Chapter 5

DALE E. HATHAWAY
Michigan State University

Trends in Credit and Capital[1]

HISTORICALLY, the conditions relating to the availability of credit to agriculture have been one of the major reasons for farmer discontent. Prior to about 1940, farm credit problems were of major concern to policymakers, and there was a substantial amount of professional interest in credit problems among agricultural economists. Since World War II the major interest of both groups has been concentrated upon price and income policies, and too little attention has been given to the effects of credit upon the income of farmers.

CREDIT AND CAPITAL FORMATION IN AGRICULTURE

An individual farmer or the agricultural industry may acquire increased capital to combine with other resources through savings from income, grants and inheritances, windfalls, renting, or the use of credit. In addition, persons in agriculture may use credit to transfer the ownership of existing assets from one individual to another within the industry, or from an individual outside the industry to one within. With such transfers, no new capital is made available to the industry even though the amount of credit used may rise.

The most comprehensive view of the long-time changes in the capital structure of agriculture is contained in the work by Tostlebe, which was cited frequently in Chapter 2. His conclusions were: (1) that external financing has played a relatively minor role in the financing of net capital growth in agriculture — a major exception appears to have been the decade 1910-20; and (2) since 1910 the capital growth in agriculture has been much more heavily concentrated in machinery and motor vehicles and less in real estate and livestock (Chapter 2). Tostlebe predicted this trend would continue. Since the end of the period covered by his work was about 1950, it is apropos to attempt an approximation of the trends of the 1950-1960 decade to determine how they compare with the long-time trends of earlier periods.

On the basis of present data, several generalizations of importance

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appear warranted. First, the rate of gross and net capital formation in agriculture was very high during the period 1945-54, with major increases in investment in both real estate and machinery. After 1954 the growth in net investment slowed appreciably, with a sharp decline in machinery investment accompanied by a modest decline in real estate investment. During the five years, 1955-60, there appears to have been no net increase in capital invested in machinery and equipment in U. S. agriculture, and the data may prove to be slightly negative when the final revisions are made. Meanwhile, the investment in real estate, which has been underestimated in recent years, appears to have continued at a relatively high rate when considered from a historical viewpoint.[2]

Perhaps the most notable feature of the postwar period has been the importance of external capital sources to the growth in investment. Whereas Tostlebe showed a long-term rise in the proportion of internal financing of capital in agriculture, this trend has reversed in the postwar period. Thus, in each successive five-year period since 1945,the portion of capital growth financed externally has risen. In 1959, external financing as a proportion of capital growth in U. S. agriculture may have been at an alltime high.

Thus, the availability of credit to agriculture and the terms under which it may be obtained have become much more important than has hitherto been assumed. As long as capital formation in agriculture was primarily financed internally, credit conditions in agriculture greatly affected income distribution in agriculture. However, if capital formation has become dependent upon external financing, then the total productivity of the industry is related to the conditions under which it can obtain credit. Therefore, the area of concern is much greater than if credit were considered primarily as a means of transferring the ownership of existing assets among various persons.

Even though the transfer of ownership does nothing to create new capital in agriculture, its importance under certain conditions should not be overlooked. It has been suggested that capital gains in agriculture may tend to compensate farmers sufficiently for low returns to labor so that over a person's lifetime the accumulation of assets by a farmer may approach those of his nonfarm counterpart. However, capital gains can be realized only through ownership of the asset involved. Therefore, the provisions of credit which enables farm families to gain ownership of these assets may have important effects upon the long-time well-being of these families in a period when the market value of these assets is appreciating significantly.

In view of these facts, it can be argued that adequate credit for agriculture is important because it is an increasingly important source of new capital, and it allows farm families to capture any capital gains that may accrue to the owners of agricultural resources.

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[2] The current figures for investment in real estate include only buildings and do not include investment in land improvement, drainage, permanent pastures, etc. Expenditures on such investments appear to have been very substantial since 1945.

Farm Mortgage Credit

Credit extended to agriculture tends to be classified in terms of the security offered rather than in terms of the purpose for which it is used. For instance, it is often assumed that farm mortgage debt is largely credit to transfer the ownership of real estate with little or no effect upon capital formation in agriculture. A closer examination of the available data suggests this is not true. Thus, in the quarter ending June 30, 1959, the purposes for which 21 major life insurance companies granted loans showed that only one-third of the total amount borrowed was used for farm real estate purchases.[3] Twenty-nine percent was used to refinance existing mortgages, and 17 percent to pay off other existing debts. Eight percent was used for repairs and improvements to land and buildings, and 13 percent for other purposes. At most two-thirds of these loan funds can be identified as merely providing credit to transfer farm ownership, and the actual percentage used solely for this purpose may be considerably lower.

About one-half of the farm mortgage loans granted by the Farmers Home Administration during the same period was used for real estate purchases and one-fourth to refinance existing mortgages. The remaining loans were used primarily for capital improvements.

A mid-1956 survey of farm loans by commercial banks showed that only 57 percent of the loans secured by real estate mortgages were used to buy land. This was well below an estimated 70 percent of mortgage loans used to buy land in a 1947 survey.[4] The sharp increase in the use of credit secured by farm mortgages to finance intermediate-term investments is not surprising in view of certain conditions which will be discussed later.

