 per cent between 1920 and 1921, the resemblence between that period and the present will surely stop with 1920.)

Because of the great length of the income boom, and also because of the unavailability of machinery and construction materials during the first half of that period, liquid financial assets (currency, bank deposits, and U.S. savings bonds) as a proportion of total assets were by the ond of the boom built up to a level ( 8.5 per cent) more than twice as high as the present level ( 3.5 per cent).
fural comercial banks were also very liquid at the end of the previous boom, with loan/deposit ratios apparently averaging well below 40 per cent in the early 1950's. The rural banks are now in a diametrically opposite situation, as will be noted in greater detail later.

Finally, and perhaps most importantly, debt played a limited role in financing the earlier boom. Total outstanding debt declined through 1945. And, while outstanding debt doubled between 1946 and 1953, the absolute increase was small compared to the large capital flows of that period, most of which were financed from farmers' savings. The farming sector thus entered the post-boom 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 renevals and new loan demands.

Tostlebe, in his major study of agricultural finance, established that during the first half of this century the only period in which debt played a major role in financing capital formation was during the decade preceding 1920. His data indicated that increases in debt financed 37 per cent of farm capital formation in the five-year period 1910-1914, and 76 per cent in 1915-1919. The latter period has been widely characterized, in both popular and analytical literature, as a debt-financed boom. A highly comparable series presented in this paper indicates that increases in debt financed 64 per cent of capital formation in the period 1972-1975 (complete data for 1976 are not yet available, but it is likely that the percentage was again relatively high). In sharp contrast, increases in debt were not involved in financing the World War II boom prior to 1946; Tostlebe's data indicate that debt financed only 15 per cent of capital formation in 1945-1949, and my comparable series indicate that debt financed 28 per cent of capital formation in 1950-1952.

It is characteristic of a boom that euphoric projections of future income streams are widely accepted by participants, both borrowers and lenders. When such projections prove to have been overly optimistic, a sharp decline in capital expenditures and in asset prices typically occurs. The asset purchases, highly leveraged positions, and other steps taken on the basis of former income projections are then, in retrospect, relabelled as excesses. But in the period during and imediately after World War II, a majority of the participants expected a rapid retreat to pre-war levels of comadity prices and income. These expectations probably inhibited capital spending as well. as the development of highly leveraged positions. In addition, borrowers, lenders, and analysts alike were highly cautious toward use of debt as a result of the disastrous experience of preceding decades. This attitude also moderated the relative amount of debt financing, which in turn probably also moderated the ongoing increases in capital spending and in land prices. In the post-boom ora of the 1950's, therefore, there were relatively few excesses to unwind, and there existed large credit reserves and credit supplies to help farmers through this period.

Let us now look at financial data for 1950-1975 to see how the current situation compares with that just outlined. This discussion wil refer extensively to the two packets, one labelled "Charts" and the other "Tables," of which there are ample copies for everyone in the audience.

Chart 1 show the increase in the total annual capital flow since 1970 (the latest data plotted are for 1975 ; complete data for 1976 will be available by September 1977). Note in particular the plateau in the total capital flow for 1973-1975. Upon glancing also at the top line in Chart 2, a sinilar pattern is seen to exist for farm cash flow (gross income less production expenses other than capital consumption). The year 1972 lies between this plateau and the initial jears of the decade. These patterns form the basis for dividing the first six years of this decade into three groupings for the purposes of Tables 1 and 2, which accompany these charts.

The stub of Table 1 provides brief information on the components of capital flow. Total capital flow has two primary components: purchases of farm real estate from owners leaving the sector (recently about two-fifths of the total flow) and capital formation. The two major components of capital formation--expenditures for machinery and for roal eatate improvementsare also show In Chart 1.

In Chart 2, we turn to consideration of the financing of the annual capital flow, which is again plotted on this chart. There are two primary means of financing, through borrowing, as measured by the net increase in debt during the year; and from internal resources, including current cash flow and accumalated savings. Both the major role of intemal financing and the recent sharp increase in debt financing are readily apparent in Chart 2 and in Table 1.
(Charts 1, 2, and 8 are drawn on identical logarithaic scales. Thus slopes and vertical distances of all series plotted anywhere on these three charts are directly comparable, whether found on the same or on different charts. Equal slopes represent equal percentage rates of change; equal vertical distances represent equal total percentage changes.)

In studying capital flows and their financing, Tostlobe found it useful to compute and to observe the behavior of certain ratios reflecting meaningful relationshipe among these series. An extended set of these ratios is shown in Table 2, and many of them are plotted on an annual basis in the next few charts. The ratios are divided into four categories, each responding to a different analytical question.

Within each of these four categories, you will also note one or more ratios calculated on a "net"basis. These represent an alternative approach
to the same analytical questions. To simplify the discussion, thoy (and the addenda to mble 1 from which they are derived) will be ignored until Chart 5 is discussed.

The first set of ratios shown in Table 2 indicates the relative burden that the capital flow imposes on the cash flow of the farming sector (cash flow not used for capital puxposes is available for consumption and nonfarm investment). As shown there and plotted on an annual basis in Chart 3. that ralative burden increased significantly during the eariy and mid-1960's, but has not risen since above the area resched in 1965-1967. As is evident in Chart 3. this pattern of the total relative burden has primarily reflected the behavior of the relative burden of the capital formation component. The relative burden of real estate purchases, dominated by the bebavior of land prices, exhibits a steadior upward trend as land prices tended to rise faster than cash flow.

The second set of ratios in Table 2 exanines what proportion of cash flow was allocated to financing of the capital flow. Surprisingly, in spite 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 1950's and early 1960 's, and lower than in the five years preceding 1973. This surprising ralationship is seen on an annual basis as the dashed line in Chart 4. Penson has recentiy published this same finding in another form; namely, that farm operators have recently placed buge amounts of funds ( $\$ 21.6$ billion in 1973 and $\$ 15.4$ billion in 1974) into nonfarm securities and reserves.

Before commenting on the implications of this finding, it is useful to introduce the third set of ratios shown in Table 2, which represents an atterpt to derive an indication of the relative debt repayment burden presented by the ongoing increases in debt. Ideally, one would want to relate something like the accumulative scheduled repayments of past debt increases to the future cash flow stream. The denominator, at least, of such a ratio is not known. Hopefully the proxy show, which relates current increases in debt to current cash flow, is indicative of the trend in the relative repayment burden. As shown in Table 2 and in Chart 4 (bottom Iine), this indicator has made new highs in recent years. Cash flow would have to
rise in the future to keep this indicated increase in repayment burden from materializing. If cash flow fails to rise, as happened in the 1950's (Chart 2), repayment of the past borrowings is more likely to be burdensome.

The three series shown in Chart 5 are sinilar to the respective series in Chart 4, except that capital consumption (depreciation allowances and accidental damage) has been subtracted both from cash flow and from the capital formation component of capital flow. (The results of this operation are also shom in the addenda to Table 1.) In this approach, one implicitiy assumes that the funds designated in the national accounts as capital consumption (depreciation) 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 those series are financed from net income and the not increase in debt. As it turns out, Charts 4 and 5 tell much the same story. The farming sector has in recent years allocated less of its income streen to financing of capital flows, and it has oaployed increased debt financing relative to that income stream.

Looking at either chart, three distinct moves toward greater use of debt financing are evident since 1950. In the first, which occurred in the mid- and:late 1950 's, increased debt financing aubstituted for a smaller allocation of cash flow to internal financing. Then, during the early and mid-1960's, both increased debt financing and an increased allocation of internal funds occurred as the ralative burdon of the capital flow increased sharply. Finally, in the 1970's, increased debt financing again substituted for a smaller relative allocation to internal financing. But whereas in the 1950 's such a shift had occurred under the pressure of falling income, In 1973 and 1974 it occurred in the face of relatively high cash flow and income.