Keeping in mind that real estate credit advanced to farmers is related to security and not necessarily to purpose, an examination of some of the aggregate trends in these figures is presented here. On January 1, 1959, outstanding real estate debt amounted to an alltime high of $11.3 billion. This was more than double the postwar low of $4.8 billion in 1946. As yet, however, the annual volume of mortgages recorded or loans made in a single year remains well below the 1920 peak. The increase in total debt outstanding despite a lower annual volume is, of course, due to the increased share of loans now coming from sources which generally make longer term loans.

Virtually everyone is aware that the annual volume of farm mortgage credit fluctuates rather violently depending on the level of prosperity in agriculture. It is often presumed that the growth of federally sponsored credit agencies for agriculture has resulted in their replacing the conventional lending institutions — banks and insurance

[3] Farm Mortgage Lending Experience of Life Insurance Companies, the Federal Land Banks, and Farmers Home Administration, July through September 1959, USDA, ARS, Washington, D. C., Jan., 1960, pp. 43-116.

[4] "Loans to buy farm real estate," Farm Loans at Commercial Banks, Board of Governors of the Federal Reserve System, p. 37.

companies — as sources of farm mortgage funds. This, however, has not been the case, except for emergency years of the Great Depression (Table 5.1).

Table 5.1. Proportion of Total Farm Mortgage Loans Made or Recorded by Principal Lenders, United States, 1910-59

		Loans made				Mortgages recorded		
Date	Total (all lenders)	Federal Land Banks	Federal Farm Mortgage Corp.	Joint-stock land banks	Farmers Home Administration	Insurance companies	Commercial and savings banks	Individual and miscellaneous
					(Percent of total)			
1910	1,249,885					8.43	16.62	74.95
1920	3,625,780	1.85		.53		10.67	18.29	68.60
1930	1,364,625	3.45		*		12.73	26.03	57.40
1935	1,061,693	23.32	18.45			7.35	16.62	34.26
1940	772,462	8.28	4.71		5.12	18.83	28.46	34.60
1945	1,054,430	8.71	2.72		1.64	13.76	29.66	43.50
1950	1,655,895	12.26	*		2.75	21.00	28.48	35.51
1951	1,770,248	11.94	*		2.72	21.54	25.90	37.90
1952	1,777,619	14.15	*		2.94	19.42	27.22	36.26
1953	1,853,627	15.43	*		1.94	21.26	26.11	35.25
1954	1,885,499	16.01	*		1.42	20.69	26.52	35.35
1955	2,401,864	20.10	*		.64	21.05	24.23	33.99
1956	2,387,627	21.81			1.69	20.37	22.11	34.01
1957	2,253,977	17.91			3.22	17.19	22.30	39.38
1958	2,432,612	19.42			3.26	16.02	22.81	38.49
1959	2,814,278	22.26			2.92	15.97	21.51	37.34

Source: Agricultural Finance Review, USDA, ARS, Washington, D. C., Sept., 1960, p. 120.
*Less than 1 percent.

Instead, the largest decline as a source of farm mortgage credit has been in the group classified as "individuals and miscellaneous" lenders. Prior to 1920, the data indicate that this group of lenders supplied about two-thirds of the annual mortgage credit used by farmers. However, this lending group accounted for less than 40 percent of the annual volume of mortgages recorded during the 1950-60 decade.

Commercial banks are the second largest suppliers of annual mortgage loans, accounting for approximately one-fourth of the volume of mortgages recorded. Except for the years of acute depression and bank distress in the 1930's, the commercial banks have provided a relatively stable proportion of the annual mortgage loans recorded — about 25 to 30 percent.

Insurance companies account for about one-fifth of the farm mortgage loans recorded annually. Their proportion has shown a slight decline but in 1959 was still well above the proportion of total loans made prior to 1930.

The federal agencies, or federally sponsored lending institutions, have played a major role in the farm mortgage credit picture since the 1930's. From 1932 to 1934 the proportion of mortgages recorded by

Table 5.2. Farm Mortgage Debt: Percentage of Total Loans Held by Principal Lenders, and Total Outstanding, United States, 1910-60

Date	Total farm mortgage debt	Federal Land Banks	Federal Farm Mortgage Corp.	Joint-stock land banks	Farmers Home Administration	Life insurance	Commercial and savings banks	Three-state credit agencies	Individual and others
					(Percent of total)				
1910	3,207,863					12.06	12.66		75.27
1920	8,448,772	3.48		.71		11.54	14.26		70.01
1930	9,630,768	12.48		6.62		22.00	10.35	1.00	47.55
1935	7,584,459	25.68	8.13	3.65		17.16	6.58	.87	37.93
1940	6,586,399	30.51	10.83	1.39	*	14.94	8.11	*	33.26
1945	4,940,915	24.48	7.03	*	3.92	18.99	9.16		35.97
1950	5,579,278	16.24	1.05		3.38	21.01	16.80		41.51
1951	6,071,345	15.60	.72		3.53	22.33	16.61		41.21
1952	6,588,270	15.09	*		3.54	23.39	15.89		41.59
1953	7,154,038	14.98	*		3.61	23.97	15.45		41.66
1954	7,656,186	15.27	*		3.50	24.72	14.78		41.50
1955	8,175,724	15.50	*		3.32	25.09	14.81		41.13
1956	8,962,239	16.52			3.10	25.35	15.02		40.01
1957	9,907,623	17.38			2.92	25.00	13.99		40.70
1958	10,507,032	18.06			3.23	24.55	13.46		40.70
1959	11,254,264	18.35			3.45	23.65	13.43		41.12
1960	12,291,388	19.00			3.55	22.95	13.22		41.28

Source: Computed from data in Agricultural Finance Review, *op. cit.*
*Less than 1 percent.

the Federal Land Banks rose from 3 to 40 percent of the total. Following the depression crisis, the proportion of annual volume furnished by the Land Banks declined until near the end of World War II. In the next ten years, a period of steady increase in mortgage debt, the proportion of the total mortgage loans made by the Federal Land Banks more than doubled and in 1959 accounted for about one-fifth of the mortgage loans made annually. Murray also presents relevant data on mortgage loans in Chapter 11.

The Farmers Home Administration inherited a mortgage loan program designed to serve a restricted group of farmers. Since the FHA must depend upon Congressional appropriations for funds, it has furnished a declining proportion of the total mortgage funds for agriculture since the beginning of World War II. In the 1950's the FHA provided only about 2 to 3 percent of the mortgage funds loaned in a given year.

However, since the length of mortgage loans varies widely among lenders, the total mortgage credit outstanding to farmers at any given time depends upon both annual loan volume and length of maturity. Thus, while banks accounted for 20 percent or more of the total volume of mortgage recorded annually in the early 1950's, they held only 13 percent of the total mortgage debt outstanding in 1958 (Table 5.2). On the other hand, insurance companies, whose loans are for longer terms, accounted for an estimated one-fourth of the loans outstanding on the same date. The generally longer terms of the Land Banks also increase their relative importance as a source of funds.

The shift toward lending institutions with longer term loans is illustrated by a comparison of the percentage changes in the amount of mortgage loans outstanding (Table 5.3). The life insurance companies and Land Banks have increased their mortgages outstanding since 1950 at about twice the rate of insured commercial banks, and at a considerably higher rate than individuals and miscellaneous lenders.

The increase in farm mortgage credit has not been at the same rate in all regions of agriculture (Table 5.4). The Pacific and Mountain regions had a sharp rise in mortgage credit outstanding in the 1945-50 period. The South and the Northeast had moderate expansions of mortgage credit during this period, whereas the Lake States, Corn Belt, and Northern Plains regions had no change or decline.

During the 1950-55 period, the rate of expansion in mortgage credit was highest in the Mountain and southern regions. The Lake States and Corn Belt regions underwent a slower expansion in mortgages outstanding. The expansion in mortgage credit was also at a more rapid rate in the Southeast, Delta, Mountain, Pacific, and Northern Plains regions during the 1955-59 period.

Thus, in terms of rate of increase in mortgage credit over the period considered, the Mountain, Southeast, Delta, and Pacific regions have led. Moreover, in terms of absolute or dollar expansion in mortgage loans outstanding, the Mountain and Pacific regions have ranked behind only the Corn Belt. Although the relative rate of expansion in

Table 5.3. Farm Mortgage Debt: Amount Outstanding, by Lenders, Selected Years, January 1, 1940-55 and 1957-59, and Percentage Change, 1950-59 and 1958-59, United States

Year	Federal Land Banks[a]	Federal Farm Mortgage Corporation[a,b]	Farmers Home Administration[c]	Life insurance companies[a]	Insured commercial banks	Individuals and miscellaneous	Total debt
			(Million dollars)				
1940	2,010	713	32	984	534	2,313	6,586
1945	1,210	347	195	938	450	1,801	4,941
1950	906	59	193	1,172	879	2,370	5,579
1955	1,267	13	287	2,052	1,136	3,534	8,289
1957	1,722	0	290	2,477	1,311	4,108	9,908
1958	1,897	0	340	2,579	1,341	4,350	10,507
1959	2,065	0	388	2,661	1,443	4,697	11,254
			Percentage change[d]				
			(Percent)				
1950-59	127.9	-	100.7	127.0	64.0	98.2	101.7
1958-59	8.9	-	14.2	4.6	7.6	7.3	7.1

Source: The Balance Sheet of Agriculture, Agr. Info. Bul. No. 214, ARS, USDA, Washington, D. C., Oct., 1959, p. 25.

[a] Includes regular mortgages, purchase money mortgages, and sales contracts.

[b] Loans were made for the Corporation by the Land Bank Commissioner. Authority to make new loans expired July 1, 1947. On June 30, 1955, loans of the Federal Farm Mortgage Corporation were sold to the 12 Federal Land Banks.

[c] Data for 1940 include only tenant purchase loans and direct soil and water loans to individuals. Thereafter, data include also farm development, farm enlargement, and project liquidation loans; farm-housing loans beginning July 1950; building improvement loans beginning 1955.

[d] Computed from unrounded data.

the Delta and Southeast has been high, the absolute expansion of mortgage credit has not been as large as in several other regions.

The question arises regarding whether the bulk of mortgage credit available to a region comes from within or outside the region. It is assumed that credit from banks, individuals, and miscellaneous lenders largely represents credit from within the region; whereas mortgage credit from Land Banks, insurance companies, and the Farmers Home Administration largely represents credit obtained from sources outside the region.

Using this rough measure, the proportion of mortgage credit that is financed within the region varies widely among regions (Table 5.5). In the Northeast, Lake States, Appalachian, and Pacific regions, indications are that the bulk of the mortgage credit is furnished from within the region since it is held by banks, individuals, and miscellaneous lenders. On the other hand, in the Corn Belt, Delta, Mountain, and Southeast regions, one-half or more of the mortgage credit comes from external sources. Also, in the Northern and Southern Plains regions, over 60 percent of the mortgage credit comes from sources outside the region.