This reoent behavior, which as already noted is also manifested in Penson's equivalent data, is almost difficult to believe. It probably reflects, however, a concentration of increased borrowing among a relatively amall proportion of farmers, primarily those who have significantly expanded their operations in recent years. This hishly unoven distribution of debt, which has both good and bad implications for any future period of financial stress, poses additional research questions that nust be approached through micmo-level date from the Census and other sources.

The last set of ratios in Table 2 are relatively straightforward in comparison to those preceding. They simply show the percentage of capital flow or capital formation that can be regarded as financed by the increase in debt. As indicated in Table 2 and in Chart 6, the relative role of debt financing during the 1972-1975 period exceeds that of the earlier periods covered in the table and chart, and in particular far exceeds that during the final stage of the last boon (1950-1952). Data for 1976 will, I believe, be in the same range or higher, and the same appears true for the first half of 1977.

The message of all these data is, in the end, quite simple. There has been a copital spending and land price boom. That boom has boen significantly debt-financed-a situation not exporienced in the U.S. since 1920. The financial future of the farming sector can justifiably be viewed with soze apprehension. Increased research and policy attention to the treatment of financial stress seems in order.

With Chart 7. I return to a more familiar presentation (which should now appear relatively lacking in analytical content). The intent of this chart is to indicate that all major lender groups have participated in financing the recent boom. (The group labelled "money market lenders" combines lender groups that derive all or most of their funds from national money markets or from large banks active in those markets-othe cooperative fam credit systen, the Farmers Home Administration, and "individuals and others," mainly merchants and dealers, in the non-real-estate loan area.)

Chart 8 and Table 3, however, indicate that certain lender groups-the cooperative farm credit system and also the commercial banks-whave participated more vigorously than other groups in the recent increases in farm debt. Each of these groups has certain advantages and disadvantages 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 nostly 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 also would raise their cost, whereas, with their deposit insurance and their more diversified portfolio, the supply of funds at many banks night be relatively unaffected by similar farm loan experience.

From all such considerations, however, it appears that the lending institution most vulnerable in the event of adverse farm loan experience is the smajl rural bank that is heavily involved in farm landing and at which farm income trands significantly affect deposit growth. Study of Table 4 indicates that perhaps one-third of all commercial banks are currently in this category (last two colunns of Table 4), and that such banks account for over one-half of all farm loans at commercial banks.

The most vulnerable group isolated in Table 4, in the last column, is that comprised of the 2,100 banks with more than half (an average of 64 per ceat) of their loans in farming. While 15 per cent of the nation's banics are in this group, and it accounts for 26 per cent of farm loans outstanding at banks, these generally small institutions hold only $\$ 20$ billion, or 2.4 por cent, of the nation's bank deposits. This sum is less, it can be noted, than the deposits at each of the nation's three largest bankes. Coviously, shodld 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 or financial markets.

Given the inborentiy risky situation faced by these bpaks, it is disturbing to find, in Teble 5, that their relative ilquidity has very recently been drastically reduced, on average, from that maintained since the late $1960^{\prime}$. This development has reaulted from the adverse impact of falling farm income on deposit growth and on loan repayment. More recent data show these trends continuing into 1977 in each of the nation's major agricultural areas in which the presence of small banks is significant. Clearly, if the farming sector is now ontering a post-boom period, the small ruxal banks are in a far difforent situation than the one characterized by their highly liquid positions of the early 1950's. Whatever may lie ahead, the next fow years will be an interesting period for agricultural finance analysts.