In the Mountain and Pacific regions, there has been a rapid expansion in the mortgages held by life insurance companies. This source of

Table 5.4. Percentage Increases in Farm Mortgage Debt, by Regions, 1945-59

Region	Percent increase
Northeast	201.5
Lake States	179.8
Corn Belt	180.6
Northern Plains	169.5
Appalachian	267.4
Southeast	338.3
Delta States	302.6
Southern Plains	230.2
Mountain	396.6
Pacific	332.9
United States	227.8

Source: The Balance Sheet of Agriculture, Agr. Info. Bul. No. 214, ARS, USDA, Washington, D. C., 1959, p. 36.

credit seems to have been a major source of the growth in mortgage credit. Mortgages held by life insurance companies have also been a major source for the rapid rate of increase in mortgage debt in the Delta and Southeast. On the other hand, the Appalachian region, the Lake States, and the Northeast have had slower rates of increase in mortgage debt, and the amount of mortgage debt held by insurance companies and Land Banks is relatively lower.

An appraisal of the Appalachian and Southeast regions — which are generally regarded as the areas where the capital-man ratio and farm incomes are low — indicates that these regions still depend rather heavily upon internal capital for the financing of real estate debt. Also, the proportion financed internally has risen since 1940. The land contract has not been used as extensively in these regions, nor has its use expanded as rapidly as in other areas. Part of the explanation may be that the size of the units being transferred is generally smaller and can be more easily financed by local sources. Another explanation might be that these two regions have had sufficient internal credit available from individuals and banks. This, however, would seem unlikely in view of the rapid reduction in the labor force in these two regions with the resulting need to combine existing farms. Rather, it would appear that these regions may suffer from a lack of internal capital and, in addition, have an agricultural structure that is not generally able to compete with other areas for major sources of outside capital and credit.

At the other extreme are the Mountain and Pacific regions. These regions, in which the rate of mortgage credit expansion has been high

Table 5.5. Proportion of Farm Mortgage Loans Held by Various Lenders, 1945, 1950, and 1958

Division	1958				1950				1945			
	Federal Land Banks and Federal Mort. Corp.	Life insurance companies	Farmers Home Administration	All others	Federal Land Banks and Federal Mort. Corp.	Life insurance companies	Farmers Home Administration	All others	Federal Land Banks and Federal Mort. Corp.	Life insurance companies	Farmers Home Administration	All others
Northeast	14.5	5.8	2.0	77.7	15.0	5.0	2.2	77.8	21.7	.8	1.4	76.1
Corn Belt	17.0	34.9	1.8	46.3	16.9	35.4	1.8	45.9	23.5	31.4	1.8	43.3
Lake States	18.1	14.1	1.8	66.0	16.3	11.9	1.9	69.9	26.9	11.6	1.8	59.7
Appalachian	14.5	17.0	5.8	62.6	12.6	11.9	4.8	70.7	26.2	10.8	8.1	54.9
Southeast	19.7	18.1	8.1	54.1	19.3	8.2	9.4	63.1	34.3	5.3	13.7	46.7
Delta	15.6	30.9	8.8	44.7	16.1	22.7	11.8	49.3	26.6	17.2	12.5	43.7
Southern Plains	24.3	40.0	3.5	32.1	23.3	34.6	5.8	36.3	42.0	22.0	5.9	30.1
Northern Plains	27.8	29.5	3.1	39.6	28.7	30.6	2.9	37.8	47.7	24.1	2.2	26.0
Mountain	17.7	29.5	3.7	49.1	18.7	22.6	3.2	55.6	41.7	9.0	2.2	47.1
Pacific	13.3	15.3	1.6	69.9	14.4	15.5	.8	69.3	24.0	6.4	.8	68.8
UNITED STATES	18.1	24.5	3.2	54.2	17.8	21.7	3.5	57.0	29.5	17.7	3.4	49.3

Source: Computed from data in Agricultural Finance Review, *op. cit.*, and Agricultural Statistics, USDA, Washington, D. C., 1958.

have apparently been very attractive to outside lenders. Thus, mortgage credit in these regions has been expanded largely through loans from insurance companies, Land Banks, and the Farmers Home Administration.

In examining the farm mortgage credit structure from another viewpoint, one notices shifts over time in the regional distribution of loans made by those institutions which operate in various areas of the nation. One of the more striking shifts is the distribution of Farmers Home Administration mortgage credit away from its traditional concentration in the South with a corresponding rise in the proportion of loans in the Mountain, Pacific, and Plains regions. As mentioned previously, life insurance companies are sharply increasing the proportion of total mortgage loans in the Mountain and Pacific regions. Similar but less striking trends are shown in the proportion of total Land Bank loans to different regions.

There is another major source of credit to facilitate the transfer of farm real estate for which no estimates are available. This source is the purchase contract and other instruments by which the seller finances the purchase of farm real estate. Estimates by the USDA suggest that this source is of major importance in the transfer of land in some regions and that use of this method is growing. Such contracts were used to finance about 20 percent of all the land transfers in 1958.[5] This was about twice the figure for 1946. In the Lake States and Mountain regions, purchase contracts accounted for about 40 percent of the transfers, compared with about 18 percent in the Corn Belt. Such contracts are also used less frequently in the South. The rise in the use of such credit instruments may be due to the inability of purchasers to obtain conventional financing and to the fact that there are apparently tax advantages to the seller.

A source of real estate capital which is sometimes overlooked is the farm land owned by nonfarm persons and rented to farm operators. Despite the sharp decline in tenancy since 1940, there has been little change in the proportion of farm land that is owned by nonfarm landlords.[6] In 1940 the value of land owned by nonfarm landlords was 27 percent of the total, and in 1959 it was 23 percent of the total. The proportion of farm land owned by nonfarm landlords varies widely among regions. In the Corn Belt and Northern and Southern Plains regions, a much higher proportion of the farm land is owned by nonfarm landlords, while in the Northeast, Appalachian, and Southeast, the nonfarm landlords provide very little of this form of capital. The data cited indicate that the capital and credit market still, in 1960, is not performing as well in meeting the needs of southern agriculture as it is in meeting the needs of most other regions.

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[5] Agricultural Finance Review, USDA, ARS, July, 1959, p. 24.

[6] Balance Sheet of Agriculture, Agr. Info. Bul. 214, USDA, ARS, 1959, p. 10.

Nonreal Estate Credit to Agriculture

The growth in the use of nonreal estate credit by the farm economy has been as rapid as the growth in real estate credit. Since 1940 there has been an approximate fourfold increase in the amount of such credit held by the principal lending institutions (Table 5.6).

Table 5.6. Nonreal Estate Loans to Farmers: Proportion Held by Principal Lending Institutions, United States, January 1 — Selected Years 1915-60

Date	Total (excluding CCC)	All operating banks	Production Credit Association	Federal Intermediate Banks	Farmers Home Administration		
					Operating loans	Emergency loans	Emergency capital and feed
				(Percent of total)			
1915	1,605,958						
1920	3,455,253						
1925	2,713,162						
1930	2,546,104						
1935	947,345	66.28	6.38	5.81	.59	9.19	11.74
1940	1,503,820	59.85	10.20	2.15	16.11	.53	11.16
1945	1,619,521	58.59	11.63	1.84	18.58	.84	8.53
1950	2,833,769	72.30	13.67	1.79	9.27	*	2.51
1951	3,366,254	74.98	13.39	1.84	7.53	.67	1.58
1952	4,063,463	76.79	13.82	1.92	6.05	*	.94
1953	4,214,996	75.80	14.22	1.97	6.67	.68	.66
1954	3,743,543	73.80	14.47	1.70	8.14	1.36	.53
1955	3,986,328	73.60	14.47	1.46	8.29	1.77	*
1956	4,420,483	74.84	14.58	1.40	7.23	1.65	*
1957	4,469,888	73.38	15.64	1.34	7.56	1.83	*
1958	4,993,983	72.19	17.74	1.35	6.97	1.59	*
1959	5,764,702	72.18	19.34	1.45	5.89	1.04	*
1960	6,661,178	72.27	20.43	1.34	5.19	.71	.06

Source: Computed from data in Agricultural Finance Review, *op. cit.*, p. 141.
*Less than 1 percent.

Perhaps the most striking feature of the nonreal estate credit is the dominance of commercial banks as sources of these funds. At the close of World War II, commercial banks accounted for about 60 percent of the loans held by the principal lending institutions. By 1949 this percentage had increased to about 70, and since that time, the percentage has remained relatively stable.

The postwar period has seen a relative decline in the proportion of nonreal estate credit supplied by the Farmers Home Administration. At the end of World War II, the FHA programs provided about one-fourth of this type of credit used by agriculture. By 1959 this percentage was down to about 7 percent.

The Production Credit Associations have shown a rapid expansion in the proportion of the total nonreal estate loans held by principal lenders. On January 1, 1959, they held almost 20 percent of this type of credit outstanding, which was about double their percentage of 1945.

As in the case of real estate credit, wide differences are found

among regions in the relative importance of the major institutional sources of nonreal estate credit (Table 5.7). In the Corn Belt, the Lake

Table 5.7. Proportion of Nonreal Estate Loans to Farmers Held by Different Lending Institutions in Mid-1958

Region	Percentage of loans held by		
	All commercial banks	Farmers Home Administration	Production Credit Assoc.
Northeast	65.4	10.2	24.3
Corn Belt	77.1	4.8	18.0
Lake States	77.2	7.2	15.6
Appalachian States	62.0	8.9	29.1
Southeast	54.1	11.7	34.3
Delta States	48.0	13.9	38.1
Southern Plains	64.6	16.4	19.0
Northern Plains	80.7	8.4	10.9
Mountain States	68.3	10.0	21.7
Pacific States	79.7	4.1	16.1

Source: Computed from tables in Agricultural Finance Review, July, 1959.

States, the Northern Plains, and the Pacific regions, three-fourths or more of this credit is furnished by commercial banks. In the Mountain, Southern Plains, Appalachian, and Northeast regions, about two-thirds of the nonreal estate credit is furnished by banks. In the Southeast and Delta regions, commercial banks furnish only about one-half of the nonreal estate credit used by farmers.

In general, the southern regions appear to depend more heavily upon the FHA and PCA's as sources of short-term credit than do other regions of the nation. Moreover, while the banks have increased their proportion nationally from 59 percent in 1940 to 72 percent in 1958, in the southern regions the commercial banks apparently have provided a stable or declining portion of these short-term loans. This suggests that financing from within the region has not been readily available to farmers on terms that were as favorable as those terms available from other lenders.

The discussion of nonreal estate credit only in terms of the major lending institutions leaves one somewhat uneasy. Since 1940, new sources of short-term credit for agriculture have expanded rapidly and we know very little about them. The two sources that are, as yet, largely unmeasured are: (1) dealer credit supplied by the seller of inputs, and (2) credit that may be supplied to farmers who participate in a vertically integrated organization. In many cases the latter may be a form of

dealer credit, but the fact that more than the extension of credit is involved would appear to warrant placing it in a separate class.