[^0]
## References

(1) Brake, John R., and Emanuel Melichar, "Agricultural Finance and Capital Markets," Part VI, A Survey of Agricultural Economics Literature, Volume 1, Lee R. Martin, editor, American Agricultural Economics Association, University of Minnesota Press, 1977, pp. 413-494.
(2) Jones, Lawrence A., and David Durand, Mortgage Lending Experience In Agriculture, National Bureau of Economic Research, Princeton University Press, 1954.
(3) Melichar, Beanuel, "The Farm Business Sector in the National Flow of Funds Accounts," 1970 Proceedings of the Business and Economic Statistics Section, American Statistical Association, 1971. Pp. 571-576.
(4) - "Financing Agriculture: Demand for and Supply of Farm Capital and Credit," American Journal of Agricultural Economics, May 1973. pp. 313-325.
(5)

P' "Financial Markets for fural Bank Paper: Report on Research for a System Comittee," Improved Fund Availability at Rural Banks--Report and Study Papers of the Comittee on fural Banking Froblems, Boand of Governors of the Federal Reserve System, 1975, pp. 11-20. Flains," Agricultural Pinance Commentary, June 1977, 20 pp. (mimeo.).
(7) Malichar, Ganual, and Marian Sayre, Agricultural Finance DatabookAnnual Sories, Board of Governors of the Federal Reserve Systen, Soptember 1976, 140 pp. Governors of Agricultural Pinance Databook-Monthly Sories, Board of
(9) Penson, John B., JY., "Toward an Aggregative Measure of Saving and Capital Finance for U.S. Farm Operator Families," American Journal of Agricultural Economics. February 1977, pp. 49-60.
(10) Tostlebe, Alvin S., Gapital in Agriculturo: Its Formation and Flnancing since 1870 , National Bureal of Economic Research, Princeton University Press, 1957, .

Table 1

Capital, credit, and income flows (annual average, billions of dollars)

| Item | $\begin{gathered} 1950- \\ 54 \end{gathered}$ | $\begin{gathered} 1955- \\ 59 \end{gathered}$ | $\begin{gathered} 1960- \\ 64 \end{gathered}$ | $\begin{gathered} 1965- \\ 69 \end{gathered}$ | $\begin{gathered} 1970 \\ 71 \end{gathered}$ | 1972 | $\begin{gathered} 1973 \\ 75 \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 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....................... | . 5 | . 1 | . 3 | . 1 | . 6 | . 4 | . 4 |
| Stored crops.................... | . 1 | . 2 | - | . 3 | . 1 | . 4 | 1.2 |
| Financial assets............... | . 1 | -. 1 | - | . 4 | . 6 | 1.2 | . 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)...... | . 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:
$\begin{array}{llllllllll}\text { Capital consumption............... } 3.2 & 3.9 & 4.6 & 5.8 & 7.1 & 7.9 & 10.7\end{array}$
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 | . 5 | . 7 | 1.7 | 1.5 | 2.2 | 3.6 |
| income. . . . . . . . . . . . . . . . 15.15 | 12.6 | 13.0 | 15.1 | 16.5 | 22.2 | 33. |
|  | 1 | 1.6 | 3 | 3. |  |  |

Table 2
Relationships among capital, credit, and income flows
(annual average, per cent)

| Analytical ratio | $1950-$ <br> 54 | $1955-$ <br> 59 | $1960-$ <br> 64 | $1965-$ <br> 69 | $1970-$ <br> 71 | 1972 | $1973-$ <br> 75 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |

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 |

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 |

Relative repayment burden presented by debt financing:


Relative role of debt in financing of capital flows


Table 3
Historical turning points in lender shares of outstanding farm debt (per cent)

| Year | Banks | Cooperative <br> farm credit <br> system | Life <br> insurance <br> companies | Farmers Home <br> Administration | Individuals <br> and others |
| :--- | :---: | :---: | :---: | :---: | :---: |

Real estate debt, 1910-1977

| $1910 \ldots .$. | 13 | - | 12 | - | 75 |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $1917 \ldots$. | 16 H | - | 15 H | - | 69 |
| $1920 \ldots$. | 14 | 4 | 12 L | - | 70 |
| $1932 \ldots$. | 10 | 19 | 22 H | - | 48 |
| $1935 \ldots$. | 7 L | 38 | 17 | - | 39 |
| $1938 \ldots$. | 7 | 44 H | 14 L | - | 34 |
| $1942 \ldots$. | 8 | 40 | 17 | 2 | 33 L |
| $1949 \ldots$. | 17 H | 18 | 20 | 4 | 42 H |
| $1953 \ldots$. | 15 | 15 L | 24 | 5 | 42 |
| $1956 \ldots$. | 14 | 16 | 25 H | 5 | 40 |
| $1972 \ldots$. | 13 | 24 | 17 | 8 H | 37 |
| $1977 \ldots .$. | 12 | 33 | 13 | 6 | 36 |

## Non-real-estate debt, 1940-1977

| $1940 \ldots$. | 30 | 6 | - | 14 | 50 |
| :--- | :--- | :---: | :--- | :--- | :--- |
| $1944 \ldots$. | 32 | 8 | - | 18 H | 42 |
| $1945 \ldots$. | 35 | 8 | - | 17 | 40 L |
| $1951 \ldots$. | 41 | 8 | - | 5 | 45 H |
| $1974 \ldots$. | 53 | 25 | - | 3 L | 18 |
| $1977 \ldots$. | 52 | 28 | - | 4 | 16 |

Table 4
Insured commercial banks, by relative involvement in farm lending December 31, 1976

| Item | $\begin{gathered} \text { All } \\ \text { banks } \end{gathered}$ | Farm loans as percentage of total loans at bank |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Under 5 | 5 to 24 | $\begin{gathered} 25 \text { to } \\ 49 \end{gathered}$ | 50 and over |

Banks:

| Number. . . . . . . . . . . . . . . . . . . . | 14,397 | 5,650 | 3,760 | 2,874 | 2,113 |
| :--- | :--- | ---: | ---: | ---: | ---: | ---: |
| Per cent of total. . . ......... | 100 | 39 | 26 | 20 | 15 |

Farm loans:

| Billions of dollars. | 30 | 4 | 9 | 9 | 8 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Per cent of total | 100 | 14 | 30 | 30 | 26 |
| Average per bank <br> (millions of dollars)..... | 2.1 | .7 | 2.4 | 3.1 | 3.6 |
| As per cent of total loans... | 6 | 1 | 12 | 35 | 64 |

Total loans as per cent of--

| Assets.................................................................... | 53 | 53 | 54 | 54 | 54 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Deposits...... | 66 | 62 | 60 | 60 |  |

Deposits:

| Billions of dollars | 825 | 635 | 127 | 43 | 20 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Per cent of total. | 100 | 77 | 15 | 5 | 2 |
| Average per bank <br> (millions of dollars)... | 57 | 112 | 34 | 15 | 9 |

Capital and surplus per bank
(millions of dollars)......... $5.4 \quad 10.7 \quad 2.9 \quad 1.3 \quad .9$

Table 5
Average loan/deposit ratios at insured commercial banks, by relative involvement in farm lending
(per cent)

| December 31 | $\begin{gathered} \text { All } \\ \text { banks } \end{gathered}$ | Farm loans as percentage of total loans at bank |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\begin{gathered} \text { Under } \\ 5 \end{gathered}$ | $\begin{gathered} 5 \text { to } \\ 24 \end{gathered}$ | $\begin{gathered} 25 \text { to } \\ 49 \end{gathered}$ | $\begin{aligned} & 50 \text { and } \\ & \text { over } \end{aligned}$ |
| 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 |

Chart 1


Chart 2

Financing of the annual capital flow


Chart 3
Relative burden of capital flows


Chart 4
Financing of capital flow, related to cash flow


## Chart 5

Financing of net capital flow, related to net income


Chart 6<br>Relative role of debt financing




Chart 8
Lender shares of outstanding farm debt, January 1



[^0]:    * The analyses and conclusions presented herein 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.