Too little is known about either the extent or terms under which these sources of credit are available to farmers. Indications are that the costs of dealer credit are much higher than the costs of nonreal estate credit from the conventional lending institutions. The question arises regarding why farmers appear to be making increased use of such credit.

Numerous factors appear to be involved in the spreading of "vertical integration." The addition of product price stability, guaranteed markets, technical production advice, and many other issues may be as important as the cost and availability of credit to the producer.

In some cases, both dealer credit and vertical integration may tap a source of credit which has generally been unavailable to farmers. Such credit is sometimes furnished by an organization which has access to equity capital markets, often outside the region and outside the farm economy. Thus, integration by a national feed company or a large retail chain may mean that capital is made available to farmers under more satisfactory conditions than would otherwise be possible. This subject is discussed in greater detail in Chapter 8.

Nonreal estate credit is often used to finance new investments in land and buildings. Merchant credit has been used to improve milk houses, build facilities to produce broilers, and in some cases, to build barns. Many of the operating loans of FHA and many of the bank loans not secured by real estate are used for such purposes.

There are several indications that the growth of dealer credit in various forms may be due to the failure of the existing institutional structure to provide adequate credit to farmers for intermediate-term capital. An indication of this may be the aforementioned increase in the use of mortgage credit as a method of financing increases in nonreal estate capital. One reason for the increased use of real estate mortgage credit to finance short-term capital is the lower cost and more favorable terms. Another indication is the rise in the use of dealer credit which generally is much more expensive than credit from conventional lending institutions. Even though the credit costs more, the length of the loan offered by dealers and merchants may be more realistic in terms of the use of the capital than is the length of the loan offered by the average commercial bank. In mid-1956 banks charged an average interest rate of 8.3 percent on notes acquired from dealers as compared with an average rate of 6.2 percent for direct loans for these purposes.[7] However, almost two-thirds of the acquired notes had maturities longer than one year, whereas only slightly more than a fourth of the direct loans were written with maturities longer than a year.[8]

It is apparent that commercial banks may have policies regarding

[7] "Loans to buy farm real estate," *op. cit.*, p. 27.

[8] *Ibid.*, p. 24.

credit for the purchase of intermediate-term capital items which are no longer realistic in terms of the size of such investments and their earning power. The result seems to have been a rapid growth in the use of credit furnished by PCA's, dealers, and other sources which will provide credit with longer maturities than is usually true of commercial banks.

CREDIT AND SOCIAL CAPITAL FOR AGRICULTURE

Most discussions of the capital and credit structure of agriculture concentrate upon the provision of credit and the accumulation of capital upon individual farm units. However, it is generally agreed that the productivity of individual units is related to the general development of the area in which they are located and that the productivity of an area is partially related to the overhead or community capital available to the community. Among the items that might be included as community capital are schools, hospitals, power generation and transmission facilities, irrigation and flood control facilities, and transportation facilities (cf. Chapters 3, 4, 22, and 23).

Probably the adequacy of private sources of credit to meet the needs of agriculture for community capital can best be assessed by examining the extensive role that government has had to play in the development of such capital. One of the sponsors of this symposium, the Tennessee Valley Authority, represents one of the largest and most comprehensive investments of public capital for such purposes in the history of our nation. That investment in such capital pays in this region is no longer questioned. However, the very fact that only public sources were willing to provide this capital suggests that agriculture in general, and particularly in certain regions, finds that little private credit is available for the development of community capital.

Even the more prosperous agricultural regions had difficulty in obtaining electric power until the Rural Electrification Administration made public credit available. The policy decision was made early that the financing of roads could not depend entirely upon the ability of a region to attract private capital.

Apparently the farm economy has experienced difficulty in obtaining private credit to finance modest-scale irrigation programs. The success of the Farm Security Administration and the Farmers Home Administration with the water facilities loan program suggests that such loans are feasible and sound, yet apparently, few attracted private credit until the advent of the insured loan program.

The author lacks knowledge of data regarding the relative cost and availability of credit to finance hospitals and schools in rural and urban areas. It would not be surprising, however, to find that the cost of such credit was higher for rural areas.

If private credit available to agriculture for the financing of community capital is restricted or the terms are especially unfavorable, we

can expect continued political pressure for the provision of public funds to provide community capital. It is important to our total economy that agriculture be supplied with an adequate amount of community capital on favorable terms, even if it must be supplied by public sources. The rate at which the extreme poverty in agriculture is reduced depends in part upon the ability of the low-income regions to attract community capital to combine with the human resources in these regions. Further discussion of the role of capital and credit in rehabilitating low-income rural areas may be found in Chapters 14, 22, and 23.

AGRICULTURAL CREDIT AND THE GENERAL ECONOMY

Implicit throughout this discussion has been the assumption that agriculture has become more dependent upon external credit as a source of capital and that this dependence will continue and increase. This assumption is based upon the structural changes in the agricultural industry which have taken place since 1940, and which are still under way. If the assumption is true, what does it mean for agriculture?

If agriculture is going to require increased credit from the nonagricultural economy, it means, among other things, that the credit structure serving agriculture may need substantial revisions. The commercial credit sector of the economy has substantially altered its structure in recent years to serve the new demands for consumer credit to finance the purchase of consumer durables. It now appears possible for persons to buy autos and televisions on credit with a longer maturity than the typical farmer can obtain to purchase a new tractor or combine. As yet, no widespread revision appears to be under way in the credit practices to finance intermediate-term agricultural investments. Murray, Diesslin, and others appraise the adequacy of the credit market and credit institutions serving American agriculture, and adjustments to our present credit system are suggested in Part III.

The need for increased external credit also means that agriculture will be increasingly subject to the effects of general monetary policy upon the availability and cost of credit. Even the cost of credit for government borrowing can change sharply within a short time. We know very little about the impact of general monetary and credit conditions upon agriculture, but there are indications that the "tight money" situation has affected both the availability and cost of agricultural credit (cf. Shepardson's discussion in Chapter 18).

It is not necessarily wrong for the agricultural industry to be subject to general monetary policy. On the other hand, since agriculture sometimes has moved almost countercyclically during two successive business cycles, there is little justification for the application of general monetary policy to agriculture in order to influence the direction of general business activity.

The likelihood of increased reliance upon external credit as a source of capital for agriculture in the decade 1960-70 should mean an

increasing interest by farm leaders, policy makers, and financial institutions serving agriculture in monetary policy and the provision of adequate credit to the agricultural economy. Much more information regarding capital and credit in the farm economy will be required for these groups to develop wise private and public policies.

NEEDED STATISTICS AND RESEARCH

Perhaps the greatest need is better statistics relating to agricultural capital and credit used by U. S. agriculture. Those who are responsible for such statistics have extended their estimates heroically beyond their basic data, which unfortunately excludes data on some of the important sources of agricultural credit. Thus, we find the estimates on merchant and dealer credit "based on fragmentary data."[9] As yet, an accurate and comprehensive picture of the total farm debt and farm credit structure has never been deemed important enough to warrant inclusion in the Census of Agriculture, which is somewhat striking in view of the detailed information provided on certain other aspects of agriculture.

It is likely that there have been relatively few research analyses of aggregate credit statistics on either a national or regional basis because of the paucity of relevant data. Nothing has been done to determine the national or regional supply and demand for credit in agriculture. Nor do we have any research regarding the impact of changes in general monetary policy upon the supply or price of credit to the farm economy.

Probably the greatest gap of all, in both research and statistics, relates to the growth of community capital and its adequacy in the farm economy. So little is known here that it is difficult to assess the role of credit in providing this capital and impossible to make informed judgments regarding what this role might be or should be.

Increased interest has been shown in research on the productivity of capital on individual farms and the availability of credit to provide such capital. As yet, this research does not appear to have been extended to investigations of the kinds of institutional changes necessary to meet the needs of agriculture. Admittedly, research on institutions tends to involve values and does not allow the researcher the comfort of statistical neutrality, but it has been useful in the past and will probably be so in the future. Tolley presents a more comprehensive discussion of needed research on capital and credit in Chapter 27.

[9] Balance Sheet of Agriculture, *op. cit.*, p. 2.

Discussion

C. E. BISHOP*

Although Hathaway's presentation contains a great deal of information relative to the changes that have been taking place in capital markets for U. S. agriculture, a number of the details presented are questioned.

Hathaway states that "as long as capital formation in agriculture was largely financed internally, credit conditions in agriculture largely affected income distribution in agriculture." Also, he states that "as capital formation has become more dependent upon external financing, the total productivity of the industry is related to the conditions under which it can obtain credit." Whether the credit conditions affected only income distribution depends upon the adequacy of credit for agricultural growth and development. Even though internal financing may have constituted the major source of capital in agriculture, the fact that credit was not obtained from outside sources may have impeded the general development of agriculture. What his statement really means is that the opportunity for any individual to acquire additional assets depends upon his ability to rent, to save, or to acquire credit. Whether this credit comes from within agriculture or from the outside is largely irrelevant except in the context of capital rationing to agriculture.

Hathaway argues that adequate credit for agriculture is important because it allows farm families to realize any capital gains that may accrue to the owners of agricultural resources. I tend to share this bias, but I do not believe that this is an adequate criterion for making credit available to agriculture. If this position is carried to a logical conclusion, it would mean that no nonfarm families would be permitted to own farm resources.

Our attention is called to the fact that the "annual volume of farm mortgage credit fluctuates rather violently depending on the level of prosperity in agriculture. When agricultural conditions are relatively prosperous, the need for external financing usually declines and the annual volume of mortgage credit declines." This observation is not consistent with the data presented in Table 5.2. There was a consistent increase in farm mortgage debt from 1910 to 1924, and a decrease thereafter until 1946. Then again there was a consistent increase from 1946 through 1958. I doubt seriously that these periods of change in farm mortgage debt are highly correlated with the relative prosperity of agriculture. One might raise the question concerning what should be expected as a logical relation of farm mortgage credit (debt) and movements in farm and nonfarm incomes. Until a logical relation has been "spelled out," it is difficult to appraise observed behavior.

*Head, Department of Agricultural Economics, North Carolina State College.

In Chapter 5 sources of credit were divided into those available to the region from within and outside the region. According to Hathaway's analysis, the Southeast appears to "have an agricultural structure that is not generally able to compete with other regions for major sources of outside capital and credit," although it seems to be able to attract outside nonreal estate capital. Much more information is needed relative to the earnings of capital in various parts of American agriculture before conclusions can be reached relative to the operation of the capital market. It would seem appropriate to draw some attention to a comparison of interest rates among regions and to examine the transfer of resources within agriculture. At one time the pattern of migration within agriculture indicated a substantial flow of farm people from the Midwest into the Southeast, while very few people were moving in the opposite direction. This pattern certainly is not consistent with a low productivity of capital in southeastern agriculture.

Although Chapter 5 was directed primarily to the supply side, this reviewer feels that many of the generalizations made with regard to the use of credit may well be charged to the demand side. Hathaway argues that the low-income regions in agriculture still have difficulty in attracting external credit to provide capital. It is quite conceivable, however, that to a large extent this may be the result of risk aversion and inability to perceive adjustment opportunities, rather than capital rationing.

In his discussion of agricultural credit and the general economy, Hathaway completely disregards consideration of the optimum amount of credit; the question of whether too much credit has been made available to agriculture is not considered. Consideration should have been given to the aggregate effects of increasing the supply of credit.

The most disappointing section of Chapter 5 dealt with "Needed Statistics and Research." In this section Hathaway admonishes us to get more answers by getting better statistics related to agricultural capital and credit used by U. S. agriculture. This reviewer would like to suggest that before we launch a full-scale effort to get more answers, we need a better understanding and agreement concerning what the major credit problems facing agriculture really are. Only after this has been done will we be in position to bring our research resources to bear on these problems and find solutions to them.

GLENN E. HEITZ*

The capital and credit problems in agriculture as referred to by Hathaway present a rather cheerless picture of agriculture. The impression is left that all farmers are pretty much the same, and that they are typified by low incomes, difficulty in making financial progress, and inadequate credit. I find it difficult to accept such a generalized concept of agriculture. While most farmers may have been in this group in 1940 or before, this is no longer true. Agriculture has changed rapidly. The

*Director, Cooperative Bank Service, Farm Credit Administration.

agriculture which existed in the past has been replaced by several rather distinct groups of farmers who have differing capital and credit needs.

In dealing with capital and credit problems in agriculture, I think we can distinguish among at least six rather broad groups or categories. One of these groups includes the full-time commercial farmers. In general, farmers in this group have made good financial progress over a period of years. Large amounts of credit are borrowed and repaid by commercial farmers. These farmers produce the greater part of the farm output.

A second important group in agriculture includes the part-time farmers. They have dual sources of both income and credit. They use off-farm income and farm income to supplement each other.

A third category of agriculture which is increasing in importance and which is distinct from other segments of agriculture is timber farming. Capital and credit needs in this field are highly specialized and require long-term funds.

A fourth group in agriculture whose numbers are increasing rapidly are the rural residents. While rural residents have credit needs for consumption purposes, they do not have capital needs for purposes of production. Therefore, they can hardly be classed as part of agriculture in this discussion.

A fifth category that usually is included in agriculture when the term is used loosely consists of the numerous tracts of waste and abandoned land. Such land does not contribute to farm output.

The sixth important group, which rounds out what most of us have in mind when we speak of agriculture, includes the marginal and undersized farms. Such farms are rather numerous, but they account for only a limited portion of the farm output. This is probably the segment of agriculture to which Hathaway refers when he points to the inadequacy of capital in agriculture and the difficulty in acquiring capital. I am in full agreement that farmers on marginal units should be given all reasonable assistance that will contribute to improvement of their position. The cooperative Farm Credit Banks and Associations make many loans to farmers in this category to assist in improving, adjusting, and enlarging farm units. Loans of this type also are being made by other lenders, such as commercial banks. Many farmers who cannot meet the financial requirements of conventional lenders and who need more supervision and guidance also are being served with loans from the Farmers Home Administration. Problems faced by farmers in this group, however, often lie outside the credit field.

Hathaway refers to the difficulties farmers face in getting control of capital. While difficulties do exist in individual cases, agriculture as a whole has done a fairly good job in assembling the necessary capital and assets. Available data indicate that on the average $20,650 is invested per worker in agriculture as compared with $20,400 per worker in industry. Farmers also have a favorable ratio of equity to debt.

Cooperatives having a net worth of $3.8 billion are owned and controlled by farmers.

The "tight money" situation referred to by Hathaway has certainly affected the cost of funds, but cooperative Farm Credit Banks and Associations have not lessened the availability of funds through their organizations during this period.

Frequently we hear that agricultural lenders are not meeting their full responsibility to farmers. It is sometimes said that lending programs tend to lag and are not progressive. Lenders are partly responsible that such impressions exist, since lenders probably have been spending too much time doing their job and not enough time telling about their accomplishments. The Production Credit Associations are active in making intermediate-term loans to farmers to finance purchases or adjustments requiring payments of 3 to 5 years. About 30 percent of the loans made by the Federal Land Banks is used to finance purchases of equipment and to assist in farm improvements, while 25 percent of such loans is used to purchase farm real estate and 45 percent goes into refinancing and consolidating existing debts. During 1959 the banks for cooperatives advanced almost $700 million to help finance the marketing and purchasing activities of farmers' cooperatives. Even in the Southeast, which traditionally is considered a capital deficit area, lenders are doing much to aid farmers in making needed adjustments. A study of Land Bank and Production Credit Association financing for the period 1950-54 showed that 45 percent of all farmers in the Southeast were making needed shifts and adjustments. Of those making such adjustments, 76 percent were doing it by using credit.

There are limits to the amount of risk lenders can assume. Varying degrees of risk or loss exist in most loans made by agricultural lenders. It is expected that losses will occur on some loans and that these losses will be offset by favorable experience on other loans. But as lending is expanded to include more and more of the marginal farms where risks are greater and losses are larger, the lender is faced with the question of whether borrowers with sound, productive farming operations should in effect be asked to carry the risks of marginal borrowers. Another question is: How much risk can be taken and how much loss can be absorbed within the concept of lending at reasonable rates of interest?